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SECOND SAFETY CONGRESS

OF THE

National Council for Industrial Safety

HOTEL McALPIN, NEW YORK

September 23rd to 25th, 1913

FOREWORD

In submitting this volume of Proceedings to Members of the National Council for Industrial Safety, and others, its Officers and Executive Committeemen do so in the hope that the information presented may prove of practical interest and value in furthering the cause of the Accident Prevention Movement, and in throwing light upon everyday aspects of the work.

Opportunity has been taken to incorporate a brief topical index which may prove of service in locating specific subjects dealt with. As regards the "Round Table" Sessions, this index has not been compiled with any degree of minuteness, as the report of these Sessions is virtually a series of running notes cn interdependent topics; and it is earnestly desired that all of those into whose hands this volume may fall will carefully digest and profit by the points brought forward at such Sessions—forming, as they do, an authoritative concensus of expert opinion.

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PROCEEDINGS

of the

NATIONAL COUNCIL FOR INDUSTRIAL SAFETY
SECOND SAFETY CONGRESS,

In Conjunction with the Association of Iron and Steel Electrical Engineers,

Held at the Hotel McAlpin, New York City.

EDUCATIONAL SESSION,

Tuesday, September 23, 1913, 10:30 A. M.

PRESIDING OFFICER, Mr. Arthur Williams, President of the American Museum of Safety.

Mr. PALMER: We will start the meeting with the address of Mr. Arthur Williams, the President of the American Museum of Safety. We know the good work that is being done in that organization, and we are here to co-operate with them. We have not had an official exhibit at this Congress. There has been a modest exhibit by the Engineers, out of deference to the American Museum of Safety, who are giving an international exposition in December, and did not want the confusion of applying to the manufacturers and various people interested for an exhibit. We wanted one big exhibit, and will co-operate with them at that time. I take pleasure in presenting to you the presiding officer of this session, Mr. Arthur Williams.

Mr. ARTHUR WILLIAMS: It seems a pity to break up your Round Table with this more formal meeting, but as it is on the program, I suppose, of course, it is necessary.

The Round Table that you have been holding reminds me of the early days in the electrical industry and more recently of what we can see at the convention at Dayton last week of the International Corporation Schools Association. I think in the early days of the electrical industry we were on the verge of a great development which has grown beyond even the most expectant hopes of that time. Last week, in Dayton, we were on the verge, we thought, and the circumstances there seemed to prove it, of a wonderful educational development in the sense of continuation of education in this country, which I believe will sweep from one end of the country

to the other, and will become of international importance. It was significant at that time, in Dayton last week, that in connection with the higher education of industrial workers, looking not only to their own better development and greater usefulness to themselves and to society but also to the larger efficiency in which we conduct our industries, that there seemed to be psychologically a connection between that movement and this movement which is spreading the country over, looking toward the conservation of human health, human life and human happiness. I put the latter practically on a par with the others.

I congratulate you, gentlemen, on beginning your deliberations this morning with what can be seen to be the spirit that exists in this meeting, and I feel that just as, about thirty years ago, the great industrial development took place which has spread around the world in the industry to which I have referred, so that now we have before us the beginning of a great movement in this country, and also around the industrial world, which will make not only for the benefit of industry and for social betterment, but for the benefit of everyone individually.

I have taken the liberty of shaping up a very brief address as a basis of introducing these proceedings, and will ask that you bear with me somewhat as I attempt to read it. I want to place before you some views on this subject, and it seemed very much safer to try to do so from the paper than from extemporaneous speech. I think I will be revealing no secret when I say that our Trustees and that all of us who are interested in our American Museum of Safety are very anxious indeed that this safety movement in this country shall go on, and it shall be at all times in very close harmony. The Museum has a special charter from the State of New York, corresponding with the charter of the Metropolitan Museum of Art, and the American Museum of Natural History, but more than that, it is the American point of contact with twenty-two other museums today existing, twenty in Europe, one in Canada, and one here. These museums are inter-related, exchange ideas and exchange exhibits, and I think you will agree with me it is but a very proper and fitting desire, and in fact I think our American institution, which we are trying to make countrywide, would fall far short of the natural responsibilities resting upon it if it failed to present to all organizations such as your own, the cause which the Museum

represents. I believe, for the future of our American industry, it would be very unfortunate if we were not to get together, not physically perhaps, but in some way, so the experiences and lessons learned by one may be at the disposal of the other.

(Mr. Williams thereupon proceeded to read his paper, as follows):

In opening this Educational Session, I can perhaps do no better than to call your attention to the little quotation from "Life" which was placed upon the back page of our Tentative Program, sometime ago. The clipping, which appeared in "Life" on August 28th of this year, is headed "Progress" and reads as follows:

> Iroquois Theatre, Chicago, 1903; 600 dead; majority children.
> Steamship Slocum, New York, 1904; 1,000 dead, largely women and children.
> Austin Dam Disaster, Pennsylvania, 1911; 100 drowned, chiefly women and children.
> Asch Building, New York, 1911; 140 dead; majority factory girls.
> Steamship Titanic, 1912, 1,600 drowned; men over-whelmingly predominating.
> Binghamton Fire, 1913; 65 dead; factory girls.

Here are 3,505 lives wiped out by disaster and contemplation of this list horrifies the average reader. Yet how many people who noticed this gruesome table had any realization that the deaths thus recorded were less than a twentieth of those happening from accident every year in this country? How many casual readers would believe that in 1912, according to the Inter-State Commerce Commission, 10,585 persons were killed by railroads in the United States? How many men and women would credit the statement that more than 75,000 lives are lost through fatalities in our country every twelve months?

These questions bring us face to face with underlying human unimaginativeness. It takes terrifying catastrophes, war and rumors of war, to stir our pity but to the grim tragedies of every day we give little heed. It is thought we need the setting of a holocaust to label an incident for us with the words, "this is tragic". Then, and only then, do we pour in money for relief funds, hold memorial services, erect tablets, and in course of a few weeks—forget.

All this is not because we are brutal or callous, but simply because

we do not look for tragedy in the commonplace events of life. And this means that before human lives can be saved and suffering diminished in this country, both ignorance and unimaginativeness must be combatted. For it is these two qualities which stand in the way of progress.

And what is the weapon with which to wage our fight? Briefly, it is education. Education alone can bring about transformation in national thought. So it happens that training of the public to recognize the value of human life is the greatest task of the "safety man".

(Here Mr. Williams interjected the following extemporaneous remarks):

In railroading, I have been told it is as high as ninety per cent. In other industries it may fall to seventy per cent, but the fact is that the great majority, almost within ten or fifteen per cent of the accidents of which we hear today are not due to defects in arrangement or mechanical plan or any machinery or of oversight on the part of employers of labor, but to carelessness either on the part of the person injured, or on the part of some fellow worker. Likewise, I am of the opinion, though we have not much data on the subject, that industrial disease, that causes epidemics, tuberculosis and various fevers, such as typhoid, are the result not of inherent defects, that is to say, that are inherent to the conditions surrounding our daily life, but are the result of ignorance on the part of those who are affected either by industrial disease or by contagion. The answer is "Education." One of our Trustees pointed out not long ago that in the early days of our Republic, before the creation of our Republic, when danger was surrounding everyone, we educated ourselves into a subconscious state of expectancy, placing us subconsciously on guard, so at the approach of danger, almost to a supernatural degree, we were aware of the fact. Times changed. Law and order came into being. Everybody is guarded by law and by the police and by the militia, and what has been the result? We have fallen backwards into a state of lack of watchfulness for danger. We have fallen into a state of mind where we expect somebody else to protect us from danger, and the result has been this awful degree of accidents we find occurring from day to day upon our highways and in our industries. One illustration bearing upon that point: Two weeks

ago I was riding down town in an automobile to attend a meeting. Going through Park Place, by the Post Office, the street had been freshly sprinkled, and made skidding quite likely. A gentleman of forty or fifty, somewhere along in there, walked across the street looking in the direction of traffic, that is, looking down the street rather than up. My driver began to sound his horn, but this man, whose mind was occupied with business or something of the sort, and certainly not with his own safety, paid no attention whatever to it. Putting on the brakes, my man found he could not stop the car, and he came within three or four feet of this man on the street. Finding he could not stop the car, all he could do was to run it up on the sidewalk, and then this man woke up to the situation and he turned around and commenced to abuse my driver most profanely. I looked out of the window and said, "My dear sir, why do you curse my driver? Don't you know he saved your life, and if it had not been for what he did and not for what you had done, they would now be putting in a call for an ambulance to take you to the hospital or to the morgue," which is a fact, and riding around the city, as I do from day to day, I think my driver saves the life of at least one person on the street every day in this sense, that the person on the street has done all he or she could do to be killed, were it not for the watchfulness of the men driving the automobile, and what I say in regard to this elementary condition on our streets, I believe you will find is true in industry throughout. I know in my own experience, in electric light work, usually the man that is killed as the result of an accident is the old man who has grown careless, and not the young man who has upon his mind constantly the thought that working in a factory, working among moving machinery, is dangerous, and that he is in the presence of danger, and he must be on the lookout for it all the time. It is like the case of the miners. They say old miners carry dynamite in their bootlegs.

(Here Mr. Williams resumed the reading of his paper.)

Sometimes it seems hard that we cannot discover a panacea in legislation or mechanical appliances which—once put in force—shall go on conserving flesh and blood without further effort on our part. Yet we know that only a third of industrial accidents can be prevented by apparatus. The remaining two thirds must

be warded off through education. And this process—conversion of the individual to carefulness—is slow. But if it is slow it is sure. And this should both console and inspire us. "The mills of the gods grind slowly but they grind exceeding fine."

I wish to speak of the coming International Exposition of Safety and Sanitation to be held in this city, next December, because it is bound to be an educative force. This Exposition—under auspices of the American Museum of Safety—is going to put before the people of New York the most concrete information possible on accident and disease prevention. No visitor will fail to go away from there without having a clearer idea of the life waste at present prevalent in this country; of the fact that such waste can be controlled and lessened; of means for accomplishing these ends. And every person whom this Exposition educates in these matters will unconsciously help in enlightening someone else.

(Here Mr. Williams interjected the following extemporaneous remarks):

The Art Museum is devoted to the aesthetic development of society. The Natural History Museum is devoted to our education along natural lines, but what is more important is the institution and the equipment by the State, and not by private philanthropy, of museums devoted to the protection of human life, devoted to showing how to make the home sanitary, and devoted further, as in that great institution in Munich, to bringing to the attention of those interested methods of obtaining a fairer relationship, to use very common terms, between capital and labor. I hold that the entire range of human relationship in the industrial world may be rightly covered in this great museum movement. I think I may say, without being misunderstood, that notwithstanding the extent to which this movement for safety has taken place in this country, there are those who still think it is a hobby.

(Mr. Williams at this point continued reading his paper.)

At the New Grand Central Palace from December 11th to 20th, the public will find a collection of exhibits representing American Progress in conserving human life. Side by side examples of the best European methods will be shown through the courtesy of great foreign Museums of Safety. It would be unsafe to hazard

a guess as to how many Americans will there gain their first inkling of the fact that Europe has outstripped our own country in protective and hygienic measures. Dissemination of this unflattering knowledge will do much to forward the cause of safety in the United States.

One department of the Exposition will be devoted to Accident Prevention. Under this head exhibits will be further sub-divided in the following manner:

General—
- Boilers and piping.
- Power machines.
- Transmission systems.
- Electro-technics.
- Elevators and hoists.
- Fire and explosives.

Particular—
- Iron and Steel.
- Mining.
- Metal trades.
- Wood-working.
- Chemical industries.
- Gas.
- Textiles and clothing trades.
- Paper and printing.
- Building trades.
- Leather.
- Brewing.
- Transportation.
  - Land.
  - Marine.
- Agriculture.

Miscellaneous—
- First aid to the injured.
- Inspection methods.
- The safety engineer.
- Safety committees.
- Blanks and forms.
- Museums of Safety (State).

Museums of Safety (private).
Traveling exhibits.
Illustrated lectures on safety.
City accident stations.
European system of workman's insurance.
    Accident.
    Sickness.
    Invalidity.

The Department of Industrial Hygiene will comprise:
Scientific apparatus for testing the purity of air and water.
Ventilation.
Lighting.
Heating.
System of dust and gas exhausts.
Baths and wash rooms.
Water closets.
Dining-rooms and canteens.
Suitable clothing.
Occupational diseases and their prevention.
Industrial poisons and their prevention.
Lessening the excessive use of alcohol.
Nutritive values of food stuffs.
Factory hospitals and emergency rooms.
School hygiene.
The care of the body through athletics and sports.
Milk.
Tropical hygiene.
Teeth and their care.
The feet and their care.
Eyes, ears and throat.
Red Cross preventative work.
Care of the soldier and sailor in war and peace.
    Barracks.
    Transports.
    Food.
    Exercise.
    Clothing.
Life boat stations.

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City Hygiene will be treated in the following divisions:

Street cleaning.
Garbage removal and disposal.
Small parks.
Play grounds.
Water purification.
Transport of the sick.
City planning.

Home and social sanitation will both receive adequate attention, while methods for bett- ing conditions between capital and labor will be grouped under such subjects as:

Vacation house.
Educational classes.
Thrift promoting enterprises.
Libraries.
Factory rest-rooms.
Social secretaries.

Among the important exhibitors who have already reserved space in the Exposition are:

Allgemeine Elektricitats Gesellschaft of Berlin.
Swiss Government.
National Cash Register Company.
Consolidated Gas Company.
New York Edison Company.
Travelers Insurance Company.
Brown & Sharpe Manufacturing Company.
West Disinfecting Company.
United States Steel Corporation.
Pennsylvania Railroad Company.
Southern Pacific Company.
Chicago & North Western Railroad Company.
New York Central Lines.
McNutt Non-Explosive Can Company.
Norton Company.
Prudential Insurance Company of America.
Metropolitan Life Insurance Company.
American Abrasive Metals Company.
Aetna Life Insurance Company.

It is scarcely necessary to urge upon you the value of this, the first International Exposition of Safety and Sanitation ever held on the North-American Continent. It will mean one more turn of the wheel of progress; and every convert gained to the gospel of "Safety First", through the direct or indirect influence of this undertaking will bring us one day nearer that time when people in general shall comprehend the burden of loss and suffering laid upon a nation by needless human sacrifice.

(Here Mr. Williams added the following extemporaneous remarks):

I understand that in our country accidents kill 75,000 a year. That is to say, 75,000 are killed; but the accidents that cause serious injury run into several millions, and in the aggregate these losses, this deprecation of human value, and these death aggregates, far exceed the loss as the result of war. I understand that our annual loss here today in this country from industry exceeds the death and the injured loss in our own Civil War, and yet all over the world we hear of the effort to eliminate war, because of the death and the injury list, but until very recently nothing has been said, until this movement began in which this Association is taking such an important part, of elimination of death and accidents from industry. In the social and industrial development of the future there will be high place for the social and safety and efficiency engineer, I think higher practically than any other technically educated profession. I say, with great sincerity, that I think the safety engineer, the sanitary engineer, in regard to home life and industry, that those professions are going to outrank the civil engineer or the electrical engineer or the mechanical engineer of the future. More than this, every individual will be his own social, safety and efficiency engineer, although perhaps not as highly specialized as the man or woman devoting his or her life to those professions.

As a concluding statement, I have before me, but do not know that I can give full publicity to this movement, the safety education prospectus of one of our great railway systems for the coming year, but it is going to cover—and I understand it is soon to be announced publicly—safety talks in the schools. This is a continuation of the work started last year by the American Museum of

Safety in New York, seeking to educate school children on the subject of safety. The proposition had the immediate approval of the Board of Education, and after it was started, the Board of Education, from its highest officials right through the staff, gave the Museum the heartiest co-operation, showing that that great organization of educators looks upon this movement as being one of great importance in the lives of children. The Museum lectured to something like eight hundred thousand or nine hundred thousand children, part of the cost being paid for by the Brooklyn Rapid Transit Company. The children brought this feature of safety into the home, and I have no doubt that the entire population of this great city to a very great extent or a very large percentage, at least, was affected by that educational movement through the public schools. Now, this great railway proposes, as I say, to carry out safety talks in the schools from year to year. I think they should be part of the curriculum of every school. On one day of last year a lecture prepared by the Museum in one day of one hour was read by every school-teacher, twenty thousand of them, in the greatest city, to eight hundred thousand children, and that was done in addition to the lectures given by the Museum teachers. This railway company proposes to have safety plays; safety talks to parents in school buildings, where mothers' clubs exist; and possible distribution of literature to parents. I think that is very important. A parent will often be careful for his child where he won't be careful for himself. They also propose to have the safety exhibits in the various schools, where the schools desire them. That is the year's program of one railway corporation for 1914. In what I have said, I have tried to give you some ideas in regard to the safety movement, something of the American Museums of Safety, and with which I hope this Association will become related in some way for our mutual good, and something of the great field which, in my judgment, lies before this movement for the future.

I now have the pleasure of introducing to you as the first speaker on the morning's program, Dr. W. H. Tolman, the Director of the American Museum of Safety, who has just returned from Europe, and whose subject will be "Plans of the American Museum of Safety," Dr. Tolman. (Applause.)

Dr. W. H. TOLMAN: Mr. Chairman, Ladies and Gentlemen: Just thirteen years ago this month a germ idea was brought to this country from Europe. The idea was somewhat new and startling. Concretely it might be said to have taken the expression that as large a number as fifty per cent of industrial accidents were preventable. This idea was not entertained seriously to any extent. It was scoffed at and jeered at, but finally it began to take shape, and the industrialists who could not at first be persuaded that it was a practical idea gradually became convinced.

Thirteen years ago, Mr. Chairman, a conference like this would have been impossible. If you had invited an industrialist to attend such a conference he would have thought you were crazy in the first place and that you thought him crazy in the second instance, but you see the extent now to which this idea has taken rootage.

I have just returned from the Housing Congress at Amsterdam, and while there I re-visited Holland's Museum of Safety. That little industrial country has the honor ot being the first to establish one of these life-saving institutions. It is apparent that individuals in Holland, the city and the government have appreciated their social and industrial duties because they have now a museum housed adequately in its own building. It is very interesting to note that the location of the Safety Museum is diagonally opposite the great Ryjk's Museum, that imperial collection of art and architecture. Now before you have great museums of art and natural history, you ought to have, as Arthur Williams has pointed out, museums of safety, to keep people safe and healthful, so that they can go to these other educational institutions and enjoy their advantages. In New York, we have this triology of art, natural history and safety, these three great museums.

Amsterdam offers the best type of administration for a safety museum. The city gave the site, the government the building, and private subscriptions the operating expenses. The Dutch are thrifty, and they are canny; when the question arose as to the location of their museum, in the social or the political capital, at The Hague or at Amsterdam, they decided the museum must be located at Amsterdam,—the industrial center of the country. There is the greatest opportunity for the widest measure of usefulness, and so

the government, the city and private individuals co-operated by locating it in Amsterdam.

Your chairman has referred to the internationalism of this movement. He has told you how the American Museum is in touch with the twenty-one European museums of safety. On the steamer I happened to cross with Dr. Welch, of the Johns Hopkins Hospital. He was greatly interested in having more definite information about the museum. He expressed the thought that the department of industrial hygiene was a section which the medical men should have taken up, and he predicted that the time would come when the medical fraternity would throw themselves into that field of prevention intelligently and more actively. In discussing our European lecturers I happened to mention that Lehmann of Würzberg was one of our collaborating members. He said: "Do you mean to tell me that Lehmann is your collaborator?" I said, "Yes." He said, "You're to be congratulated, because Lehmann is in the very front rank. He is the greatest expert in industrial hygiene in Europe, and what Lehmann says goes everywhere in scientific circles." I told him about Rambousek of Prague, Oliver of London, Francke of Frankfort on the Main, and Llorente of Madrid, who are friends and advisers of our museum, and he began to have some respect for the movement. This is very well comprehended abroad and is looked up to with very great respect. It is considered one of America's great institutions, in the possibilities which lie before it.

Now Mr. Williams has given you beautifully the philosophy of the movement and enunciated some of the guiding principles. Americans are nothing if not practical. They want to know what has been done, what has been accomplished. It is very well to talk about projections, but what has actually been done appeals to us more.

A year ago last February a very distinguished gentleman came into the Museum and I was attracted by the manner in which he approached the general subject. He said he was in trouble. I found he was a naval man. He told me that he had commanded battleships in different parts of the world; our American battleships. He knew the inside of a battleship like his own pocket, but he was in trouble. Orders had come he must make the Navy Yard in Philadelphia safe, where some seventeen hundred

men are employed. He had written to the Government, who could not give him any information for practical help, and somebody had suggested the Museum of Safety. So he had come there for assistance. I asked him if he would not like to have us go down and look over his plant with one of our experts? He said he would, and to make a long story short, we spent two days examining each machine, detail by detail, in the Navy Yard. There are boiler shops, paint shops, jointer shops and so on, at the yard, and Captain Anderson accompanied us with his adjutant, taking notes of each machine. In the course of the year I was there again, when I went over the same ground, and had machine after machine pointed out to me that was safeguarded according to the suggestions which we had made. Many of the safeguards were home made; they were not expensive or elaborate.

At the conclusion of that inspection trip, we made for Captain Anderson a special report of about 150 typewritten pages, as you can see, fully illustrated with the before and after aspects of machines, the cost of the guard, and so on. (Holding up book.) That report was sent by him to the United States Navy Department and it was copied and sent to every navy yard in the country, so you can see how it served as a center of usefulness.

In addition, illustrated lectures were given at the Philadelphia, Charleston, New York, and Norfolk yards. As a result of the presentation at the Norfolk yard, the commandant told me hereafter no orders, no requisition for machinery or tools would be honored by the Norfolk yard unless it was previously made safe, so you can see if these suggestions are presented in the right way they do find a response. That is true, I find, of an increasing number of industrialists, who are willing to pay the extra price for the machine or tool that is safeguarded.

That report, made by the Museum of Safety, led to a request from the Navy Yard for a second report. "We are interested now," they said, "in hygiene, in industrial hygiene."

I was very much interested the other day to hear my friend Close say that he considered accident prevention only about thirty per cent of the game. In other words, education and health promotion comprise the other seventy per cent.

Now, at the Navy Yard, they were having trouble with lead poisoning. The men obliged to paint inside the double bottoms of

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the ships, were overcome with the fumes, so the Museum was asked to make another report—on lead poisoning—for the Navy Department.

Mr. Williams, as president, directed the work and our Section of Industrial Hygiene, under Dr. Ditman, took it up, and last year we made the study of lead poisoning and its prevention abroad at the same time that we made a study of four or five of the important European countries to find out what was being done in accident prevention. We took up the study of lead poisoning, assuming the toxicality and injuriousness of lead and with a view to showing what was actually being done in the way of prevention. The report sent to the Navy Yard in Philadelphia was fully illustrated with unusual photographs.

Some time after the report had been placed in the hands of Captain Anderson, the following letter was received by the Museum, addressed to Dr. Ditman, chairman of the Section of Hygiene:

(Reading): "This Bureau is in receipt of a special report on lead poisoning made by the American Museum of Safety for the Navy Department of the United States. This report is of such value that it is desired to publish, in the *United States Medical Bulletin*, a lengthy extract, together with some of the illustrations. Please inform me what steps it is necessary to take in order to secure permission to reproduce these pictures and the abstract, full credit for which will be given to the American Museum of Safety.

"C. F. Stokes,
"Surgeon General,
"United States Navy."

President Williams has referred to the school work which was done. He emphasized the work which is being done in inculcating ideas of safety and self-control to avoid accidents in connection with street traffic. Annually 40,000 children are leaving the public schools of New York City to go to work. A boy going home sees a sign in a grocery store, for instance, "Boy wanted;" and he rushes in and gets the job without any fitness for the work perhaps; or he goes into a factory and takes a position without any adequate preparation. The Museum proposes to get hold of those 40,000 children and give them some rudimentary ideas of the new conditions they are going to meet when they take their first positions.

Based on that instruction will be an examination, and those who pass the examination will be given a safety certificate. In other words, we are going to prepare the new workers for industrial conditions, and if a lad comes to you for a position having a safety certificate, you will know he will make a better workman. He is better qualified to take care of himself, and of your time and material than other applicants. So there is the idea of the safety certificate.

Mr. Williams also referred to the Exposition of Safety which is to be held in December. The Museum proposes to hold the first International Exposition of Safety and Industrial Hygiene. We have taken the Grand Central Palace, where we shall have some fifty thousand square feet of space, and we propose to make this safety exposition an annual feature for the next five years at least.

I have just come back from abroad, where we received the promise of exhibits from Spain. The Swiss Government is going to send us an exhibit of everything which that country is doing in connection with her insurance, her parks and playgrounds, and other activities affecting the health of her citizens. The London Board of Trade and the Home Office will send in exhibits; and our own industrialists in this country are already co-operating, so that it will be possible for you to see in ten days the very latest and best devices for safety and health improvement which we can bring together. The railroads and other large industries have already taken space.

In connection with the exposition will be the annual award of the Museum's gold medals. Mrs. Harriman recently gave the Museum, for award, a medal to be known as the E. H. Harriman Memorial Gold Medal, which will be given to the railroad having the least number of accidents during the year. That medal will be awarded in December. Plans are under way for a series of conferences, in which the experts will bring out the latest results of their observation and experience.

Mr. Williams made a plea for co-operation in this movement and stated how the Directors are thoroughly in accord on that. The American Museum of Safety was the pioneer movement for safety in this country and has certainly been an inspirational point of contact in developing many of these ideas. It will welcome the

largest measure of co-operation. In fact, it makes an appeal for the co-operation of these various movements, which are working towards a common end and purpose.

I believe the program calls for a meeting this evening at the Museum, where we shall be very glad to have the pleasure of welcoming you and showing you some of the resources which are brought together there for the purpose and object which President Williams has outlined to you. (Applause.)

Chairman WILLIAMS: I might say to the Association, speaking upon the 1915 exposition at San Francisco, that the American Museum felt just exactly as I think we all feel here, that this cause of safety and of health should have a very prominent place in San Francisco, and a committee was therefore appointed to present the matter to Congress, and to those in charge of the exposition, and to ask for a separate building devoted to the conservation of human health and life and welfare. It is barely possible that an appropriation for that subject can be still secured, especially if we are all united together in getting it. I think it is of at least equal importance to show what can be done and is being done by our great industries in this country for the conservation of human life, as to show recent improvements in machinery or to show new inventions, or to show pictures, or show anything else that will be shown at San Francisco. I say that anything and all that will be shown there is, in my judgment, subordinate to that which could be shown under the auspices of our Government or under the auspices of the exposition assisted by just such organizations as this, upon what is being done in this country and in Europe for the conservation of human health and life and happiness, and what is being done in that direction, I think I may say frankly, in the direction of securing for labor fairer compensation, than is merely covered in the ordinary wage which the industrial worker now gets at the end of the week, and if this Association sees fit, Mr. Secretary and Gentlemen, to take the matter up, I think it is timely, and would be a very great help for us in securing the object, and I think it would be very desirable if we could merge our forces together, because, you see, if we send a number of representatives to Washington together, all representing different groups, the chances are what we all want will be lost in the shuffle. If we cannot get a separate building at San Francisco,

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and I do not want to give up the idea of getting that building until I know we cannot, then I understand the authorities in charge of the Fair will devote a very large part of another building to the safety movement, and our plan was this, to take the exhibits of the First International Safety Exhibit of this year and of the 1914 exposition, for which plans are already being made, and have those in transit to San Francisco, so as to help in making a more impressive exhibit there in 1915. The things fit into each other, and will undoubtedly be very beneficial toward helping this movement, and I think the heartiest support should be given to it.

Secretary PALMER: I received a letter from the Honorable Mr. Bremner thanking us for allowing him the privilege of presenting the subject of a National Safety Museum, and it was my understanding that he was to be here, both through his letter and through the assurance of Mr. Bryant, Commissioner of Labor. In Mr. Bremner's absence I will suggest, Mr. Chairman, that we call upon the representative of the Panama-Pacific Exposition, to present his paper at this point.

Chairman WILLIAMS: Is Mr. Lively in the room, and will that be satisfactory to you, Mr. Lively?

Mr. LIVELY: Yes.

Chairman WILLIAMS: And I presume it will also meet with the approval of the conference. (Applause.)

Mr. DANIEL O'CONNELL LIVELY: Ladies and Gentlemen—I have not a paper, and in my presence here am representing the Chief of the Department of Social Economy of the Panama-Pacific International Exposition, under whose charge such exhibits as have been spoken of by the Chairman would come.

The Panama-Pacific International Exposition looks to Social Economy in its various branches as its most important opportunity and asset as an educational institution.

In planning the exposition at San Francisco, it has been intended by the officials in charge that it shall differ from other events of similar character in that it shall leave an impress upon humanity and humanity's good that will last long after the exposition and its history, perhaps, shall have been forgotten. So in the division

of exhibits more space has been given to social economy, in its various branches, than to any other part of the exposition.

Permit me to say that the exposition at San Francisco will be the only one of the great World Fairs that will be contemporaneous in character. There have been four World Fairs that have preceded; one at Chicago, celebrating the discovery of America, retrospective and historical in character. One at Philadelphia, celebrating the Declaration of Independence, which was also of similar import. One at Paris, which celebrated the finish of the century and the accomplishment of things that had taken place during the preceding one hundred years, and the one at St. Louis, celebrating the Louisiana Purchase, historical, you may say, and retrospective in character.

The exposition at San Francisco celebrates contemporaneous events, and in keeping with that general plan, no article of manufacture that has been created at any time prior to ten years preceding the exposition can be entered for competition, and so throughout its entire scope, it is intended that such movements as this, which are modern, Mr. Chairman, and such thoughts as are expressed here shall have the fullest exemplification, so that every person who passes through those gates shall have the opportunity which you can afford them in preparing, for their inspection, a Museum of Safety Appliances, by holding there a truly international meeting of the means that are given to the consideration of safety, and that, according to what I learned this morning, embrace, further than appliances which prevent men from being hurt by contact with machinery, social hygiene, and the health and comfort of workingmen and the health and comfort of those who are not workingmen might be included in the plan and scope of such a meeting and such a gathering of men of international repute.

It is the hope of the exposition management that the plan suggested here will come to realization; that you will be able to impress upon Congress the importance of this great movement; and that they will see fit to make an appropriation which can be used for the construction of a building to be utilized, with such exhibits as you propose to prepare. If you are not successful, you are assured that you will have the larger part of the Palace of Education, to be used by the Department of Social Economy, of which your subject, as I have just stated, will be so large a part.

Education in its modern form, in keeping with the plans of the exposition, differs from what we considered education was, say, a decade ago. Now the study of the arts and sciences and of the dead languages occupy a very small position in the general plan of education. Such movements as this are more educational, such things as you teach, and such things as you show will leave a greater impress upon humanity and upon its advancement, and its continuity, than the study of all the dead and ancient languages that are listed between the covers of books.

A telegram reached me at Washington yesterday asking me to come on to New York and appear before you, and to urge such co-operation as you will give; that you shall prepare a comprehensive plan of making an exhibit there; and to say to you that this is the first event of its character that will be given in what may be termed the Pacific area (the people west of the Rocky Mountains), not so much given over to manufactures as you are; not confronted with the same problems of hygiene and public health as you are, but still constituting a large part of this great country, and not only the people of the Western part of the United States, but the people in countries that have not heretofore taken part in similar expositions. China and Japan and the Philippines and the countries of South America have already signified by appropriations and by the selection of sites that they are to be represented in this exposition. To-day 27 foreign countries have officially expressed their intention to take part in the Panama-Pacific International Exposition, and they are urged to come not only as exhibitors of their products, but as students of problems such as you are handling, and other problems that bear upon mankind and its health, and I may say the longevity of the human race, and its betterment generally, and the problems that they are confronted with which are growing in magnitude as the days go by.

I bring you this message, Mr. Chairman, that the Panama-Pacific International Exposition is eager and willing to co-operate with you in every possible way, and to aid you with every possible means. We appreciate it, that you expect to hold a Congress in 1915 there, and we hope to make that Congress the most notable event of its character that has taken place in the annals of mankind. If there is anything that we can do, if there is any co-operation you

may suggest to us, you have only to mention it, and we will use our best efforts to see that it is put into effect. (Applause.)

Chairman WILLIAMS: I think you will all agree with me that Mr. Lively has brought a very important message to us. I am reminded of a great exposition that was held in Dresden three years ago, in which the predominant note all through was that which was being done at that time for the conservation of human health, and for the improvement of the surroundings in our daily lives. It was a very hot summer, exceedingly hot, and yet the records show that more than five millions of people attended that exposition during those summer months. Last year, at the New York Electrical Show, a comparatively small but still a space of reasonable size was devoted to this very subject, under the auspices of the American Museum of Safety. It was put in there at the request of the directors, the directors of the show company feeling it would not have perhaps very much public interest, and yet the most interesting exhibition in the entire structure, was that which had to do with this question of human health and safety. The place was crowded from the time the show opened in the morning until the show closed at night, it was very hard to get the people to move away from it, again showing this intense interest of the people at large in anything that has to do with human welfare.

The Chairman thereupon introduced Mr. H. L. Brownell, Safety Inspector of the Chicago Railways Company of Chicago, Illinois, who exhibited a number of stereopticon and moving pictures to the members present.

Mr. BROWNELL: In Chicago, we are trying to make that city the safest place on earth. We all agree that it is not so at the present time. We, the Chicago Railways Company, have worked very diligently in the short time that we have been in the safety movement, and I feel as if I was a little out of place talking to you old veterans, because I am only an amateur, and I wish to take this opportunity of thanking all who have assisted me in my work of organizing the Safety Bureau of the Chicago Railways Company.

The Chicago Railways Company started its work in November, 1912. We carry on an average of two million passengers every twenty-four hours. We carried during the month of July 57,000,000 passengers, very nearly two million every twenty-four hours.

During the month of July we did not have a fatal accident on the line of the Chicago Railways Company, due entirely to our safety work, principally with our own employes. Prior to that, we had from twelve to fifteen fatal accidents during the month of July because of certain conditions. The conditions are these, and they prevail in all other large cities. Starting with the last day of June the school children commence the summer vacation, and are constantly in the street. That makes the month of July our most trying month, as we have had so many fatal accidents during the month of July to school children.

During the month of July there were over twenty people killed by automobiles in the city of Chicago, and eighteen of those were children. I had the honor to be selected as a member of the Public Safety Commission of Chicago and Cook County, which was a commission started by Coroner Hoffman of Cook County, and not only am I working individually as a member of that commission, but I am also lending all of our bureau work to this work. A number of the members of that commission are present here with you. They are your members, and the president of that commission, Mr. George H. Whittle, will be heard from later on in your program.

I will show you three reels, and some thirty or forty slides, which show the work which we are carrying on in the city of Chicago. I have just completed twelve exhibitions in the city parks of Chicago, showing these reels and these slides to at least fifty thousand people. A very great majority of them were school children, and in that way we have already started to work very actively. We are going into the public schools at the request of Mrs. Ella Flagg Young, Superintendent of Schools. At her request, we are going to give these exhibitions in the three hundred schools in the city of Chicago, as fast as we can give them. I have supplied to the Board of Education of Chicago ten thousand of pamphlets. They are safety suggestions for school children. They are placed at the present time in the hands of seven thousand of the school teachers in the public schools in the city of Chicago for their help in instructing the scholars with regard to safety. Mrs. Young has issued orders requesting the teachers to teach Public Safety at least one day in the week, and in fact she has designated one entire week, and they are to teach safety a portion of each day to the pupils in

the public schools. Later on we, as the Chicago Railways Safety Bureau, or the Public Safety Commission, will distribute four hundred thousand of these pamphlets, so one may be placed in the hands of every scholar in the public schools of Chicago. (Mr. Brownell thereupon showed a number of stereopticon slides, and several reels of moving pictures, showing how accidents occurred due to the fault of the employes of the company and other slides and moving pictures showing how accidents occurred by reason of the carelessness and negligence of passengers or pedestrians upon the streets.)

The Chairman next introduced Dr. C. B. Connelley of the Carnegie Institute of Technology, Pittsburgh, Pa.

Dr. C. B. CONNELLEY: Mr. Chairman, Ladies and Gentlemen: It is a little like carrying coals to New Castle to have me come to this Convention to tell you what to do, but in Pittsburgh we are trying to have all concerned appreciate the necessity of teaching the engineer, the industrial worker, and the school children what the "Safety First" motto means.

We have received our impetus from no less a man than your fellow-townsman, Dr. Tolman, and Mr. Close of the United States Steel Corporation comes to our institution now and then and tells us the necessity of getting before our student body improved machinery. We have, also, been associated for a number of years with Mr. Taylor Allderdice, First Vice-President of the National Tube Company, who is a member of the Pittsburgh Board of Public Education. Mr. Allderdice is very much interested in this factor of safety. We feel very hopeful that in a little while we will be doing something in the City of Pittsburgh that is worth while. The topic to which I will address myself in speaking to you is—Safety and the School.

If self-preservation is the first law of nature, then the welfare of others must come into the same category as a matter of common honesty. Too often, however, it has required nothing less than the bitterest sort of an experience to stir up that fellow-feeling for another which takes one away from himself and shows him that somebody else has as much right to live as he has; and that he is more or less responsible for that life. On every hand we are beginning to recognize that the great problem of modern ex-

istence is to reconcile to modern conditions that mighty principle founded upon the decalogue itself, namely, "Our Duty Towards Others." It is therefore, of more than passing interest and a hopeful sign of the times to note just how the world-old question "Am I my brother's keeper?" is being answered in terms of highest respect for human life in this so-called Industrial Age in which we live.

It may be true that much of what has been done in the name of Safety and Accident Prevention cannot be attributed to any exalted feeling of charity so much as economical consideration, yet the results that have been attained and the far-reaching possibilities that lie ahead must convince even the most skeptical that the "milk of human kindness" is at the bottom of the world-wide movement and hence its success. It has not been so many years since that the feeling became prevalent that man has no right to pile up money over the maimed body of his fellow-man. Nor has any corporation the right to lose sight of its identity as a combination of human beings to such an extent as to forget that it makes its money by means of the brawn and brains of men who deserve to live and move in the same sphere of safety and comfort as the man at the helm.

It is not enough to say sympathetically "Poor Fellow" when one gets hurt in the shop, in the yard, or anywhere while he is on the job. Nor do we do our whole duty when we pay the doctor bill or the funeral bill, or furnish money for the upkeep of the family, pay accident benefits or hand over a pension to the widow and dependents. The sympathy that really counts and the service that is most effective is that which sees the danger beforehand and makes provisions to remedy it; that provides safeguards wherever practical; and that spares no expense in enlisting the men at work in a safety crusade for the mutual benefit of all concerned.

It is interesting to note how the gospel of safety is being preached and how its leavening influence is awakening the public conscience. The ordinary layman in this matter may get his first intimation of the Safety idea by strolling into an out-of-the-way railroad station and noticing such signs on the walls as "Get the Safety Habit." "Tell the man with the button," etc. Upon further investigation he will discover that less than two decades ago a movement was voluntarily inaugurated by one of the leading

railway systems of this country to eliminate, if possible, the number of accidents and fatalities that occur annually in the field of transportation. He will learn that owing to this movement many of the modern appliances in the form of various makes of brakes and couplings, block signals, steel cars and the like came into being. And yet he will be appalled to know that the number of persons killed averages 10,000 per year and the number of injured no less than 150,000 on the railroads of this country alone.

It may so happen, too, if he finds himself in the vicinity of mills or manufacturing plants, that he picks up a stray yellow envelope, an ordinary pay envelope, and his attention will be attracted by a notice printed in flaming red which may be read as follows: "Use safety devices where provided. Don't take a chance." "Every sign in the mill means that the danger pointed out is there. You must obey these warnings." "It is your duty to report unsafe conditions to your foreman or superintendent." "Your efforts to prevent carelessness, and correct dangerous conditions, will make it safer for you and your fellow-workmen." Further inquiry will reveal the fact that many mills and manufacturing plants are waging an earnest campaign against accident. One of the largest steel corporations of this country, no less than five years ago, first took serious notice of this matter and appointed a committee to investigate living and working conditions of its employees and came to the conclusion that it was a paying proposition, aside from humane interests, to spend large sums of money to improve these conditions by devising safety appliances, maintaining mill hospitals with a corps of its own physicians, providing sanitary conveniences and to employ safety experts—safety engineers, if you please—to co-operate with committees of foremen and workmen in carrying out the idea. In fact, the movement has spread to such an extent that very few of the larger firms can afford to remain without the fold.

A recent Accident Prevention Exhibit in just one of our progressive cities furnishes a concrete example of how the manufacturers are rallying to the Safety Standard. In that city the exhibit brought out the fact that 18 or 20 groups of industries were enlisted, including the foundry, the steel mill, the power plant, cranes, machine shop, punch press, wood-working, electrical, building and yards, signs, welfare, printing, textile industry, paper-

box manufactury, fire-protection and tanning, and that at least 50 representative firms were contributors to the display.

A casual glance at the trade journals of the month further shows how the convention idea for the promotion of safety and protection of life and limb is becoming prevalent. This convention under the auspices of the National Council for Industrial Safety, with its strong and varied personnel of leaders in this, its second gathering, will give forth a message of far-reaching importance.

At this time also the American Mine Safety Association, composed of leading coal and metal mine operators, mining engineers, mine safety engineers, is holding a similar session in the city of Pittsburgh. It, too, held its first meeting a year ago. It has for its purpose the reduction of the number of accidents in mines and quarries. On October 20th, in the city of Philadelphia, the American Mining Congress will have an Exposition where manufacturers of mining machinery, rescue and first-aid apparatus and safety appliances will be exhibited. A number of large coal companies which have developed the "safety first" movement at their mines are negotiating for large amounts of space to show the mining men and the public what they are doing in behalf of their men. The United States Bureau of Mines will be represented by one of its safety cars and a crew of helmet men. A call is now being sent out for the First International Exposition of Safety and Sanitation under the auspices of that conserving organization whose whole aim and purpose is concerned with the Respect for Human Life, the American Museum of Safety.

Safety and health in every branch of American industrial life—manufacturing, trade, transportation on land and sea, business and engineering, in all their subdivisions will be represented at this Exposition. Exhibits from Europe and other foreign countries are to be admitted free of duty by special act of Congress. The latter fact is noteworthy because European employers have cut their accident and death rate in two by their persistent campaign of safety. There are 21 museums of safety in Europe, which is a point worthy of consideration in this country.

Another noticeable sign of the times is the fact that up until and including this year, legislation in the matter of safety for the workingman has been passed in twenty states and in seven

others bills are now pending and are very live issues. Magazines, with special Safety supplements, newspapers with strong editorials are also taking up and pushing the safety propaganda with a vim that makes one sit up and take notice.

And yet when it is realized that every year 2,035,000 workmen are killed or injured through accident and upon good authority we learn that fifty per cent of these are preventable, it is surely high time to acquire the proper respect for human life which expresses itself in adopting any means that will best conserve this unpardonable waste. And when we are told by experts that the United States is far behind other civilized nations in this matter, the unescapable obligation rests upon us to put our hearts into the work and, if possible, get to the very sources of human activity and life and inculcate primer safety lessons as early as the human mind is able to grasp the idea. This will do more towards revolutionizing the danger element in life than any single agency.

For universal experience points to education as the effective remedy for the greater number of industrial accidents. Why not, then, carry the story of "Safety First" into the public schools all over the land? A start has been made in some sections of the country in the form of fire drills, first aid instruction and the like. The drag-net of compulsory education, too, has made it imperative to improve hygienic conditions and has led to the creation of special schools for the mentally and physically defective; it has made room for the school nurse, and, in short, is beginning to awaken Boards of Education, and educators in general, to this particular phase of the safety problem. The American Museum of Safety is doing a notable service in its distribution of Educational Leaflets bearing on this question, which should receive the hearty endorsement of every public and private elementary school in the country. Moreover, this organization has launched a plan for securing the safety of smaller pupils on the way to and from school which will go far toward reducing the yearly loss of life and limb among the school children as well as teach fundamental lessons in respecting human life. The plan calls for the organization of a Safety Committee among the older pupils of each school known as the "School Boy Safety Patrol." Their duty is to guard the smaller children from danger at the various street crossings before and after school, and see that the little ones

get safely across. They also look out for the safety of the tiny tots while at play in the streets after school. Each member of the committee wears a special badge of bronze and enamel provided for him by the American Museum of Safety. Such a plan could be inaugurated in any school without much difficulty and would go far toward influencing the youthful life towards forming a good habit which would bear interest throughout his future life.

The broadening of the curriculum of the elementary and secondary school to include those subjects that fit one more directly for real life, known as Industrial Education, adds a responsibility upon the Board of Education and the educators themselves that cannot be escaped. If industrial education prepares for the practical in life, it ought to do it under circumstances that will protect that life against possible injuries and accidents common to industrial life. Hence, here, of all places, the value of safety appliances should be demonstrated by practical precept; care should be exercised in teaching care for others and every safeguard should be installed in the shop, and more particularly in the mind of every single pupil. This is especially true of the more advanced trade, technical and engineering schools.

A concrete example of what has been done along the line of Safety and Accident Prevention in connection with the Carnegie Institute of Technology may be of interest at this occasion. From the opening of school for regular sessions in October, 1905, to June, 1907, a period of one and one-half years, eighty-four accidents, fortunately none of a very serious nature, including accidents to students for the greater part, also workingmen around the buildings and nine faculty members, were reported. They can be enumerated as follows:

21 on the campus, lecture rooms and corridors.
7 in the Machine shop.
16 in the Pattern shop.
5 in the Plumbing shop.
5 in the Electric Wiring shop.
6 in the Foundry.
4 in the Forge shop.
15 in the Chemical Laboratory.
3 in the Bricklaying shop.
2 in the drawing rooms.

Upon the suggestion of Director Hamerschlag, beginning with September of 1907, the various members of the faculty, more particularly the heads of the shops, began to give Safety talks along with their regular courses of lectures and it was noticed that the number of accidents was lessened appreciably, but that in the period, 1907 to 1910, some of the worst accidents in the history of the school happened. This led to the organization of a Committee of Safety Appliances in 1910, which committee has been at work for three years and is composed of practical men—head instructors in the various shops, an instructor in academic subjects who serves in writing reports and drawing up specifications, and an instructor in mechanical drawing, the latter to make the necessary drawings in compliance with the recommendations of the committee, submitted to the proper authorities for approval and for the guidance of the Purchasing Department in securing the necessary appliance. This committee has made sixty-three recommendations along the lines of prevention of accident in the various shops, laboratories and lecture rooms, forty-seven of which have been accepted and sixteen which have either not been completed or held under advisement. In the last two years the number of accidents have cut down to twelve, as follows:

2 in the Pattern shop.
1 in the Foundry.
1 in the Carpenter shop.
2 in the Chemical laboratory.
6 in the Corridors, Lecture Rooms and Campus.

In the last year the total number of accidents was cut down to two.

As a matter of expense approximately $2,500.00 was spent to furnish the various shops and laboratories in accordance with the recommendations of the committee. It might be stated, too, that the school has upon its faculty several practicing physicians who deliver weekly lectures on hygiene and first aid to the first year students. A full first-aid equipment is kept on hand for emergency. Each student, moreover, is given a thorough physical examination at the opening of the year, and upon recommendation of the examining physician is compelled to take such gymnasium work as will best benefit his condition. It is the opinion of the committee on Safety Appliances that more good is accomplished by system-

atic lectures on Safety than can be secured by the mere installation of safety appliances.

In conclusion, in face of the great need for the promulgation of the Safety idea as revealed by the number of fatalities and accidents in the industrial world; and with the knowledge that the United States is considerably behind the Old World for whatever reason we might conjure as an apology, it is, of course, of prime importance that the efforts of such an organization as this be continued along the lines already adopted, only with greater zeal than ever. But it is none the less imperative that this body bend its efforts towards the welfare of the industrial worker of the future and in a special sense evince its respect for human life and careers in the making by co-operating with and encouraging Boards of Education and Educational authorities to teach *Safety First, Last and Always.*

The CHAIRMAN: I will next call upon Mr. William H. Doolittle of the National Metal Trades Association, to say a few words.

Mr. WILLIAM H. DOOLITTLE: We are following the advice and example of the steel companies. One thing has impressed itself upon my mind, and that is, that accidents happen at the unexpected time. We are trying to educate the workers in our various industries to be alert, so the accident will be expected and anticipated, and thereby to avoid having the accident at all. (Applause.)

The CHAIRMAN: I'll call upon Mr. Victor T. Noonan, Secretary General Safety Committee, Rochester Railway & Light Company, to say a few words to us.

Mr. VICTOR T. NOONAN: Mr. Chairman and Gentlemen: I represent a public service corporation that manufactures, if I may use the expression, "juice" and gas, but does not operate trolley-cars. We supply the cars with the current. There are many here that would like to ask me the question: "What is your safety organization, and how is it carried on?"

Our General Safety Committee was organized in 1909. It comprises six members who are heads of departments, representing both gas and electricity. We have, for instance, on that general committee our Chief Mechanical Engineer, Superintendent of Gas Works, Superintendent of Gas Street Distribution, Superintendent

of Electric Department, Claim Adjuster, etc. Under that general committee there are twenty-eight sub-committees. These are Inspection Committees. On these sub-committees we have engineers, department heads and foremen. Committees are appointed once a year, and there is a regular schedule of inspections from one end of the year to the other. There are, for instance, four committees on hydraulics; four committees on electrical equipment. We have committees for elevators, boilers, turbines, over-head construction, line construction on the streets, underground and special construction work.

The problems that we have in safety work in our industry are the prevention of accidents principally on the power cables, and in that particular field there are a great many men killed throughout the country every year. In fact, it is appalling the number of linemen that are killed. In power stations men are electrocuted. Then there are the following classes of accidents: burns, injuries to the eyes, cuts, fractures, and accidents due to explosions and electric shock. Now these inspection committees, as I said before, make rigid inspections from one end of the year to the other, and no member of a committee makes an inspection in his own department. All inspection reports are turned in to the General Safety Committee, and there they are criticized and passed upon, and then turned over to the management for final O. K.

In addition to the inspection committees we have bulletin boards in all our departments. We have fifteen hundred employes in fifteen departments, such as gas shop, offices, construction, gas street department, line department, underground department, transportation, gas works, concrete pole, subway, arc lamp and meter department. In all these departments, at some convenient place where the men pass to and from each day, we have placed a bulletin board. On those bulletin boards we put each week an accident report. Formerly the men never knew who was injured.

Now some safety men do not believe in accident reports on the bulletin boards, but I do. First of all, it lets the men know who are injured. We place on the board the name of the man who has met with an accident, and as far as possible the cause; also the foreman's name, and we put the foreman's name on because we hold him responsible for the safety of his men. If the man is injured through his own carelessness, the foremen usually get after

the men in their own way. On those bulletin boards, we also place suggestions and photographs. Whenever possible and convenient we take a photograph of the conditions that surrounded a peculiar accident. We try to show the right and wrong way of working. We also have lantern slides, and frequently show them to the men; orders, regulations, and other suggestions, also printed matter regarding what other companies are doing, and what co-operation other companies are receiving from their employes, are put on the bulletin board. We also put on that board information for particular departments. We try to draw attention to the department that is co-operating. We also put on the board a chart showing the decrease or increase in accidents in particular departments, so we try to keep all departments more or less working one against the other. We have had first-aid talks by a surgeon, and practical demonstrations of first-aid treatment. We have had safety rallies, and I go through all departments myself, first of all notifying the foremen to call their meetings at any time that is desired, and we hold those meetings during working hours. If the men are working, we call them in, say from four to five o'clock, and we have a heart-to-heart talk. Those talks are not always about safety. We try to make the men better, and make them take more interest in their work, make them more enthusiastic, more courageous. When you get men enthusiastic about their work, you get them enthusiastic about your safety work. We try to reach out and catch the other fellow by the hand, and make him feel we have the same heart he has. We try to make our men feel that the management is interested in them, and that the corporation that employs them has a soul. We try to inject those principles into all the men, and when we get them feeling that way we find they begin to co-operate, and I am glad to say we have had splendid co-operation from the employes of our company.

We also have meetings of the foremen and the sub-committees. We keep the foremen and the sub-committees and the employes informed of what we are doing; every little plan we get up we keep them informed of.

Another thing, and probably many of you have had this experience. In the Claim Department, which is operated separately from our Safety Department, the accident reports give a description of a certain accident, but those accident reports do not give

the *causes,* and we have a rule in our Safety Department that any accident that looks suspicious we shall investigate on the ground where it occurred. In this way we get pretty close to the cause of the accident. I am glad to say through this rule we have absolutely eliminated certain accidents.

We have held prize contests for suggestions. We put these contests on the bulletin boards, and we have received some very practical suggestions. The question has been asked: "How to get co-operation, how to win the men?" I would say in reply, if there is any safety man here that has to work with employes, he must mix with them. He must know them, he must love them. And in carrying out his safety work he must inject into it the same kind of enthusiasm, the same zeal that a fireman has who goes into a burning building to save a life—the same enthusiasm that the life-saver has who goes out in a boat to save the people who are drowning or the same enthusiasm you would have if walking along a river you saw a child sinking. Everything you do, must represent a human life, and every effort that is carried on in your safety work, everything that you do, although you may not know it, may be saving some life at some time or in some way that you will never know. The safety men who go away from this Convention must go away fired with zeal and enthusiasm for their work, because everything done here has back of it a human life, and we safety men, through this Convention, will be the means of saving a great many lives. (Applause.)

The CHAIRMAN: It is now one o'clock. We will adjourn till two o'clock. The meeting will stand adjourned.

Whereupon an adjournment was taken until two o'clock of the same day, September 23rd, 1913.

FIRE PREVENTION SESSION,

September 23d, 1913, 2 P. M.

Mr. C. W. PRICE: The subject for this afternoon's session is a very important one, that of fire prevention, and we are fortunate enough to have as the Chairman for this session Mr. Charles E. Meek, who is a member of the National Board of Fire Underwriters, and is the Vice-President of the Fourth National Bank of New York. I take great pleasure in introducing Mr. Meek, who will preside over this session.

Chairman CHARLES E. MEEK: Gentlemen, I hope you will excuse the tardy opening which we are having this afternoon. There has been some difficulty in trying to get into connection with some of those whose names are on the program, which has delayed us somewhat, and I must apologize to you for not being able to say more regarding the work of your own organization.

It is very gratifying indeed to those who have been engaged in the work of spreading the doctrine of fire prevention throughout this country to at last come to feel that other organizations are becoming interested and are going to contribute in a very valuable way to the work of the National Fire Protection Association, which was the first organization in the country to begin a campaign against the fire waste which we have been experiencing for so many years, a waste which is important in more than one direction.

The National Fire Protection Association was organized in New England perhaps twelve or fifteen years ago. Necessarily its membership has been comparatively small. It has had very little opportunity to spread out, although its work has been persistently and faithfully carried on. Perhaps one reason for its small growth was the general opinion, an erroneous one I might say, that it was an insurance organization. It is true that a great many of those interested in fire insurance have been members, and have contributed in a money way towards the campaign of this organization. Now, we find other associations taking up the same line of work, and as time goes on there is no doubt but that we will have a general movement extending throughout the entire country towards better conditions in factories and other buildings, not only for the purpose of

preventing property loss, but also in guarding against loss of life. The National Association of Credit Men, which is perhaps the largest commercial organization in the country, was the first large body to take an interest in this subject. The members of that association were brought more closely in touch with it from the fact that the members were constantly called upon to analyze the statements of the debtor class, and after a while began to realize the importance of proper fire insurance, and from fire insurance they went to fire protection, so the Association now has a committee working in that particular field extending its work over the entire country, and it is a very valuable aid to the Fire Prevention Association.

We have had during the past few years a great deal of improvement in factory buildings, and in other buildings where large numbers of people gathered; but the work of protection against loss of life in fire seems to have dragged by the wayside from time to time. It required some great catastrophe like the one that recently happened in Binghamton to add new life, and to start the work fresh again. It is one of those things which seems to be accepted by the American public that a great accident must occur to stir up great protests and promises to do better. After a little while it sort of wears out. We go about our way just the same as we were going, but now I think that the people throughout a great part of the country have come to realize it is necessary for us to take more serious thought, and to keep this work moving. The different states are recognizing it through their legal departments, and we can hope, I think, for a great deal of good work in the future.

Now, personally, I believe that every factory building; that every place of amusement; that every hotel, and every other place where people gather in large numbers, should be as thoroughly protected against fire as is possible.

I am a thorough believer in the sprinkler system, which I have seen demonstrated so many times very efficiently, and as we travel throughout the country, we occasionally run across a hotel equipped with the sprinkler system. I think when we have these sprinklers in general use, in addition to the improved methods in building, that we are going to be very much safer. Although a building may be absolutely fire-proof, the contents are not, and we have seen

so many cases of fire-proof buildings loaded up with inflammable material, where a fire broke out with great loss of life and great loss of property, and I am of the opinion that the most scientific method today of overcoming it is through the sprinkler system. I think I have said enough on the subject. It is rather strange for a man engaged in the banking business to be talking on this particular topic. I feel rather lonesome because all of you gentlemen are engaged in different lines, but I have become interested in it, and am contributng my small part towards the campaign which I referred to before.

We are fortunate in having with us today Mr. H. F. J. Porter, consulting engineer, New York. Mr. Porter has given considerable attention to the question of stairways and exits in factories. His work in that particular direction was responsible for the appointment of the New York State Factory Investigating Commission to bring about safer conditions in factories throughout the state, and served as its advisor on fire matters. I know the gentleman has something interesting to say to you, and I now take pleasure in presenting him.

Mr. H. F. J. PORTER: Mr. Chairman, Ladies and Gentlemen: As I am the last one on the program, in the absence of the others, and am speaking first, and as I presume that those who are set down ahead of me will be coming in before long, I shall not want to pre-empt their places, and so I shall begin and give you my theme without any preliminary remarks.

I might say that my subject is rather a restricted one, namely, the inadequacy of the exit facilities in crowded buildings, but it is what I have given most of my attention to, and have been responsible for certain legislation which becomes operative on the first of next month, and although it is at present crude and imperfect, I have no doubt that it will be improved in the future, and that what is there embodied will become general throughout the country.

About ten years ago I was in charge of a factory in Pittsburgh. This factory was about 160 feet long, and about 120 feet deep. There was only one stairway in it, and there were about 200 people on each floor, 100 on either side of the stairway. Before I went there, there had been a panic in it, owing to a false alarm

of fire, and these 200 people on each floor tried to crowd into the single stairway from either side, which resulted in a jam at each landing, and a number of people were hurt. The people did not get out of the building.

When I took charge, I realized the danger of a similar occurrence at any time in the future, and I endeavored to establish a fire drill. I failed absolutely. I could not develop a fire drill, partly, as I suppose, because I had never had any experience with such a thing. So I sent for the Chief of the Fire Department, and, to my surprise, when he came and looked the place over, he told me he could not develop a fire drill either. He said, "I can develop a fire-fighting corps that will put out fires, but as to getting people out of the building, I am not familiar with that sort of work." I then took up the matter with the Department of Education, asking them to let me have one of their drillmasters. This they did, sending me their chief drillmaster, but he in turn, after looking over the building, said he could not develop a fire drill. He said, "This is a different type of building from the school buildings which I am accustomed to, and the occupants of the building are different from those that I have drilled. Our people are children who are subservient to discipline, and your people are not." He was totally unable to suggest anything for me to do. I then wrote around to the most representative factories throughout the country, and found that in no instance had anyone developed a fire drill which took the employes out of the buildings. I then was thrown back on my own resources again, and after awhile I succeeded in developing a fire drill, and as far as I know, that was the first one established in a factory in this country.

I then found that one of the reasons why I could not readily institute a fire drill was because I could not pour a large number of people from several floors into one stairway at the same time. The streams of people collided on the landings, preventing each other from going downstairs. I found that a stream from any floor, if no other stream interferred with it, would go down all right. I then realized that a stairway is simply a tube of very limited capacity. If the flow into it is limited to its capacity it would operate, but if it is exceeded it would choke up and the flow would stop. So I had to develop a separate stairway for each floor. Then I had a number of stairways open only at the top

and at the bottom, and I could pour people indefinitely into each of them at the top and they would come out at the bottom, and so I succeeded, eventually, in getting a fire drill, and it emptied the building in less than three minutes.

Now some of the stairways which I developed were fire escapes on the outside of the building and it may interest you to have me run through the experience I had in getting a satisfactory fire escape. In the first place, when I tried the fire escape there was on the building, I found that there ought to have been a drop ladder at the base of it, but someone had taken it away, after I got one and put it where it ought to go. We found that it weighed somewhere in the neighborhood of a hundred pounds, and it might be a girl who would reach it first and she could not lift it. In order to insure the ladder being in position always, I supplied a pulley with a chain and counter-weight. Then the ladder was always in place, and could be lowered even by a child. Again people would rush down the steps until they came to the ladder and then each one had to stop, turn around backwards, and go down slowly. This checked the flow of the stream and so our next step was to increase the capacity of the ladder. This we did by substituting for it a hinged stairs with a counter-weight, and persons running down the fire escape could then continue down the stairs without slowing up, the latter gradually descending until it rested on the sidewalk.

Now, I do not suppose many of you have ever calculated the capacity of a fire escape. Suppose we have a straight ladder fire escape down the front of a building, and suppose there should occur something like a fire which would require all the people in the building to get out and try to use that fire escape at one time. You will find that it is simply a single-track railway. In other words, if two people per floor step onto it they would fill it, and if any more would try to get onto it, they would prevent those two per floor from going down, and, as a consequence, no one would go down at all.

If you have an inclined ladder, with a steep incline, requiring people to turn around and go down backwards, it will have a capacity of about four per floor. If it has a lesser incline so that people can go down forwards on it, its capacity will be increased to about ten per floor, and if you have a modern stairway of

double width and a mezzanine floor between balconies, you will increase the capacity up to about twenty-four per floor. But you must always remember that the capacity of the connection with the ground must be equal to that above, and again if you try to crowd more people onto any balcony than it can accommodate, then a jam will occur and no one will go down at all, so that in a crowded building, a fire escape is useless.

Suppose we have a factory building with two exits, one at each side of it. Suppose a fire occurs in this building, cutting off one of these exits. The people then would flow out through the exit farthest from the fire onto the ground and escape to safety. It would take an appreciable time for them to go out, possibly a minute, depending on the number of people. Now, suppose you put another factory on top of this one, and a fire should occur in the same place as before, the people on the ground floor would start to move out on the ground as before. The people on the floor above would have to descend a set of stairs to get to the ground and in doing so they would collide with those who would be making their escape from the ground floor and prevent their going out while the latter would prevent those who are coming down from going out also. These are the conditions which we have developed in our city buildings, where we have piled as many as thirty factories one on top of another, and if there is a fire which can get into the stairway the people will be burned up in it, while those who have not gotten into the stairway have two alternatives, one to jump to death from the windows, and the other to burn up. To prevent the latter casualty, we have imported from Philadelphia the latest in fire escapes, a smoke-proof tower. The only advantage the smoke-proof tower has over an ordinary stairway is that no smoke or fire gets into it, for it has no greater capacity. There is one disadvantage, however, a smoke-proof tower has, and that is that it has to be located so that it is not convenient of access from the building, in fact people usually have to go out of doors to reach it. This fact results in the smoke-proof tower stairways never being used. No one ever thinks of using a smoke-proof tower as a regular stairway. The result is that it becomes forgotten, neglected and is always full of rubbish and dust. The doors get rusted and out of shape, and if it ever would be needed in a case of emergency, nobody would know anything about it, and if a

crowd tried to get into it they would find it did not have any more capacity than an ordinary stairway.

Now take a typical loft building in this city, an eight- or ten-story building, 100 feet square. A fire occurs. The fire leaps up from one floor to another, by the stairways and elevator shafts on the inside, and by the windows on the outside. The people crowd into the stairway and find that they cannot go down that way. The fire gets into the elevator shaft, and warps the runways so that they cannot go down that way. They get out on the fire escape and get burned up by the flames from the windows or have to jump down, and so that type of building as it stands now is an absolutely unemptiable building in case of a fire emergency and therefore a fire trap. Now, I have suggested that we use the party-wall type of fire escape, where the people simply pass through doorways in it, close the doors after them, and do not go downstairs at all. In a building of this kind we can put such a fire wall through its center, from the cellar right up to the roof, with doorways closed by automatically closing fire-proof doors in it, and then in case of a fire on one side of it, if there were no people on the floor, these automatic doors would shut from the heat. On any floor where there are people, the latter would simply pass through the doorways, and then would shut the doors, and they would then be in practically a separate building which would be in a normal condition and there the people could stay, if they wanted to, without going downstairs, or they could go down by elevators or by stairways, which would be in perfectly normal conditon. Take a fifty-foot building, and you could put a fire wall across it of that type much more cheaply than you could put on an outside fire escape, and the former would be much more effective than the latter.

This fire-wall principle is adaptable not only to factories but to department stores and any buildings where the public gathers in large numbers. I have suggested the adaptability of the fire-wall to a theater. We have gotten our theaters now (excepting the moving picture theaters) so that they are pretty nearly fire-proof, but you will find that people, in such places in case something unusual happens, become frightened, and all try to rush for the exits crowding into the narrow aisles by which they entered, resulting in a panic. I suggest a design of theater without longitudinal aisles but with a greater width between the rows of seats so that

there is practically a transverse aisle in front of each row; these aisles lead through a fire-wall to hallways on each side of the theater, from which the people can go directly to the street without colliding with any stream of people coming down stairs; the galleries having separate exits entirely.

Hospitals are buildings in which this fire wall is especially adaptable on account of the helpless condition of their occupants. The latter being generally bed-ridden cannot get up and go down stairs, but they can be wheeled through the doors of the fire wall on their beds and thus placed beyond the reach of the fire

Now, take school buildings in most of which you will find a fire wall already running from cellar to roof, separating the boys from the girls, and all that is necessary to make use of it is simply to make a doorway through the wall on each floor and put a fire door there, and in case of fire on one side let the children go through and either stay on the other side, or go down at their leisure, if they want to. At the present time they have to develop a fire drill, and all the children have to be taken down once a week or once a month, depending on the number of children and the character of the building. We are paying school teachers to educate children and we do not want the latter to spend their time going up and down these stairways uselessly because they never could go out that way in case of a real fire. We should remember that many of these children are poor and ill-fed, some of whom have heart trouble, others are tubercular, or anemic, or may be lame, and for many other reasons are physically unable to be put through any such a proceeding as that, and besides be taken out into the streets without any hat or clothing in any kind of weather. We do not wonder that parents and doctors object to that kind of treatment to which children have to be subjected, when this other method of making these buildings safe would not require any such arrangement.

Now you can do the same sort of thing in an apartment hotel or in a private house. Where there is a front stairway and a back stairway, there can almost always be developed a fire wall, and if the fire occurs people can carry through it their valuable rugs and pictures and save a lot of their things, and they will not be put in danger of their lives as they would be if they had to go down stairs through the fire to escape. And so I could continue to

demonstrate the almost universal applicability of the fire wall as a fire escape. I hope I have been able to make plain to you that the stairway has such a limited capacity that it cannot be used by many people at a time and I offer as a substitute the fire wall which is much more convenient for use and far more serviceable.

Chairman MEEK: I think we all agree that Mr. Porter has given us a very splendid illustration of the work which is going on in this city, and that a great deal of good will come from it. The next speaker is Colonel Bryant, Labor Commissioner of the State of New Jersey, who will take up the subject of "Fire Drills and Fire Protection." Mr. Bryant has recently taken a great interest in fire prevention and has been instrumental in gathering together many factory superintendents in his state for the purpose of talking and consulting with them as to the best methods to be adopted, especially for factory practices. He has handled the subject in an intelligent manner, and we will await with a great deal of interest the further development of what he is carrying on. I take pleasure in introducing to you Mr. Lewis T. Bryant, Labor Commissoner of the State of New Jersey. (Applause.)

Mr. LEWIS T. BRYANT: Mr. Chairman and Gentlemen, I am going to follow the very good example of Mr. Porter and not consume any time in preliminaries. I am very glad to be here, and I am very glad to give you somewhat of an illustrated talk on the method in which we are endeavoring to handle the matter of fire drills and fire protection in the State of New Jersey. So far as new factory buildings are concerned, New Jersey has passed a law which I consider an excellent one, which provides that before any new factory building can be erected, or any alterations be made to an old one, within certain limitations, the plans must be approved by the Commissioner of Labor. Now this gives the Commissioner of Labor the opportunity of providing adequate means of egress, of course, as well as proper ventilation and sanitation and arrangements for general factory hygiene. It also gives the Commissioner of Labor the opportunity of pointing out to the respective owners the changes which the tentative plans indicate, and of course it is a self-evident fact that these changes, that these additions to the building, can be erected at very much less cost when the building

in under construction than after it has been erected, and then these changes are made. It is surprising to me, in my experience of a great many years as Commissioner of Labor, to find exit doors opening inward in buildings that were really of high class construction. One in particular of which I made a personal inspection, I found had every one of the exit doors opening inward. Of course our law requires that all doors open outward. I called to the Superintendent's attention that fact, and he said, "We only constructed this building two years ago, and we engaged one of the best architects in the State and one of the best engineers; why didn't they have these doors open out?" I said, "I don't know. It seems a strange thing that any good architect or engineer in this day of enlightenment would have a door open inwardly." That is one of the experiences that impressed this thing upon my mind, and caused me to lend my influence towards having these plans approved to prevent the owner from expending his money needlessly, and then having to make changes afterwards. The question of fire prevention comes under two general heads, the first from the standpoint of protection of the property, and the other from the standpoint of the protection of life, but I claim that the two are so intimately connected that where an owner provides a building that will protect the property that it can easily be constructed so as to also protect the lives. Now, the next question, fire protection, seems to resolve itself into three general heads: First, preventing the fire, arranging conditions in the building under which a fire will not occur; secondly, providing structural conditions in the building which will retain the fire in certain limited spaces in case it does occur, and third, providing proper and adequate means for extinguishing the fire.

Now, taking the matter up first on the subject of provisions for emptying the building—the question of egress which Mr. Porter has covered so thoroughly. Had I known that he was going to deliver a talk on that subject, I do not know whether I would have selected so many views on the question of egress, as I have. However, I do not altogether agree with you, Mr. Porter, in some of the things you have said, particularly on the Philadelphia type of fire tower, the smoke-proof tower. We have buildings in the State of New Jersey where there is absolutely no other way of leaving the building excepting the smoke-proof tower. I will

show you one a little later. It seems to me that the smoke-proof tower with outside entrances, where there is no way of the fire's getting into the tower, or there is no way of smoke's getting into the tower, and of course the assumption is that the tower is kept in proper condition and used, and I think that is equally applicable to any method of egress, in order to have it retain anywhere near its highest percentage of efficiency, must be frequently used, and the same with fire escapes. We require that the fire drill shall be practiced down the fire escapes, and we take the absolute stand, that any fire escape that is not constructed in a manner that will permit women to go down that fire escape during the fire drill, must come off the building and be substituted by some other means of egress, because certainly if a female cannot go down the fire escape in the time of ordinary factory discipline, she will not be able to go down it in time of panic.

Just run the views. First, I will talk, as I go along, on the question of egresses, and then on the question of fire escapes. Where it is an old building with a sufficient number of egresses to conduct a fire drill, we have found it very applicable. The first views I want to show you are the views of the Binghamton fire which occurred a few days ago in Binghamton, in which you will see the building during the course of the fire, and I wish to call your attention to the volume of smoke which is coming out of the building. The next view shows the same end of the building, but before the fire has developed to the extent where this volume of smoke is coming out, and this shows the old fire escape in the rear.

The point I want particularly to illustrate in this photograph is the practical worthlessness of the old type of fire escape in case an actual fire comes; the smoke and fire will come out on the fire escape, and prevent the operators on the floors above from using the fire escape in descending.

This shows the remaining balcony of the fire escape before the great High Street catastrophe in Newark. This was taken after the fire was over, and I want to call your attention to the lower balcony. At that time the law provided that unless a balcony was more than ten feet from the ground an ordinary drop ladder could be used. I do not want to go into the question of drop ladders except to say they are absolutely worthless. I won't say absolutely worth-

less, either, but they are not worth much. The girls tried to hook on the drop ladder and they dropped with the drop ladder and dozens of women were ruined on this. Finally a colored man came there and hooked it up for them and the girls came down the drop ladder, but at that time the whole fire escape was entirely packed with people. It demonstrated one thing, however: make the fire escape strong enough to stand the load when it is packed. Now this is a building—Mr. Porter showed this view and I have it also in the next building, showing the picture of the Ash Building fire escape, but I want to call your attention to another picture taken across the way from the Ash Building fire escape. You notice the holes in the glass. Those holes are not made by the fire; those are made by the firemen who took the hose up the building adjoining and knocked holes in the glass with the hose, and it was not the fire which made these holes. But that method of preventing the fire from coming out of the building onto the fire escape is being applied now in fire escape construction in the State of New Jersey. All windows which open upon or are directly adjacent to fire escapes must be provided with metal frames and glazed with wired glass, which has been adopted by the fire underwriters as a method of fire retarding. The view which I exhibited a moment ago and this view here shows the type of construction, which is required for wire glass windows. The lower portion of the window is permanent. The upper hangs on a center swivel. As part of our specified fire drill, which I will show you in a moving picture a little later, when the alarm is sounded, all the windows opening on the fire escape must be closed by some specified person, but assuming the human element is contained, and this man does not close the fire windows, then, in case of a fire a fusible zinc link will melt and the windows will close automatically.

We found when we specified simply "Metal work and wired glass," the tinsmith, and alleged mechanic, came and attached tin on the windows, which possibly did some good, but it made very low standards. So we prepared standards and blue prints, and issued absolute specifications showing exactly the type of fire window which must be used, specifying, to the minutest detail, the size of the metal covering, how it should be lapped, how the window should be hung, and the whole thing, and the plans of every building that goes up in the State of New Jersey must show the type, and

they must be approved by the Commissioner of Labor before they will be permitted to be constructed. The view previous to that was the fire door. Another point which I will mention in passing, is that we require that all means of egress to the fire escape must be by means of doors cut down as near as possible to the level of the floor. The necessity for this was demonstrated in the High Street fire. A great deal of confusion was occasioned; there were so many crowded inside that the door broke, and it helped to create a panic, and occasioned, perhaps, loss of life. Now, we require these doors to be like this, and there is no time wasted there fooling with a knob, and the hardware on all the windows and doors is specified. This door I just showed you was the view Mr. Porter showed of the cantilever attachment. The two views which he showed were of the first two cantilevers we ever built in the state. Those two were in an experimental state, and they have been very much improved upon since then. They are on exactly the same principle, except that we have increased the size of the material and the general strength of the structure. This shows the fire escape which is built as near as possible in accordance with the law, and illustrates two types of the straight run fire escape, which we use very effectively, and which we used almost invariably in the beginning of our fire escape work. It shows the doors, but the windows had not been provided when this was taken.

Now this shows the type of fire escape where you cannot use the straight run on a narrow front building. This shows the cantilever construction here. This shows a zigzag type of fire escape which was used under some similar circumstances, where you would want to protect particular portions of the building, and have your egresses made. That seemed to be necessary. This shows the entrance by means of fireproof doors. Now, we had one fire, and a bad fire, where these doors were placed, and the building, on that particular floor, burned out, the windows and everything else burned out, but those fireproof doors were standing. We have photographs of that showing they stood the ravages of the fire. There is another great advantage in the type of straight run fire escape, particularly with the cantilever arrangement. The one which Mr. Porter showed I wish to call to your attention. I wish to call your attention to the fact that there was an opening in the adjoining property. It is really the first one that was ever

put up in the state, and in this particular case there was a fire on the third floor of the building. The firemen came there and pulled down this cantilever arrangement took the line of hose up to the third floor of the building, and fought the fire by means of this fire escape, and it was in one of the most congested parts of the city, and, on their own statement and admission, the fact that they got there with such rapidity probably saved a three-alarm fire in the city of Newark.

This shows a cantilever attachment on the old type of fire escape. We have increased the protection in some cases, and put the cantilever attachment on the old escapes. This is worked out properly from the engineering standpoint. We have an angle provided here, and an angle provided here of proper weight and bearing capacity, and to stop any side motion, we throw in a brace from the building here to this. Those steps are just as permanent as stairways in a building. As we have progressed in the matter of fire escapes, we find, particularly when we take into consideration the cost of the fireproof doors and windows, that you can build this type of built-up fire escape in most cases more economically. Here it only requires fireproofing of the door leading to the escape, and in some cases the window. In a great many of them you would simply take one window and turn it into a door, and then throw the escape out from the building—of course you have in some cases to throw the escape across the building, and it takes two windows. We are using a five foot wire mesh enclosure in this case, so any woman, the most timid woman, can get on this fire escape, the fifth or sixth story, or higher, and go down without fear, particularly as the runs are short. It runs out to a platform and then back to the building again, which makes an excellent means of escape. If a fire occurs here with a fireproof door, the smoke and flame cannot protrude. We had a fire a few days ago in a building which is occupied by thirty different tenants. We had four of this type erected. We had electrical systems of alarm, and there was a fire. That is a pretty good test of our system. The fire alarm was sounded. The building was emptied of the thirty various firms, and without any confusion whatever, and in a remarkably short space of time; the people coming down on each one of these four fire escapes or towers, walked directly past the place where the fire was in progress, and they did not know it, because the fire-

proof doors and windows were closed, and emitting no smoke or flame from the building. Now, this is a little description of the Philadelphia type of tower, and, it seems to me—I do not know how you can get a better stairway. You come from the building onto the platform, and from the platform back to the stairway. Now, if the stairway is constructed with proper width and proper risings, with no winding stairs, and this door is a wired glass door, and particularly if it is on a corner, and we have a fire window with wired glass—it seems to me to make as complete a system of fire stairway as I know of.

This is a view of a factory in the city of Camden. It has an outside tower erected here. That is an outside entrance. You come from the building to this platform, and from here to the tower and from there to the ground. In my judgment, a fire tower or any other means of egress from the building, to have anywhere near its highest efficiency must open into the outer air, and not back into the building, where, of course, a fire on the first floor would create smoke and cause a panic. I do not see how you can sit down and consider questions of egresses and questions of fire prevention measures simply from a standpoint of actual conditions and what you expect people to do in case of a fire. You have got to take into consideration the fire hazard. You have to take into consideration the accompanying panic and alarm. We had a case in Newark where one or two girls jumped out of the second story of a building where there wasn't any fire at all. The fire was in an adjoining building. We had another case where a girl went from the second floor to the third, and then jumped out of the window. She was not satisfied to jump from the second story. It is pretty difficult to anticipate accidents of this kind, but, under our law, fire drills must be held in every building more than two stories in height, and these fire drills must be practiced at least once in every calendar month. If it is put on that basis, you will reach, not five per cent where there are ideal conditions, but you will reach almost one hundred per cent of the factory buildings coming under this classification, and it will demonstrate, if nothing else, that you have insufficient or inefficient means of egress. We had a case in point a few days ago in a large corset factory. An inspector went in there and called for a fire drill. They had not had any fire drill. They had completed a system of

electrical alarms. The fire drill was organized on all the floors. He said, "You have not sufficient fire protection. You will need a fire tower back of the building here in order to get the room emptied properly."

Oh, no, they thought they had plenty. He called a fire drill. It was self-evident. The president of the concern stood there and saw the method of leaving the building, and he saw the necessity of having additional means of egress, and, as a matter of fact, the construction of this fire tower is now well under way. At least, they have signed the contract. Now, in this particular building there is no other means of entering. There are two fire towers of the smoke proof type and that is the only method they have, and I believe that the fire escapes, after they have been constructed, should not be put on the building as an ornament, but they should be used in fire drills, and occasionally the workmen should be dismissed by them. They should be sent out of this building by way of the fire-escape. As Mr. Porter so well said and demonstrated, it is a matter of human nature, the people want to get out of a room, or out of a particular place by the method in which they reach the place. This also shows another construction of the Philadelphia Fire Tower. You come out into the vestibule; come from the vestibule back into the building, and from the vestibule out at this end. Now, considering the High Street fire, as a question of analysis, in explanation of why these girls were burned up it was demonstrated that they were working on the top floor of this building for some minutes before they were really notified of the fact that there was a fire, and after someone had gone up to this floor and finally beaten down the door, which was locked, at least raised sufficient noise so they came there to the door, and had told them there was a fire downstairs, apparently there was no particular effort to get the girls out immediately, and one thing was demonstrated absolutely, as the prosecutor said; it seemed to be largely a case of girls going back after their cloaks and hats. The forewoman, the woman in charge of that building, was lost from sight for some time. A girl came down and said, just before she left and came down the fire escape, that that woman was standing alongside of her. She was gone several minutes, and she said positively when she went down, she had on simply a shirtwaist and black skirt, and when she came to a window, the

third or fourth removed from the fire escape, she had on a hat and coat, showing conclusively she had gone back after them. Now, one of the best conducted factories I know in the State of New Jersey, when a girl is hired, she is taken in before the Superintendent, and told in the case of a fire alarm "It is your duty to leave the building. If your clothes burn up in the cloak room, we will pay for them," and while, of course, I do not mean to say for a moment that is universal and practiced in the state, still it is a very good object lesson to the other manufacturers, because the probability of loss in that way is very remote, but it is very necessary for them to be drilled as a part of their drill, to leave the building immediately, but, first of all, you must get some method of advising that the fire is there.

This shows a diagram of a system of alarms which we use in our state, and the law requires all buildings more than two stories in height shall have some system of electrical alarms which will send the alarm simultaneously throughout the entire building. We have spent a lot of effort on this matter. We have had consultations galore with as good authorities as we could find in the state, and after a great deal of experience on our part, and after the installation of many alarms, we have finally developed the system which is outlined in this plan. You gentlemen, being engineers, will understand the difference between having a system which is under constant test, a closed circuit system, and a system which is without any test, or an open circuit system, and it has been the policy of all authorities on the question of fire alarms, to disapprove of every plan unless it was under a continuous test, or a closed circuit system—so we commenced to have a closed circuit system, and you can see what it means. If you put in a system, it means that system is working day and night, Sundays and holidays, constantly eating up its battery supply, which costs money. We have endeavored to develop a system which will provide a maximum amount of protection with a minimum amount of expense, and we have hit upon the plan of having the sounding alarm box under constant test from a central battery, and having a bell supply circuit, which may have bells, or in some cases horns, although we prefer bells. It may be necessary to have a different character of sound where the bell lends itself too much to the natural sound of machinery to have that under the open circuit, but to have that

circuit wired in multiple or multiple series, and have each one of these series running up through the building on alternate floors. For example, if you had two alarms in this building, one of the series running through this end of the room would have an alarm bell on, and one of the series through that end of the room would have an alarm bell on, so in case of one accident and the cutting of one of these wires, you would have fifty per cent efficiency left, and one of these bells would be left, and the same principle would be practicable throughout your electrical system. We have worked this out. The installation costs forty dollars. The yearly cost of maintenance for a ten-station system is about twenty dollars. That figures about two dollars a station for that system. As I explained very roughly, you have a system which, fifty per cent of it, is under constant test, the alarm circuit and the balance of it. It is very difficult to anticipate or imagine a condition unless, of course, we cut out the wire supplying the entire circuit, where you would not have a large percentage of the remaining fifty per cent still in use. Now, we try to offset that by requiring that all the systems shall be wired with rigid iron conduit.

Now, anyone will not get very far until he gets an absolutely ironclad set of specifications, so a man will put in absolutely what is specified, because if not, any bellhanger will go there and wire it up with as little expense as he can. This shows a factory with girls sitting at their tasks. This shows the girls after the first alarm. They are instructed to stand by their places and wait until the word from their aisle foreman is given, or the captain of their floor, and they face their usual means of egress. This shows the girls after they have left the building, and are on the outside of the building. This shows some of the girls coming down the fire escape. It is a question of skirt guards, which has helped us very much in our work in using fire escapes. Many women object to coming down a fire escape, particularly where it is in an exposed position above the street, and some factories have, at their own expense, provided elastic skirt guards, in case of fire, and they slip them down below the knee. That has the dual effect of protecting the modesty of the women and making the escape more safe and rapid. We found a woman could come down with a skirt guard, and using both hands, in about one-third of the time she could come down without the skirt guard, when she had to use one hand to hold her dress.

Now, in the matter of fire protection of property and life, I said I tried to work out a scheme where the two would be combined, inasmuch as the manufacturer has gone to the expense of putting an alarm system through the building. It therefore indicates the particular part of the building where the fire is. For this purpose we never use a single numeral. For instance, with a five-story factory, say it is on the second floor. Probably we would sound "22." It would be sounded this way, meaning "22—second floor." That alarm, coming throughout the building, of course notifies all the operatives in the building there is a fire on the second floor. This notice must be accompanied by a fire drill for exit purposes. In addition to the above, we have a system of fire brigades, and, when there is a fire on the second floor, the brigades go there for the purpose of putting it out.

I think insurance authorities agree with me in the statement that in the natural course of events, factory owners in taking up the factory building equipment, put up a line of hose, and perhaps permit it to stay there, until it has rotted out so it is like a sieve, or put a chemical extinguisher on the wall, and leave it there until the real efficiency has vanished on account of the loss of the chemical properties. Even though it may be a simple little system, we will say, for small factories, where there are perhaps only half a dozen chemical fire extinguishers, we believe it to be somebody's job to take charge of them on the principle that what is everybody's job is nobody's job. Now, our factory fire chief, which our Chairman spoke of in his introduction, is assigned the duty of seeing that the chemical fire extinguishers are charged. There is a card provided free by the State of New Jersey to be placed under each extinguisher, stating when this chemical fire extinguisher was charged. There is also a card of the same character placed under the hose, stating when the hose was last tested, so the inspector going through the factory can learn when the extinguishers were charged, and when the hose was tested. And now, in connection with the question of fire brigades, factory safety brigades, there is a problem that must be appreciated, and that is the managers may depend too much on their own local fire protection until after the fire has gotten beyond their control, and then call the City Fire Department, and perhaps call it too late. Now, we try to have, and of course we are very glad to see the combination installed, and in a great many

factories, a large number of them in congested sections, such as Newark, they have installed a combination box, so when a person comes to the box and pulls the alarm in, that alarm is sent throughout the entire factory immediately, notifying the fire brigade there is a fire in some part of the building, and simultantously rings into the central Fire Department, notifying the Fire Department that there is a fire in that particular building. Think of the time that is saved by this means. Suppose a fire occurs in the fifth story of the building. A man has to run down possibly five flights of stairs out onto the street, or into the office, and take out the telephone book, and search through it to find the number of the Fire Department, and if he had forethought to do it, or run out to hunt up a box somewhere, and there are minutes and minutes lost before the Fire Department receives this alarm. We try to obviate that. We are glad to have the combination box put in. The next thing is to have a box in the office, so when the alarm goes in, it may be known. If you do not want to go to the expense of the double box from the fifth floor, at least have the alarm going all over the factory. A card is placed under the box with the name of the man whose duty it is to go there and pull the alarm, so the Fire Department has the notification. We have this telephone card placed over the 'phone in the various factories giving the telephone number of the nearest Fire Department, or the central Fire Station, whichever seems best, and it is the duty of some particular person to go there and see to it. It goes in simultaneously, or is sent in from a box by some specified person, or else is telephoned in, as I have just described. This is a card which requires no explanation. These cards are an excellent thing. They are furnished free of charge by the State and sent out in large quantities. It helps to have that done. I have talked to factory chiefs who have told me with the very greatest pride, they have said "We have stopped smoking in our factory. The management has told me to have any man discharged whom I find smoking." And very proud of the fact they have absolutely stopped smoking among the operatives, through the instrumentality of their authority, and these men who take the matter seriously and enter into the spirit of fire preventive measures are glad to lend their assistance in this, and this is the only way you can handle this thing properly, to the best advantage, and that is to try to get pride of co-operation between the men

themselves and the factories, and I try to appeal to them on this basis: In case of a fire in the factory, in the first place, their employer would probably lose some of his forms and some of his business machinery, and that possibly he would not be able to start up again, and they would be permanently out of a position; but assuming that is not the case, it would be practically months before the concern could get under operation again, and there would be the loss of their position, and the loss of their connection, which would mean a great deal to them in financial loss, so it really is a matter of direct importance to them to see no fire occurs in the plant in which they are employed, and if they are instructed as to the natural hazards and the natural preventative measures, the general cleanliness and these factory conditions, and are instructed in the question of cleanliness particularly, and especially in unused places, such as under stairs and in cellars, which is one of the most hazardous conditions existing in factories, the question of the possibilities and probabilities of fire are very greatly reduced.

I simply show you one or two little suggestions, with regard to fire stations, even though they may be small, as I have to show you in the photograph. At these stations, the names of the members of the Fire Brigade are posted, showing the part of the apparatus they are supposed to handle. This shows some high-class factory apparatus. Now, there is a report which is sent in, by one of the plants in the State of New Jersey, carrying on fire drills and fire brigades very effectively, showing the reports which are sent in to the factory, at least for that particular factory, and showing this particular building which has 550 operators. I believe they have about 4,000 operatives in the Victor plant, scattered through a number of buildings, showing the thoroughness with which they are carrying on that work. Now I am going to show you a few photographs of these factory fire brigades. In this particular factory they have a number, I think it is six, different fire companies, and they have competitive drills. You notice there the fire extinguisher. This shows a more elaborate fire brigade. This is the plant at the central fire station, and the men are putting the apparatus in. Now, I just want to say a word or two about this badge, and that is the crux of the situation, as far as the fire protection movement goes in our state. This badge takes in our

original idea. The "fire chief," we have since changed to "factory chief" because we are now working up a movement, and it is working up very effectively, and we find it is quite as successful in the case of preventing accidents as it has been in preventing fires, we are working up a movement of having factory chiefs appointed by the various companies in the state, naming to the Commissioner of Labor one of their high-class employes, ranging from Assistant Superintendent to Superintendent, or the engineer in charge, to high-class operatives. They are designated by the firm and they are given a badge by the State of New Jersey, a letter from the Commissioner of Labor, and they are given a real standing, and they have a real standing in the factory, and when the Factory Inspector comes to the factory, he is instructed by law to call for the factory chief, and the factory chief accompanies him throughout the inspection. If he finds anything that has to do with a fire hazard, carelessness in the handling of a combustible liquid, gasoline and so forth, storage of excelsior, if he finds anything of that sort, if the loose sweepings are not stored in metal cans, if the waste is not taken away daily, if ashes are stored in wooden barrels, or placed where it is likely to create fire, the attention of that man is called to the fact, and it is surprising to see how much interest and co-operation is engendered. We endeavor to appeal to the men through their own representatives.

The next shows what we attempted under our factory chief movement. It was last December, soon after we had the matter under way, and previous to sending out the notices of this meeting, we had actually commissioned only between three hundred and four hundred men. That was afterwards increased, at or about the time of this meeting to possibly six hundred. Today we have over one thousand. The meeting which we held on the eighth of this month, which was the second meeting of this movement, we notified the men to bring with them any of the members of their plant. We also sent out some posters, placed in Newark, and we hired the largest auditorium in the state, and it was estimated at this meeting we had approximately 2,300 people, one of the largest gatherings I guess ever held to consider the question, not only of fire protection and prevention, but also the question of machinery, sanitation, ventilation, elimination of dust and noxious fumes, excessive heat and general factory hygiene, and the effort of the De-

partment of Labor in this particular instance was to interest the men themselves, and the women themselves, and to try to get their co-operation in preventing fires, for the protection not only of the employer, but the protection of themselves, and to insist upon having proper attention paid to the sanitation when it was provided and the cleanliness on the part of the men themselves to prevent occupational diseases, and to see that devices are used. It is most discouraging to a manufacturer and most discouraging to a factory inspector to have a manufacturer go to the expense of providing a guard, or go to the expense of providing other safety devices, and then not have them appreciated and not used by the men, and I believe students on this subject estimate about thirty per cent of the accidents which occur can hardly be anticipated or hardly be protected by means of guards or safety devices, but must be accomplished by proper factory discipline and proper co-operation between the manufacturer and the men themselves.

A MEMBER: Could I ask a question? What time do you think should be allowed, what is the minimum time allowance for emptying a factory of employes?

Commissioner BRYANT: That is a very difficult question to answer, because it depends so much on the height and size of the factory. That is, the floor space of the factory, the number of egresses which are provided, the character of the help, et cetera. I think it is a very easy thing to empty a factory too fast. I remember one particular plant which I visited, with their first fire drill. They rang in their electrical system of alarm, and they gave their fire drill, and it was not safe to be within fifty feet of the building. They precipitated themselves out of the building and they emptied the building in a wonderfully short space of time, but under what I would consider very unfavorable conditions. I think you should consider the question of time in every factory building, and the amount of time required after reasonable precautionary measures, such as are assigned, either placing their chairs underneath the table, or on top of the table; or the usual means of egress in coming out of the building, and the amount of time it would take to walk out of the building. (The remaining portion of Commissioner Bryant's lecture was illustrated with moving pictures.)

Now in one of these pictures we have actual conditions. They

have about eight hundred operators in that building, and they estimate they can empty the building and have the people back to work with a loss of time of between five and six minutes, but they have been doing it for some time. This man is supposed to have thrown a lighted cigar down into a cellar hatchway, which causes a cellar fire. This is a case where the alarm was sent in to the city fire department. This is a very large plant. In some of the smaller fires they do not immediately notify the city fire department. As a matter of fact this is the first time I have ever seen this picture myself. This is the whistle of the factory, giving the alarm, coding the alarm. Now in many factory buildings, where they have groups of buildings, we used to have the alarm sounded throughout the building on the various floors of that building, and then where they have the fire drill which takes in other plants, to have the general alarm, fire alarm, coded on a factory whistle, so the members of the fire brigade know there is a fire in this other building, and they get to their places and are ready to run out the fire apparatus.

When a person is considering the question of fire brigades, they want to take into consideration the possibility of danger from slipping ladders. I think our statistics show in the State of New Jersey last year we had seven hundred and eighty-eight accidents from slipping ladders, two of which were fatal. This shows the operatives of the building coming out from the fire door. Some of our larger factories have the ladder permanently fastened upon the side of the building, which makes a very good arrangement, having a scaling ladder down the building with platforms at each floor. This film was gotten up by a moving picture concern, and they have to get in a little of the theatrical. The dog there is a gratuity. (Laughter.) This shows the response of the local city fire department and this shows the inside fire drill at the time of sounding the alarm. One of the difficult things in a fire drill, and one of the very essential things, is to keep the discipline of the men and women maintained after they have once left the building, and keep them in line, so there is no time lost in turning them and bringing them back to the building again. I remember one of our original efforts at a fire drill in a large tobacco factory. We got them out of the building very nicely, but I do not know whether some of them ever did get back. I understood they

patronized most of the saloons in that ward before they went back, and quite a job we had, about eleven hundred or twelve hundred people, and we had to get them out of the building and bring them back again. Here is a plant with 1,200 operatives, speaking six different languages, emptied in two and a quarter minutes. This is a six-story building, the Edison plant. The operatives of course should be kept as near as possible in pairs, two by two, and then retained in that position, and marched a reasonable distance away from the factory, and then turned and marched back to the factory again. In case they have these 1,200 or 1,300 operatives, by the time they march them away and then turn them and march them into the building, by the time the most of them are coming out of the building, you can start the first and bring them back.

A MEMBER: There has been a good deal of complaint of the operatives becoming indifferent to the fire alarm, and thinking it is done to have a fire drill, and at some recent fires, it has been stated, loss of life was caused by the fact that they did not respond promptly.

Commissioner BRYANT: I suppose you have reference to the Binghamton fire.

The MEMBER: I do not know what I am referring to, but I know I have seen it somewhere.

Commissioner BRYANT: I know it was claimed at the Binghamton fire. I know that unless the operatives enter into the spirit of the fire drill, a large percentage of the efficiency of the drill is actually wasted, but a fire drill to be really efficient must be conducted as if the fire had occurred. We had an actual case in the City of Newark where in cold weather they had been bringing the women to the first floor. They could not bring them out without any additional clothing on them, and as I say, it is absolutely essential they must not go back for their clothes; in that particular case where the actual fire occurred, the girls came down to the floor, but there was no one there to stop them, and there was no one there, and they opened the doors and went right out into the streets without any trouble whatever and were taken across the street in a lodge room nearby and offered shelter until after they could return to their building.

It brings up another argument in favor of the fire chief movement, of having these people take the matter seriously and not as a joke. You take the picture of the next factory which we will show in a moment, they have been doing that for a number of years, and the thing that impresses me most in that picture is the thorough seriousness with which this whole movement is approached by these people. If you should ever hear our system of alarms, either the ten-inch bell, or the horn, you would realize how practically impossible it would be to keep anybody in the building. (Laughter.) One of the inspectors was testing out the system of alarms. He went to the factory awhile ago, and he thought he gave directions to the entire plant, but one room was separated, and they had not been notified at all, and they did not know anything about the fire drill, and he pulled this system of alarms, and those bells or horns or whatever it may be, started, and he said that whole room precipitated themselves out of there and almost took him with them. They would not stay in there with the alarms going, and the alarms are repeated four times. If I understand that electrical alarm system in the Binghamton fire recently, it was not a box arrangement. Somebody was supposed to stand there and code the signal with his thumb, and I believe the man who was supposed to be there was not there, and the alarm was not sent in according to the schedule at all, but one continuous ring, and they did not pay any attention to it. We do not use the single numeral.

A MEMBER: Have you met that difficulty in your own experience in New Jersey, about their getting indifferent to the alarm?

Commissioner BRYANT: I know of one complaint I have had from a factory about that particular thing. That is, from the factory manager, that he thought the operatives were losing their interest in the matter, because they had had so many drills, and had not had any fire, and of course it is the ever-present problem you have got to confront. I do not think it is at all a serious one.

This film was furnished gratuitously to us by the Edison Company, and was taken at the Edison plant.

I think one of the most difficult problems, where you are called on work of this character through a large state with hundreds of factories, is to advise a factory to see that the girls are helping

to see that electric alarm system is kept in working order, and there is some effort made on the part of the manufacturer. One of the things that is very pleasing in the factory chief movement is the spirit in which the manufacturers themselves receive the matter. I have thousands and hundreds of complimentary letters from manufacturers commending this movement and giving it their hearty co-operation and support.

In this factory in addition to having their outside members of the fire brigade, they have a line of hose to every seventy-five feet in the building, and it is the duty of two specified operatives to man these lines of hose. This is what I have reference to, a permanent scaling ladder. This is one of the larger fire units outside of the building. We timed that particular plant, and found that in less than one minute by a stop watch they had three lines of hose up to the top floor of that building. That shows you one of the lines. This shows the girls coming out. You notice this girl, who is the bellwether of the flock, regulates the speed at which they travel. Also, I want you to notice how well they keep their distance. That plant has a drill not only for the entire plant every month, but it has a drill for each floor each week, and that drill is conducted by the drillmen of the particular floors. Now, there is a plant that has the fire drill down to a finished nicety. They take the girls one block from the building and turn them and bring them back. That is a plant where I say they can empty their plant of approximately eight hundred operatives in about—I forget the exact time, but they estimate it between five and six minutes to bring them out and bring them back, and of course that is a serious proposition. You must have the fire drill so there is a minimum amount of loss of time. This is another plant of the same concern, the General Electric, on the Harrison side of the river. The operatives in the first moving picture were really anxious to get out too fast. It was one of the newer fire drills, and they had not got it down as well as these concerns that have been at it longer. This shows the girls coming down the fire escape. It is part of our fire drill, when an alarm sounds, that specified persons are to man each one of the entrances to the fire escape. Also that the windows should be closed on the fire escape. We also suggest, as a matter of fact, that all the windows in the building be closed to stop a back draught from burning the build-

ing, although we do not insist upon that. It is more a measure to stop the spread of the fire. We also have one person to visit the toilet rooms and dressing rooms to make sure there are no operatives left in the building. This shows the girls after coming down from one of the upper floors of this building to the egress in that building. I want you to notice how well they get together there and preserve their alignment. This picture shows the central plant of a group of buildings. Of course most of these fire brigades, in fact all three of them, are larger fire brigades and cannot be conducted in smaller factories very well, but in some factories they simply have been equipped with chemical fire extinguishers, where you can ring in the alarm, and on a particular floor they will bring fire extinguishers, varying from perhaps half a dozen to twenty-five. I thank you very much for your kind attention. I am afraid I have consumed too much time already. (Applause.)

(At this point in the proceedings, Mr. Brownell, Safety Inspector of the Chicago Railways Company of Chicago, showed one reel of moving pictures which were not shown at the morning session, remarking:)

These reels have been shown to from fifty to seventy-five thousand people in the public parks of Chicago in the past month, and they will be shown in the Chicago public schools this fall. We started the safety movement in November of last year, and the wonderful work that has been accomplished in that time shows that we have only touched the hem of the garment. We were able to get through the month of July without a fatality, and that was a record that has not been made in the past twenty years. This is the safety button of the Chicago Railways Company—Safety, Prevent Injury, Courtesy.

(Motion pictures.)

The CHAIRMAN: Ladies and Gentlemen, we have just one more short number on the program. We are very fortunate in having Miss Frances Perkins of the New York Committee on Safety with us, and I take pleasure in introducing Miss Perkins.

Miss FRANCES PERKINS: Your discussion here this afternoon has made me feel more than ever certain that there is a place for

committees like the committee that has been organized already in New York—the Committee on Safety—all over the country. That is, a committee of laymen, people who are not engineers, but people who are interested in industrial safety from a purely humane and social point of view. We are banded together in a committee for the purpose of aiding and abetting persons like yourselves, who are studying the same problems from the engineers' point of view, and of aiding administrative officials who are charged with the duty of enforcing the law in such a way as to safeguard human life. A committee having such objects, was formed after the Asch Building fire, its purpose being to suggest something that could be done immediately to improve the safety of workers in New York City. This became the Committee on Safety. A large part of the work of this committee is to popularize ideas which have been put before you today here on the screen and in the lectures which have been given. While Colonel Bryant was lecturing, someone raised the question as to the popularity of these ideas among the working people in the factories, as instances have been reported where working people were not interested in the fire drill. I thought at the time that the pictures b' 'ng shown were pictures of manufacturing plants which had co-oper ted with Colonel Bryant and his experts in putting into operation drills and other preventative measures. There still are thousands of manufacturers who do not care about fire prevention, who are annoyed to have it spoken about, and who will not spend one cent on precautionary measures unless forced to do so. Because there is this great bulk of prejudice both among the owners and the workers in factories against fire prevention, it is a very difficult problem to popularize a fire safety program. This is because it costs money from the employers' point of view, and because it takes time and is troublesome from the workers' point of view. There is a growing necessity for popularizing these ideas not only among the working people but among the people generally so that there will be intelligent co-operation with fire officials, and also a demand among the working people for protection of their lives which will be so strong and powerful that the most pigheaded and penurious employer shall hear and answer that demand. It is work of that kind, that the Committee on Safety is formed to do,—to popularize these ideas of fire prevention, to recommend the practical application of ideas

which are proposed by the best engineers and the best experts, and gradually to get into people's minds the fact that these precautionary measures must be taken not purely as a matter of dollars and cents, but for the social value of lives which are at stake in factories not properly protected. I want to point out to you a fact which I can never cease to recognize and speak about, that these matters are not for engineers alone, although it is significant that even the engineers are now considering them from a new point of view. These matters of industrial safety are human, social problems, and the Committee on Safety, although supervised by engineers, is chiefly composed of people connected with the social workers and the working people of this city. It is a group of people to whom human safety and happiness are essential, and these considerations are prime factors in our work.

It is significant that we are beginning to realize the social value of one human life, and the little Russian girls and the little Italian girls who were burned in the Asch Building fire, and the older Irish and American girls burned in Binghamton, somehow represented a value in the community which did not mean only dollars and cents and profit and loss. They had a relation to you and to me quite as much as those who hired them to work on garments. They represent people who had homes, who had families, who had people dependent upon them. They represented working factors in our community, which are important, because without them and their labor you and I and all of us who live here in New York are hindered and handicapped. We have begun to realize that the possible children of these little Russian and Italian girls are valuable workers, are people of great importance to our community, and we see at last that if we want our community, our nation, our democracy, to succeed, and to enter into the fulfillment of the prophesies made about it in its early days, we must take some trouble to preserve the life and health, the arms and legs, the happiness of the people who work in our factories. That is why it does my heart good to see engineers like yourselves, who deal with these things from a scientific point of view, looking at them for at least a few days from the viewpoint of humanity. I thank you. (Applause.)

(At the conclusion of this paper, the Fire Prevention Session adjourned.)

ORGANIZED SAFETY SESSION,

September 24th, 1913, 10:30 A. M.

"President R. W. CAMPBELL: Will the meeting please come to order? It has fallen to my lot to introduce to you today the gentleman who will preside at this session. In view of the fact that this session is to consider organized safety work, it has been thought advisable prior to the opening of the meeting and turning it over to the presiding officer to have a brief statement made respecting the objects, purposes and form of organization of the National Council for Industrial Safety.

I think we are all agreed today that organization is the foundation of all practical work. A year ago, about this time, at Milwaukee, at the session of the Association of Iron and Steel Electrical Engineers, I ventured to predict that at that congress held under their auspices, organization would be the keynote. It developed that it was, for at that session a committee was appointed to consider the advisability of, and prepare plans for the organization of a national society, which should have for its primary object the promotion of accident prevention work. That committee was appointed, and I am here as a representative of that committee. I am in the shoes this morning of Mr. Ferdinand C. Schwedtman, who is the chairman of that committee, who, as you have been advised, has been unable to attend the sessions of this congress, and who would, if he were here, make the announcement which I am making today.

The committee appointed at that time had several meetings, and in June last, presented to a larger "organization committee," chosen by it, a proposed plan of action. It was then decided to revise the plan proposed at that meeting, and a sub-committee consisting of Mr. Van Schaack, Mr. Morey, Mr. Avery, Mr. Richards and myself, was appointed to prepare a constitution and by-laws, nominate directors, executive committee, and prepare a general plan of campaign for submission to the organization committee. The work done by that committee, was approved by the larger "organization committee" mentioned and the organization is now completed. It is being launched today. The National Council for Industrial

Safety proposes "to promote the conservation of human life and its incidents in the industries of the nation, and, to that end:

"(a) To establish a conveniently located headquarters for the maintenance of a clearing house of safety information, available to all concerned.

"(b) To encourage and promote throughout the country the organization of those engaged or interested in safety work into District and Local Councils, in affiliation with this National Council.

"(c) To hold annual congresses, at which all persons interested in accident prevention and kindred subjects may take part in practical discussion of vital problems, and also have opportunity to examine carefully prepared exhibits; to publish and give wide distribution to proceedings of such congresses; to give awards for meritorious exhibits, safety devices and other accomplishments in line with the objects of the Council.

"(d) To encourage and assist in the practical standardization of safety devices, safe conditions and practices.

"(e) To give the widest publicity, through its own publications and other channels, to all matters calculated to promote industrial safety.

"(f) In general to initiate, promote, co-operate with and obtain the assistance of, any and all activities or agencies calculated to conserve human life and its incidents in the Nation's industries; and to participate in and aid other activities for the welfare of the industrial workers of the country."

In order to accomplish this, there are a number of things that must be done. Officers and an organized body must be provided for, which has been done in our constitution and by-laws. Members may come in individually, as representatives of organizations with which they may be connected, or in the capacity of associations. There are honorary members, associate members and active members.

Honorary members are those who may be elected such by the executive committee. Associate members are associations composed of individuals who otherwise would be eligible for membership in the organization, and their representation is confined to two. The amount of dues for associate membership is fixed at

$10.00. Anyone interested in the objects of the organization is eligible to active membership—we care not what your affiliation may be, whether you are safety men, whether you are representing industries, whether you are engaged in sociological work, educational work, or any other kind of work, you are welcome to our ranks. Individual membership fees are fixed at $5.00 and membership fees of those who may be engaged in industrial pursuits or transportation enterprises are fixed upon a sliding scale, from $5.00 to $100.00 in the case of industrial concerns, based upon the number of employes in the concern during the previous year, and of transportation enterprises, the number of miles operated during the previous year. Members are entitled to one vote for every five dollars of dues that they pay, and to one representative present at the meetings of the Council for every $5.00 dues that they pay. They are entitled to call upon the Council for any and all information which may have been collected by it, without charge being made therefor, and to obtain the advice, aid and assistance of its experts upon the payment of a reasonable fee therefor. It is unnecessary at this time, or not advisable, to go into any details in connection with that matter.

The management of the affairs of the Council has been vested in a Board of Directors, seventy-five in number, divided into three classes, one class serving one year, the second serving two years, and the third serving three years. This Board of Directors has been elected. We do not know how many of those elected will consent to serve, as the election has only taken place in the last two weeks. They have been selected from the representative men of the country in all phases of its industrial and transportation and civic and sociological life, you might say. The actual management of the affairs of the Council is vested in an Executive Committee which has already been selected for the first year, and which will hereafter be elected by the Board of Directors at a meeting subsequent to the annual meeting. The Executive Committee is vested with the further duty of electing the officers of the Council. There will be a meeting today at four o'clock of the Executive Committee, for the purpose of electing officers of the Council to serve for the next year.

There have been standing committees provided, which will be appointed by the President of the Council, with the approval of

the Executive Committee, consisting of Finance Committee, Program Committee, Publicity Committee, Nominating Committee and such other committees as may from time to time be determined upon. The financial affairs and their protection by the Council have been well provided for, and meetings of the Council, Board of Directors and Executive Committee have been also provided for.

One of the important provisions in the By-Laws is that governing the organization of Local Councils. Here, let me say, it has been the observation of many of us that the best work that we can do, and the most advantageous to all of us, will be similar to that which is being done these mornings in your Round Table talks, in which a dozen or twenty or thirty of you get together around the table and discuss the problems that are common to all of you, and for that purpose, if any five or more members of our organization in any geographical district desire so to do, they are permitted to, and we will urge them to organize into Local Councils affiliated with and under the direction of this Council. When that is done, up to but not exceeding twenty per cent of the dues paid by those members will be paid back to the Local Council, if its expenses amount to that much. In other words, if the Local Council is formed, a part of its expenses will be paid, at least, by the National Council.

Now you may ask, to carry out all this, what must be done by the Executive Committee; what will be some of the phases of this activity? The Executive Committee has had several informal meetings, and while nothing absolutely definite can be said, we are of the opinion that among other things the first and most important one will be the getting of members and the raising of funds; that is, membership and finance. The second and next important thing will be the getting together for the benefit of those whom we may obtain as members a vast fund of data and material for our information bureau.

Thirdly, to preach and promulgate throughout the country the doctrine of accident prevention.

The next question will be the "how," probably.

The Finance Committee is at work already. The Finance Committee will have appointed in the larger centers of the United States, sub-committees, which will be both finance and membership committees. We shall expect individual effort on the part of

every member of the Council, and everybody who may be interested in it, although they may not be members of the Council.

Lastly, we believe we will get the most benefit in all lines from one of the methods of approaching our work through the sectional work of the National Council. It is proposed to divide our bureau of information into sections, which will be representative of the several distinctive branches of industry in the country in accordance with the special hazards appertaining to them, such as textile industries, transportation, iron and steel, electric light and power, and a large number of others too lengthy to be named, taking these several sections as they may have clearly fixed lines of demarcation, and segregating our work up into those sections.

For each section it is proposed to have a representative man engaged in the business in that section act as chairman of the sectional committee, which sectional committee will be another arm of the Executive Committee. It will be through these sectional committees that we will hope to do a great deal of our organizing work out in the field. It will be through these sectional committees that we will hope to get data and information that may have been accumulated by members of that section, on safety work, and it will be through these committees that we will hope to standardize safety devices and safety practices and safety rules, so that ultimately we can have for each of the sections a standardized set of rules and safety devices to submit to anyone who may make inquiry therefor.

These sectional committees will likewise be held responsible for sectional sessions at our annual congress. In other words each of you who have some special subject, will be given an opportunity under the direction of that sectional committee, to have a little congress of your own in addition to the general congress that will also be held where general problems will likewise be discussed.

These are, in brief, a few of the plans that have been fulminating in our minds, and we think will be put into effect. It may be that some of them will be changed, but we thought at some meeting of this sort, a general idea of the purposes and plans of the National Council for Industrial Safety should be presented to you, and it was thought advisable to do it at this meeting rather than at the banquet, as it is possibly hardly a banquet topic. I trust I have not bored you, and I want to say in concluding my statement that we are going on in a great movement, and one that we

think deserves the hearty co-operation of every individual, of every industrial concern, be it great or small, and we therefore wish to urge upon you, and each of you, that you either individually or as representative of the industry that you are here representing, to take out membership in this Council; put your shoulder to the wheel, help us in a great movement, and do your part. We are going to have the banquet this evening, and it is urged that each one of you be present tomorrow. There will be a business meeting of the National Council; and further reports of the committee and the returns from the election of officers and other announcements will be made. That meeting is an open meeting. If you have not filed an application for membership, it will not debar you from attending. We would like to have you there. Many of you have better ideas than we have, and when I say "we" I am speaking for the Executive Committee. We want every one of you there, whether you expect to be a member or not; we want you there with your ideas, and we hope every man will offer us some suggestion which we can consider, and possibly adopt.

I will not burden you with reading the long list of Directors, but I think that with the exception of one or two of us who are on this list, you will find that the Executive Committee is a guarantee of earnest, sincere and hearty work along this line.

EXECUTIVE COMMITTEE.

Messrs.: R. C. Richards, C. & N. W. Ry. Co.
C. L. Close, U. S. Steel Corporation.
David Van Schaack, Aetna Life Insurance Co.
Ferd C. Schwedtman, Racine-Sattley Co.
L. R. Palmer, Chief Factory Inspector State of Pennsylvania.
H. M. Wilson, U. S. Gov. Mining Bureau.
C. W. Price, Ass't. Wisconsin Industrial Comm.
Edwin R. Wright, Chicago, Ill.
E. G. Trimble, Employers Indemnity Exchange.
G. L. Avery, Avery Company.
Chas. Piez, Link-Belt Company.
A. T. Morey, Commonwealth Steel Co.
R. J. Young, Illinois Steel Co.
R. W. Campbell, Illinois Steel Co.
W. H. Cameron, Chicago, Ill.

Our work is to be done through co-operation, co-operation of individuals and industries, co-operation of state and federal and municipal bureaus, co-operation with every museum and every factor of every kind that is engaged in welfare or in industrial betterment work."

Organization, as I have said, is the topic today, and I think we all recognize that the United States Government is probably the most highly organized institution in the world. It is therefore fitting that at a time when we are to discuss organized safety work, a representative of that government should be the presiding officer. It is to be regretted that Mr. W. B. Wilson, the Secretary of Labor, could not be here, as it had been planned that he should preside at this session, but we have a most able and excellent substitute in Dr. L. W. Chaney, of the same Department, and I take pleasure in introducing Dr. Chaney to you.

Chairman L. W. CHANEY: Some men are born to honor; some achieve honor, and some have honor thrust upon them. You can classify me according to your predilection. I am not going to spend any time in preliminary remarks. A telegram is before me from Secretary Wilson in which he expresses his regret that due to an important conference in Washington, he is unable to be here, and I think I may add that he has a more serious reason in the illness of one of his family, which was communicated to us privately.

I have the pleasure of announcing to you, not introducing, because he needs no introduction, but of announcing to you the first speaker of this morning's meeting—Dr. Charles P. Neill, formerly of the United States Bureau of Labor and now in charge of welfare work of the American Smelting and Refining Works, the chief under whom I have worked very happily for five years. He will take up the topic of "Organized Safety—N. C. I. S." (Applause.)

Dr. CHARLES P. NEILL: Mr. Chairman, Ladies and Gentlemen: This organization, which is holding its meeting today, might be called a symptom. I wish I could say that it was a symptom of convalescence, but I am afraid that regard for truth prevents me going farther than saying it is a symptom of the beginning of a possible convalescence.. Amongst the industrial nations of the world, the United States has attained pre-eminence in many aspects of

industrial life, most of them aspects, we are all glad to say, in which our pre-eminence is one that we are proud of; but, in one aspect, we have attained a pre-eminence of which we have a right to be heartily ashamed. It is a sad pre-eminence, a heart sickening pre-eminence, a shocking pre-eminence. That is in what we might call the slaughter of the unoffending. I doubt if there is a commercial nation today, laying any claim to an elementary civilization, that has been maiming and mangling and killing those who attempt to earn their bread in the sweat of their faces with as little apparent regret and as little thought as we do in the industrial centers of the United States.

When we ask "why" such a condition exists, we are usually told it is due simply to the greed of the employer. I do not believe that is true; and if it were, we here might as well adjourn. If it were true that greed, in the sense in which it is ordinarily used, was the cause of this industrial slaughter; if it were true that this sacrifice of human life and limb were deliberate; if the neglect and the apparent indifference of the employer were with the full knowledge that it meant this slaughter;—I should say we were too far gone in callousness to expect or to hope ever to be reformed. But I do not think that is the case. Perhaps, in the concrete, the immediate results are just as bad as if industrial accidents were due merely to greed for profits; but it seems to me that the real truth is that it is simply one of the many unfortunate phases, one of the many unfortunate indications of a national characteristic,—and from this rises my hope.

We are all reckless, we are all careless, we are born gamblers and take our chances whether it be with our money, or our limbs or our lives.

I suppose our most shocking list of accidents is that on the American railways; and yet I believe that the railway managers of the country,—very many of whom I have met and know rather well,—do not differ from the rest of humanity. They are humane men. They go on running their business, unfortunately taking chances which every now and then turn out to be an unfortunate chance. The same thing is true of their employes—chances are frequently taken by the employes, and every so often the chance goes against them, with disaster to themselves—and often to others. Take the passengers themselves. Many a railroad feels com-

pelled to run trains at a speed which proves unsafe, because the traveling public demands it. Again a reckless portion of the walking public uses the right of way of the railway as a public highway, and annually furnishes a fat list of killed and mangled, made up from those who were walking on what is known to be a dangerous pathway. You may go through out entire list of activities, whether they be industrial, or whether they are the ordinary activity of the street. I remember a city here recently which began a campaign for safety. One of the newspapers took it up and every day sent a photographer out simply to take pictures of dangerous practices that ought to be stopped. I lived in that city, and went up and down the streets day after day. It did not occur to me that the citizens of that place were extremely reckless, but when your attention was thus called to what they were doing, and when you saw actual photographs of a man, for example, walking in the middle of the street crossing, reading his morning paper, with automobiles,—which seem to be terrible engines of death,—running up and down, and every driver having to look out for that man bent on reading his paper, when you saw picture after picture of people going across the street, in the middle of the square, engaged in heated discussion, with heads together, and all around them danger of every sort, you were brought to a keen realization of the reckless disregard for safety that besets us at every turn. I noticed striking evidence of this this morning, right at the corner of the hotel there. There was a police officer regulating traffic at the street crossing and doing it very efficiently; but in spite of that there were dozens of people who could not wait even the few seconds necessary for the tide of travel to start the way they were going. They were taking their chances. They were saving probably not over a quarter of a minute; and they were taking a chance of death. Now it seems to me that this national characteristic of recklessness is what is the matter with us today in industry.

Our remedy lies in a vigorous and systematic campaign of education. We must organize for education. You have got to begin to educate, and you have got to begin to educate at the top and at the bottom alike. It is not alone your foreman; it is not alone your superintendent; it is not alone your manager. You have got to begin farther back than that. Unfortunately the inevitable trend, the necessary trend,—and, however much we may regret it,

we have to admit it is a trend we cannot stop,—is for business to become larger and larger, and for those vested with the real power and the real direction to get so far removed from actual contact with actual working conditions that many of them would not know one of their own plants if they saw it.

The result is that it is not easy to wake up the real controllers of industry, who are so remote from its actual physical operations; to the shocking nature of our industrial accident and death roll.

And this, again, is not because they are unusually callous, or greedy, or cruel. It is simply because they are very much like the rest of us. Let me illustrate what I mean by an instance taken from the events of this week.

We read yesterday, for example, of an accident on the Long Island Railroad. There were three people killed, and twenty or thirty injured. I do not suppose it impressed any of you as it did me, because I had been living out on that road, and coming and going daily on its trains, and when I read of that accident it gave me a distinct physical as well as a mental shock. If I had read of such an accident somewhere a few hundred miles from here, on a line I never traveled over, I would not have had the same shock; neither would you. If you read in the morning paper, the headline "Wreck and three people killed," you would have had your interest aroused, but if the next line said Colorado or Utah or Oregon, instantly your interest would have dropped a little bit; and if it had said France or England or Germany, your interest would have been still less. In other words, it seems to be inevitable, it is human psychology, that the farther away from you the thing actually is, the less it impresses you. Now, those who are ultimately responsible, those in whom the right spirit would put the right feeling into the plant, and those in whom the lack of the right spirit keeps the right spirit out of the plant,—they never see the thing in its real horror. They hear of it, but it is remote, even if it is in their own plants, it is still remote from them.

Now, the question suggests itself, how are you going to educate them? We have been publishing statistics of accidents, for example, for quite a while, but statistics of accidents, even of your own plant, do not mean very much to you, where your plant and your employes are things very far removed from your real surroundings, very much apart from your daily life. We have got

to vitalize the statistics. We have got to make clear, when you say so many human beings have been killed during the year, and so many permanently maimed, that it means that many widows; that it means that many orphans. You have to bring it home to them and ask: How would you feel if the bread-winner was gone? How would you feel if your son had been killed? What would be your feeling not only toward your employer, but your feeling towards organized society, if one or two, possibly, of your own children, had been thus killed; or how would you feel if your father had been killed when you were a boy, and you had been left destitute because legally he "had assumed the risks of the employment." We have got to bring out just exactly what these accidents mean. You have to take the men who are responsible for the management and for the spirit that comes into their plants, and you have to bring and serve up before them exactly the amount of human misery, the amount of human suffering, that they have inflicted during the past six months, or the past so many years,—and I have sometimes thought it might be well to require a really calloused case to go and spend the first forty-eight hours after the funeral with the family whose breadwinner had been taken away.

So, as I say again, we have got to begin at the top, and we have got to begin a campaign of education which will set up, not a hysterical reform movement such as follows every big accident, for, like political reforms, they quickly die out and nothing comes of them; but we have got to set out and create, by keeping right at it, a permanent, fixed, ethical standard; an industrial conscience which will hold that every avoidable accident is a crime, and should be punished as a crime if it can be shown that it was avoidable.

In other words, we cannot take our chances with human life and human limb and human happiness in the same way as we take our chances with our money. Alongside of that campaign of education we can carry out a further practical work, and that perhaps comes down more definitely to the functions of this Association at this present time. Mr. Campbell suggested this morning very well, that what is badly needed is a clearing house. You may go through any number of plants today for the identical machine or danger point, find every conceivable kind of safety device, ranging from one that is excellent to others which are ony protective devices in name and, under some circumstances are really danger

traps. Again, a number of employers may have the same machine. That machine develops a defect in one plant and an accident happens in that plant. An accident happens in another plant, due to another defect. There is no interchange of information about that. The first plant will continue until some accident happens there that happened in the second plant, and the second plant will continue until the same accident happens there that happened in the first plant. I remember only this summer an instance in which a very shocking accident occurred from the bursting of a band which was held by a single bolt on the large fly wheel of a hoisting machine in a mine. That hoisting machine was typical of many used in that region. Precautions were immediately taken to prevent a repetition of the accident in that mine. But it did not occur to anyone to notify other mines using the same kind of machines, or to notify the maker of the danger lurking in the mechanism that gave way.

The manufacturers of machines probably do not hear of one-half of the accidents that are due to defect of make or design. Now, my idea is, that this organization should establish an office or a bureau which should serve as a clearing house; that every accident occurring in the plant of any of its members should be reported, with a very careful analysis of just how it occurred, and every other member be served with a notice of how it occurred, and how it can be remedied. It might notify every manufacturer of machinery of every accident occurring through machines of his or their make, if it was due in any way to the fault of the machinery, so that that defect may be corrected. In the same way where manufacturers of machinery are putting safety devices on the machinery; wherever one of those fails, notify the manufacturer of that. More than that, I think that this association could very well even have a corps of lecturers who would travel throughout the principal industrial centers and arouse the interest of those who are behind in this movement for industrial safety.

There are thousands upon thousands of employers in the United States, not little fellows, but very large ones at that. A few of them have begun this safety movement, and it has gotten a great deal of notice, and very wisely and very properly so; but we are likely to think it is a very much more widespread movement

than it really is. We are just making a beginning, and for every company, every organization that has established a safety department, there are a considerable number that have not even made a beginning. Now, there is where you have got to begin your campaign of education. You have got to send into those industrial centers, and you have got to get out after those people and make them realize that they must do something. I was going to suggest a while ago that one of the functions of the association might be in the helping on of legislation. I do not know whether that is advisable in the beginning or not.

Brother Andrews here will probably attend to that, but I might also suggest this on that line: Even the legislation itself will only accomplish a small part of what might be accomplished if it is imposed on them against their consent, against their wishes, and without their cordial co-operation.

What I want to get back to and hammer at time and again is this: If those responsible for the conduct of the work and above all, those engaged in the work itself, both employer and employe, are not going to co-operate cordially in cutting down the accident rate, you cannot cut it down except in a very trifling degree, so I come back again to my original proposition, that this must be an educational movement, and you should, I think, send out lecturers to the various centers in order to stir up interest in the matter, and then let them, more than that, have a corps of experts attached to this central bureau, so if a man is looking for advice how to do this, that and the other thing, he can send here, and this bureau can send an expert to give him the advice and co-operation that he needs to install this system in his plant.

It seems to me, I am frank to say, that this is going to be a very large undertaking; the idea I have in mind myself would be an extremely large and very expensive bureau. I do not think the expense need worry us, however, because it seems to me that every employer of any consequence in the United States ought to be a member of this association, and ought to be willing to contribute to its support, and if we had one-half of those who ought to belong to it, a very, very moderate subscription would maintain a very large bureau.

I suggest, therefore, that we consider two propositions as fundamental, the first that this association—perhaps I should say second

—ought to be an association of all the employing interests of the country, united for this one cause, contributing to its support, raising a large fund and maintaining a bureau with a large corps of expert men, and that it should also be, essentially and primarily, a center of light, a center of education, until, as I said in the beginning, we would have it fully grounded and accepted in every industrial center in the United States that every avoidable accident was a crime. (Great applause.)

CHAIRMAN CHANEY: I now have pleasure in introducing to you a gentleman whom we all welcome into our midst: the new Commissioner of Labor and Industry for the State of Pennsylvania, Dr. John Price Jackson, who will speak on the "Pennsylvania Department of Labor and Industry."

Dr. JOHN PRICE JACKSON: It gives me great pleasure to be with you, because I believe it is through your organization, and similar organizations in the United States, that such departments as the Department of Labor and Industry of Pennsylvania, can do much of their best work.

There are approximately seventy men and women in the organization of the Pennsylvania Department of Labor and Industry and neary 8,000,000 people in the Commonwealth, a very large proportion of whom are engaged directly in various industries. What can seventy men do as policemen, among so large a population, to enforce the laws, or what can they do as advisers even, if they are to work alone? But if the seventy men have the backing of every humanitarian society in the State; have the support of every manufacturer in the State; have the confidence of the labor of the State; and have the co-operation of the insurance companies, the school people and public officials of the State, instead of being seventy, do they not become multiplied into tens of thousands of man-powers? Do not they, the small State Department men, become the center of a great organization covering the whole State, largely made up of voluntary units, and yet very positive and effective? I believe such co-operation was intended when this Department was established.

I have been informed that what you wish me to do this morning is to give you an outline of our Department organization. I be-

lieve, with Dr. Chaney, it is entirely fitting and proper that the State of Pennsylvania should be represented this morning insomuch as the law creating its Department of Labor and Industry is probably the last enacted in any State of the Union, and, the result of much investigation and thought.

A number of prominent men did a large work, at the request of the Governor and the Attorney General of the State, in preparing a basis for working out the law and many of the details for the creation of this new Department. Of these men I wish to mention in particular, Jasper Y. Brinton, of Philadelphia, a brilliant lawyer and a man of the highest humanity. Governor Tener himself took the subject up and reviewed, with his Attorney General, the proposals submitted to him, making such modifications as appealed to him as right. He then used his personal influence to have a proper law enacted. I have drawn here a few rough charts which give you a concrete idea of our work. Possibly, I ought to have Washington, the national government, the center and have surrounded that by a Department of Labor and other national service departments. But since we are dealing with Pennsylvania, the charts represent the administrative organization of Pennsylvania alone. The State administration converges to the center; thus the center circle represents the Governor. Surrounding him, and subject to his will and control are the various departments of the State. Permit me to say here, as a personal interjection, that when I was appointed to the Department (my first public position) I had much doubt of the wisdom of accepting, and, further, many of my best friends advised against leaving a private professional career for a political position. As an indication of my acceptance, I can now honestly say that I have been in my new position three months, and every day my admiration of the great work that the administration of Pennsylvania is doing for the people of Pennsylvania, is increasing, as is likewise my respect for the personnel of the people who are doing that work. Is not such a statement rather surprising to you from Wisconsin, Massachusetts or elsewhere, who have often heard ill of my State? In this age, the State Governments and the United States Government are, in a surprising degree, learning to give direct service of the greatest value along many lines to the people. For instance, in Pennsylvania, the Department of Health has changed our water supply from an origin of typhoid

fever and other sickness to one of purity and safety, has reduced contagious disease to a minimum, and many other and valuable works of equal extent have been accomplished. The Highway Department is covering the State with good main highways, as rapidly as its funds will permit, and is certainly reducing the transportation costs of the people. The Water Ways Department is vigorously attacking the problem of reducing floods and the resultant loss to life and property, promoting steady water flow, and conserving the water power of our streams as they flow down the mountainsides of the Commonwealth; the Foresty Department has gathered a million acres of woodland and is adding thereto, for the purpose of maintaining the fertility of our agricultural lands, and to hold for the people a great natural resource; the Fire Marshal's Department is showing the way to reduce loss by fire; the Public Utilities Commission has entered upon the task of regulating the vast public utilities of the Commonwealth in fairness to the user and the investor; the Department of Agriculture is demanding that our food be pure and is aiding the farmer; the Department of Education and State College are carrying their facilities direct to the people of all ages and avocations; and so on through the list. The slogan of the State Administration has become not only "law and order," but also and conjointly therewith, "service."

Having now pointed out the Governor's office in the center of our chart and spoken of some of the service departments radiating therefrom, let us hasten to our more particular business, namely, the new Department of Labor and Industry.

This radiates from the Governor's office in three lines: the legal division extends from the Governor through the Attorney General's Department; the Industrial Board comes directly from the Governor; while the various bureaus of the Department, to be described later, are connected to the Governor through the Commissioner. Let me say, before I go on, that I have yellow here in the chart and blue there (indicating), because our Chief Medical Inspector says that, physiologically, those are the proper colors to indicate danger. I assume that the safety experts have already adopted them to a certain extent. We put green in the Commissioner's spot, not as an indication of character, but because we hope he is safe. (Laughter).

Let us first take the path to the Industrial Board, which consists

of the Commissioner as Chairman, one employer, one employee, one woman, and one other person.

The Industrial Board, being appointed by the Governor, is rather independent from the rest of this organization, which, excepting the Attorney, is appointed by the Commissioner. Its functions are to investigate various kinds of labor, such as immigrant, women's and children's labor, and to make special studies along various other lines. But its most important function is to formulate and adopt regulations and rules for carrying the recently enacted safety law of the State into effect. The gist of this law is as follows: "All rooms, buildings and places in this Commonwealth where labor is employed, or shall hereafter be employed, shall be so constructed, equipped and arranged, operated and conducted, in all respects, as to provide reasonable and adequate protection for the life, health, safety, and morals" (note particularly the words, "to provide reasonable and adequate protection for the life, health, safety, and morals of all persons employed therein"). For the carrying into effect of this provision, and the provisions of all the laws of this Commonwealth, the enforcement of which is now or shall hereafter be entrusted to or imposed upon the Commissioner or Department of Labor and Industry, the Industrial Board shall have power to make, alter, amend, and repeal general rules and regulations necessary for applying such provisions to specific conditions, and to prescribe means, methods, and practices to carry into effect and enforce such provisions." Thus the Board shall make regulations as to safety and health and carry them into effect, or see that the remainder of the Department does so. "Any employer, employee, or other person interested; either because of ownership in or occupation of any property affected by such order, regulation, or otherwise, may petition for a hearing on the reasonableness of a rule or regulation."

The chart indicates this enormously important duty of the Industrial Board to make regulations and rules for the safety, health, and moral welfare of all people employed in the industries, and also that the Board may sit to review its rules and regulations when complaints come in that they are working a hardship and are unfair. You can readily see from a consideration of these functions, the importance of having this Industrial Board independent of, but at the same time, correlated with the Department of Labor and Indus-

try proper, which is executive in character. I brought the Industrial Board to your attention first, because I consider that it is in some regards the heart of the whole organization.

The Department Attorney and other legal assistants are appointed by the Attorney General. The Attorney is expected to give legal advice to the Department, and is also to direct the prosecutions. Permit me to diverge a moment to say a word concerning prosecutions. I had a six-page letter recently from one of the best manufacturers in the State of Pennsylvania, who operates one of our cleanest, best arranged plants. He is a man who is kind to his employees and looks after their welfare. Our inspectors found that he had in his employ two young men—boys, slightly over fourteen—who had not presented school employment certificates which the law demands. In this letter he put the case before me very strongly, arguing that he should not be disgraced by being taken before a magistrate. Should his pleadings win or should he be prosecuted? On the other side of the picture is a poor ignorant fellow down the street, who does not write a letter, but who has two other boys illegally employed. He is prosecuted at once by the Attorney. If we let the first man off are we not now inconsistent? And will we not lose the confidence of both employers and employees, and our usfeulness? Then, again, here is another man, who is squarely crooked and intends to break the law. He is prosecuted, of course. I draw your attention to these cases to show you how difficult it is to keep the friendship and co-operation of the manufacturers and at the same time squarely enforce the law. Yet we must have this co-operation, as I said in my very first remark, if we are going to be of value. As a police department we are very small; as a co-operative department we may be very great. Though, as you see, the problem of prosecution is difficult, I am inclined to believe that it may be solved by reasonable and open-minded study of intent on one side and fearless insistance that the law must be obeyed on the other side.

We have considered the Industrial Board and Legal Division. The executive organization of the Department is under "the direction and supervision of the Commissioner of Labor and Industry," who makes the appointments, and consists at present of the Bureaus of Inspection, Statistics and Information, and Mediation and Arbitration; the Divisions of Hygiene and of Accident Reports; and the Chief Clerk's Office.

The Bureau of Inspection includes the Chief Inspector; fifty first grade or district inspectors; two supervising inspectors (second grade); two physicians (third grade inspectors); and the fourth grade inspectors, consisting of the Chief Medical Inspector, a Mechanical Engineer, who is familiar with accident prevention, heat, light, and so forth, a Civil Engineer, who is familiar with accident prevention, and a Chemical Engineer who is familiar with poisonous gases and dangers in industry of a chemical nature.

These fourth grade inspectors act under the direction of the Chief Inspector, but also form, with the Chief Inspector and the Commissioner, a Division of Sanitation and Hygiene, of which the Chief Medical Inspector is Chairman.

The Bureau of Inspection proper has, as its first duty, under the direction and supervision of the Commissioner, the enforcement of the law. In Pennsylvania the laws relating to safety, health, and employment will be enforced as fully as possible. It is the duty of the Bureau of Inspection to co-operate with industries, and all who can be of service in reducing loss of life or sickness. Its third duty—and I am not sure whether I ought not to reverse these—the third duty is to act as an educational center, as Dr. Neile suggested. That is, the whole force of inspectors are expected to teach methods of reducing accidents and sickness in industrial work.

The Division of Sanitation and Hygiene, which is closely connected with the Bureau of Inspection, is required to make investigations for the benefit of labor and industry—investigations of the Industrial Board are likely to be concerning special cases that arise, as I conceive it, but the Division of Hygiene and Sanitation takes up and carries on extended investigations to help the Bureau of Inspection in developing efficient methods; formulates methods for accident prevention; studies the effect of labor conditions on morals and health of employees; publishes bulletins; and brings to the people, in every way possible, useful information.

The Bureau of Statistics and Information is endeavoring to do just what Dr. Neill suggests, namely, as far as possible, to gather comparative statistics with regard to accidents, etc., tabulating and using them in such a manner as to show a poorly run establishment how a like one is more efficient and humane, and is by its methods bringing greater profits and welfare to both the employer and em-

ployees. Such activity does not in any way conflict with the work of this Council—the two organizations should be mutually helpful. The Bureau of Statistics must furnish information to the Industrial Board for use in making regulations; collect and tabulate industrial statistics in the most useful way possible; be a center of information to serve the industry—a bureau to which any one can turn for aid.

The office of the Chief Clerk handles the Department finances and performs such other duties as the Commissioner may designate.

Certain groups of laws the Department is delegated to enforce—not to enforce necessarily by having people fined and put in prison, although that has to be done now and then, but rather by teaching the people why they should be obeyed; thus getting them complied with in the proper spirit and contentedly.

There is a group of safety laws for properly guarding machinery —making machinery safe. We have fire prevention laws, the enforcement of which saves not only life, but makes an enormous saving in property. We have the steam boiler laws. Every person employing labor, except the farmers and those having domestic servants, must report all accidents to their employees at once. There are the hygienic laws requiring proper toilets, wash-rooms, rest rooms, seats for women, (one for every three women), and cleanliness—conditions which will permit labor and health to go hand in hand. There are the labor laws. No child under fourteen is allowed to work for wage; those under sixteen must have school certificates; those under eighteen are not permitted to work in hazardous industries, etc.

This winter a law regulating the conditions and hours of woman's labor was passed. A radical new law of this character develops many difficult situations. Thus, here is a girl, living in a small hamlet, out in rural Pennsylvania. She is the night telephone operator. She works not over ten hours per day, not more than fifty-four hours a week, nor more than six days consecutively, which is in accord with the law. But, by the terms of the new law, she must also have time off for lunch after six hours' labor. She has a cot in the exchange, and she sleeps most of the night; she answers during the night maybe a dozen calls, or less. It would be hardship to her to wake her up and make her take time off for her lunch, as

the law demands, after six hours' continuous duty. It would be a hardship to wake another girl up, and make her dress and come into the exchange to serve an hour while the other girl was getting her lunch. It would be a hardship on the telephone company to require any such condition. I speak of this case, gentlemen, because a great many of you have been interested in drawing up women's labor laws. Some of you have something to do with creating the Pennsylvania Industrial Board, and bestowed upon it the power, with reference to accidents and health, to make regulations for applying of existing laws. It would be wise, when your State enacts child and woman labor laws, that some suitable Board should have power to make modifications therein for special cases. Then the telephone girl referred to and others like her, could be relieved from unnecessary hardship without injuring the proper operation and purpose of the laws. The new woman's labor law will be a great benefit to Pennsylvania, but its short life has shown clearly the desirability of the suggestion that it be enforced by a discretionary power.

I have left the Bureau of Mediation and Arbitration to the last, as it is, in some respects, further away from the rest of the Department organization than any other component part. The law creating the Department of Labor and Industry states that there shall be a Bureau of Mediation and Arbitration in connection therewith; the chief or a deputy shall go to the place where there are troubles—labor troubles—and he shall try to adjust the differences through mediation. If he fails in this he may then explain, to the people concerned in the trouble, the method of arbitration which the law establishes. This consists in the appointment of one man from each side, who shall appoint a third, or if they fail to agree, the third man automatically becomes the representative of the Department of Labor and Industry. After arbitration is accepted by both parties, its findings are binding.

Just as soon as this Department was created, we began to get applications asking us to go to this town and that town with reference to labor troubles. We are deep in such work now. We hoped to stay out of the Mediation and Arbitration service until we got the other branches of the Department under way, and then enter this delicate phase of our work very gradually, but we were forced deeply into it at the start. However, I do not believe we have

done any serious harm yet. (Laughter.) We have done some good. We have settled several strikes and prevented others from materializing. The Department belief is, that, like war, which is said to prevent war because of the fear of war—a logic which results in terrible economic waste—strikes may, by fear, cause the manufacturer not to be oppressive, and on account of the hardship may prevent labor from using them as a weapon; yet strikes are relics of barbarism, which our children will class among other crude and savage actions, and they will not be able to understand why we ever permitted them or ever used them for settling controversies between labor and capital.

In by-gone days when we were savages, we as individuals fought for our wives and children, we destroyed property and we destroyed people. Later we formed into clans and did the same destructive work as clans. Then we became principalities and were continually engaged in bloody wars. As civilization advanced and nations formed, the fighting continued, on a continuously increasing and more destructive scale. In the present age to the terrific wars is also added the almost unbearable burden of military armaments in times of peace. Strikes are of the same genus as wars. As civilization advances there are signs that war will be eliminated by some process of international mediation and arbitration, or possibly by the creation of international laws with the necessary legislative, executive and judicial machinery. In like manner it seems probable that strikes may be eliminated through the development of peaceable methods of obtaining industrial justice for employee and employer. Thus, I have an idea that the manufacturers' associations and the labor unions may become at length so efficient, perfect, and responsible to the people, through growth of just ideals and legislation, that the terrific waste and suffering of the strike will be entirely wiped out. I used the words "terrific waste" advisedly. We have the enormous and useless fire waste, the terrible human waste through unnecessary sickness and accidents, the waste of natural resources, the waste of labor through ignorance and inefficiency, but looming very large among these is the almost incalculable waste due to labor differences. These wastes can largely be stopped and wiped out—the latter by orderly civil method.

I scarcely have a right to hope, while Pennsylvania's Commissioner of Labor and Industry, that such a solution of labor differ-

ences will be wholly consummated, but for the reason that the Legislature and Governor placed the Bureau of Mediation and Arbitration in my Department, I shall do my best to forward the move.

Before ending the discussion of this newly created Pennsylvania Executive Department, permit me to say that the speaker has gathered together under the advice and with the approval of Governor John K. Tener, a number of experts to direct several divisions of the work, who, by reason of high character and expert knowledge and experience should be capable of producing useful results. Among these are Lew R. Palmer, Chief Inspector; Dr. John C. Price, Chief Medical Inspector; Alfred R. Houck, Chief of the Bureau of Statistics; Richard M. Pennock, Mechanical Engineer, and expert on heating and ventilation; John H. Walker, Civil Engineer and fire prevention expert; John S. Spicer, Chemist and expert in poisonous gases; Willis I. Fleming, Assistant Chief of the Bureau of Statistics; James A. Steese, Chief Clerk; Drs. W. H. Blakeslee and Elizabeth Brinker, Medical Inspectors; Jacob Leighter and Francis Neehan, Supervising Inspectors, and the Industrial Board, composed of (in addition to the Commissioner) James C. Cronin, representing the employees; Mrs. Samuel Semple, representing the women; George N. McCandless, representing the employers, and George S. Comstock, an industrial expert.

In closing permit me to say that we have found it necessary to get our inspectors, manufacturers, employees, and others together to study the Pennsylvania law, to learn something about this whole project of how to reduce the enormous losses in the Commonwealth; so, almost at the inception of the Department, a conference was called at Harrisburg to be held on October 28, 29 and 30, under the auspices of the Engineers' Society of Pennsylvania. I presume there will then be a large gathering of people interested in the Pennsylvania industries, both directly and indirectly. I believe it is going to be worth while, and I am authorized to invite you, not only to attend yourselves, to take part and help on this good work for humanity and for the prosperity of the industries. but also to bring it to the attention of others.

As I said before, I am much honored in being with you, and I am very happy to be among so many earnest, enthusiastic men. It will be a comfort to have your support and a pleasure to work with you. (Applause.)

The CHAIRMAN: Dr. Andrews of the American Association for Labor Legislation has been concerned with the pioneer work which has been done in relation to the betterment of industrial conditions, and we are very glad to have him here and to have from him his opinion as to what this association ought to do; Dr. Andrews of the American Association for Labor Legislation. (Applause.)

Dr. JOHN B. ANDREWS: Mr. Chairman and Gentlemen: The Program Committee has asked me to speak particularly about occupational diseases, and as my time is limited to five minutes, it will be possible for me merely to suggest a few of the most important phases of the subject.

Popular interest in industrial *accidents* is largely a development of the past five years. During that time national conferences have been held, safety committees have been organized, factory inspection departments have been re-formed, workmen's compensation laws have been passed by twenty-two states and by the Federal government. All of this within the last five years. We move rapidly in America when once under way.

A little later, but also remarkable in its development, there has grown up a somewhat similar interest in *occupational diseases.* National conferences, state commissions, and legislative campaigns have called attention to occupational diseases as to a *new* problem. Investigations have made familiar to all of us such typical trade maladies as lead colic, the brass founders' ague, the match workers' phossy jaw, the potters' rot, the hatters' shakes, the boiler makers' deafness, the miners' asthma, the compressed air workers' bends. These are merely suggestive. We now know that practically every calling contributes its own special malady to the long list of work diseases. And we all recognize the appalling loss of human life due to that most common of all industrial diseases, tuberculosis.

In discussing accidents in coal mines before your safety congress last year in Milwaukee, Dr. Holmes complained that it is the occasional mine explosion that receives attention, while the steady daily toll of accidental injury and death—many times as important in the year's total—is scarcely recognized. So it is with industrial *diseases.* Because more easily recognized the striking manifestations of occupational disease are first to receive popular attention. But these spectacular effects are trivial compared with the gradual lowering of vitality caused by the daily breathing of impure air and by continual over-strain.

The principal health risks in industry are classified according to their nature as: (1) Specific industrial dusts, fumes, gases, vapors and acids (poisonous and non-poisonous); (2) Harmful bacteria and micro-organisms; (3) Compressed or rarified atmospheres; (4) Improper lighting; (5) Extremes of temperature; and (6) Excessive strain.

If we consider merely those diseases due to industrial poisons, we find already published by the Federal Bureau of Labor a carefully analyzed list of fifty-five, one of which alone (lead) is in daily use in more than 150 trades. The first state medical inspection of factories in Illinois resulted in the removal from a single establishment of sixty workmen who had become "leaded." The Federal Bureau of Labor reports upon a white lead factory employing only 170 men, but recording sixty cases of plumbism during the year.

Under a special appropriation of the Ohio Legislature the Board of Health in that state is now making a survey of occupational diseases. Dr. Hayhurst announces that of eighty-two women telephone and telegraph operators who died in Ohio in 1911, forty-three per cent died from tuberculosis at the average age of only 28.8 years.

German sickness society records for a period of eighteen years show that while barbers have a rate of only 365 days of sickness per hundred members per year, iron founders and machinists present an experience of 1,189 days of sickness per hundred members per year; polishers and metal grinders 1,215 days, and iron and steel mill workers 1,256 days.

Conservative authorities have estimated that from sickness alone among our industrially employed in the United States, our mere money loss each year is nearly three-quarters of a billion dollars. These experts further declare that with our present scientific knowledge, at least one-fourth of this annual economic loss (approximately $200,000,000) can be prevented.

You remember with what conscious pride we recently hailed the statement that owing to the efforts of science the average life of the individual is being prolonged. But our authorities on vital statistcs now tells us that while it is true that infant mortality is being reduced, while it is true that scientists are now dealing more successfully with those diseases which formerly carried off the young, that nevertheless the mortality among men of middle age

and older, is actually *increasing*. The death rate of the group from 45-54 years of age increased 1.9 per cent, and the group from 55-64 years increased 6.92 per cent during the decade 1900-1910. This same tendency is recorded in the reports of the United States census. Obviously something is wrong, and there is reason to believe that the principal cause of this sacrifice of human life is the condition under which men work. There, in that group, are our skilled workers, experienced at the trade, capable of producing at high speed—for a time. But under the stress of their work they are failing to keep the pace.

We hear much about neurasthenia among society leaders, and the increasing pilgrimage to "take the waters" at Karlsbad and Baden Baden. But those victims of fast living—of the highball and the joy ride—are as *dust in the balance* compared with the worn-out and diseased in the great host of industrial workers. These obscure ones—the unnumbered thousands who weaken and die yearly because of unsanitary conditions of employment and strain of overwork—are much more worthy of national attention.

Industrial *accidents* are now happily receiving careful study. Accidents which are preventable, will be prevented. Economic interest and public sentiment both demand it. And the injured workman will be compensated finally by a system of insurance that will insure *for* the injured workmen instead of *against* him. But I wish to urge you to consider a problem, less appreciated at present, but even more important to the efficiency of the worker and to society as a whole—the problem of safeguarding the workers against unhealthful conditions of employment.

This work should be seriously undertaken by employers and workmen in their own establishments. Committees on sanitation should be formed. Sickness benefit systems should be established. The fullest co-operation should be given to factory inspectors in order that the establishment of the backward and short-sighted employer may be brought up to the standard fixed for that industry.

Well-meaning manufacturers have sometimes protested that legislation for the protection of labor has been over-done. But such legislation has *not* been over-done. On the contrary, the trouble has been that much legislation in the past was drafted without intelligent co-operation, and as a result it frequently was *under*-done

—the consequence of "half-baked" proposals. In recent years more attention is given to the proper drafting of legislation, and the co-operation of all interested groups is invited.

It is fortunate that the average intelligent, thoughtful American employer believes in keeping a little in advance of remedial legislation. But we all know that as long as the less progressive employer exists to pull back and oppose every movement for the promotion of the comfort, safety, health and industrial efficiency of the workers, we must expect as a matter of decency and humanity to use the strong arm of the government.

Gradually, and surely, but almost without realizing it, we have passed within the last few years into a new period of American history. Recent court decisions clearly indicate that protective labor legislation will be sustained as a legitimate exercise of the police power when it is made apparent that conditions justify such interference on the grounds of health. Only through careful study and intelligent co-operation can we secure information which will finally enable us to establish scientific standards.

While such researches are under way, we should remember that (1) all preventable occupational diseases must be prevented; (2) those occupational diseases which we do not yet know how to prevent must be reduced to a minimum; and finally (3) the victims of occupational disease as well as those injured by industrial accidents, must be compensated for their injuries by some just system of insurance. (Applause.)

The CHAIRMAN: We would like to hear briefly from Mr. Jasper Yeates Brinton, Assistant United States Attorney, Philadelphia, and President of the Pennsylvania Child Labor Association. (Applause.)

Mr. JASPER YEATES BRINTON: Mr. Chairman, Ladies and Gentlemen: I must protest against the too generous tribute of that always generous man, Mr. Jackson, in describing my services in the creation of our new Department of Labor in Pennsylvania.

When our governor invited me, as President of the Pennsylvania Child Labor Association, to submit a draft of a bill to create a de-

partment of labor in Pennsylvania, I must confess that I was somewhat nonplussed, as well as complimented, for we were already over-burdened with the demands of a very active child labor campaign, and at first I did not know exactly in which direction to turn, or indeed where to possibly find the time to carry out this large, but very interesting and important order. But soon I decided that the best thing to do was to turn in *every* direction, and to beg, borrow and steal every idea which I could find, from every state which had made a successful experiment in this same field of public work. So we got after Ohio, Massachusetts and Wisconsin and finally New York, adopting everything in sight which seemed workable in Pennsylvania. And here let me pay a most sincere tribute to the magnificent work of the Factory Investigating Inspection of New York and say, that when all our preliminary work was done and the net results were counted, the conclusion that we reached was that we could do nothing better than follow in Pennsylvania the main idea that had been so carefully worked out in New York. Of course, it had to be adapted in many ways to the conditions of Pennsylvania, but the outline is the same, and personally it is very gratifying to me to feel that we in Pennsylvania are, in effect, going forward hand-in-hand with New York, trying out our system together and working out the same problem side by side with our neighbors here, who gave us such valuable help and such more than willing co-operation.

As I feel that your Chairman means what he says when he tells us we must limit our discussions to five minutes each, I have just one idea that I will try to leave with you.

For several years I have had the honor of being an Assistant United States Attorney in Philadelphia. As such it has been my privilege to come in very close touch with the Federal administrative system and to study at first hand its remarkable extension during the past ten years. The lessons there learned have been of great interest to me in the matter of this new state experiment. The inauguration of our Labor Department in Pennsylvania is merely one, but at the same time a very characteristic, illustration of the present trend of development or administrative power throughout the country; indeed, I think I may say that the power granted to the Industrial Board of Pennsylvania and New York and the other

states, mark probably the furthest and also the most valuable extension of administrative power that has yet been developed in this country under a system of constitutional state government which practically everywhere demands that the legislative, executive and judicial powers shall be separate and independent. Now the legislative power is the power to make rules of conduct which shall govern the individual, and be enforced by penalties, and it is only very recently that, in the interest of efficient government, the courts have recognized very broadly the power of the Legislature to establish general standards of conduct and to leave to administrative bodies what has been happily called by a very great judge the duty of "filling in the details." In other words, in these new acts, the Legislature, recognizing the utter impossibility of establishing detailed regulations applying to the one thousand and one varying conditions of industrial life, has been satisfied with laying down a broad standard of reasonable protection for the life, health, safety and morals of industrial workers and has left it to the industrial boards to work out the details of protection as applied to cases as they arise.

Now the point which I would make is this. The new and grave responsibilities thus imposed upon a department must, of necessity, raise its entire administrative force to a position of new importance in the state. And yet, under our present system, and under the best conditions that may be reasonably hoped for, for a long time to come, this force will be far from equal to the gigantic task imposed upon it. And to help make it constantly *more* adequate, more efficient, should and must be a serious responsibility resting upon you, who are leaders of public opinion in these matters, no less than upon the officers of the state itself. It must be made part of your work to see that the state secures the services of the best men to be had, and then, that these best men, are constantly helped and encouraged, by *you* to become better men. For, after all, it is upon the character and efficiency of the lowest rank of regular inspectors— the $1,500 men—that the real welfare of the worker will depend—and not upon the Commissioner, or upon the courts who may be called on to settle disputes that may arise long after the damage has been done. The difference between an efficient inspector whose eye is trained to travel instantly to the slightest point of danger, and the untrained

political appointee, is sure to be returned to the State, more I believe than in the case of any other of its servants, in terms of bodily pain and suffering to injured workers, and of sorrow and often destitution. But it is idle to suppose that because a Commissioner, or even a Governor is clothed with certain powers of appointment, he does not need and is not entitled to the constant support of bodies like yourself in the matter of the appointment and retention of good officials. For remember, that under our system, which will be slow to change, there is certain to be constant pressure and strong pressure from every corner of a state, in favor of the appointment of men not really competent, and unless you help to offset this pressure by taking vigilant and active interest in securing and retaining good men, from top to bottom of the service, politics is bound to reduce, and sadly reduce, the efficiency of the best intentioned administration.

But more than this, your duty, your privilege will not end with doing your part to secure the appointment of good men. You must help them to become better and more efficient men, after they have been appointed. Have them at your conventions; let them come to your informal meetings; discuss with them your problems; make some sacrifice to take an intelligent and helpful interest in their work; devise ways—and there will be many ways—to bring them in touch with the progress that is represented in this very congress.

As a great English critic recently observed, the intellectual life of the government official is becoming part of a problem which every year touches us more closely. Indeed, it is a problem which touches you quite as much as, even more than, the problem of securing good laws. For without good men to enforce them, the best of laws are idle, and no man, however well intentioned he may be, is able under our present system of government to organize or maintain an efficient administration, without the sympathetic, helpful support of the leaders of public opinion like yourselves. And after all, it is public opinion which rules in the end.

CHAIRMAN CHANEY: I have a telegram from Mr. Frederick L. Hoffman, of the Prudential Life Insurance Company, who was scheduled to speak, that he could not be here before 12:30, and I feel it is desirable to adjourn this session now. We shall

hope, if Mr. Hoffman reaches the city, that we can hear him in connection with the afternoon session. I wish to announce, for the benefit of those who are interested in the Round Table tomorrow, that Mr. Richards of the Northwestern Railroad, the Dean of safety work on our American railroads, is fourtunately able to be present, and will be at the Round Table tomorrow. I also wish to say that the management would be very gratified if the arrangements with reference to the dinner this evening should all be perfected as early as possible. The meeting will now stand adjourned until two o'clock.

(Whereupon, at 12:45 a recess was taken until 2 o'clock P. M. of the same day, Wednesday, September 24, 1913.)

CHAIRMAN CHANEY: Mr. David S. Beyer, of the Massachusetts Employees Insurance Association, is connected with this development in another way. We will now take pleasure in hearing from Mr. Beyer.

MR. DAVID S. BEYER: I have been asked to say something about one phase of the safety movement, and I will try to tell you very briefly something of the results which have been secured by the Workmen's Compensation Act in Massachusetts.

Dr. Neill has mentioned the thought and attention that are given to items which affect the cost of production; anything that is a serious item of cost in a plant is sure to receive careful study, and the very best skill available will be brought to bear to reduce that cost.

One of the first effects of the various Compensation Acts that have been passed in the last few years, is a large increase in the cost of accident insurance. Take for example, one of the important Massachusetts industries, "Boots and Shoes"; the insurance rate for this industry used to be fifteen cents per $100 of payroll, but immediately after the Compensation Act was passed, it jumped to eighty cents. In other industries there were corresponding increases.

You may be sure that when a concern has been paying (as in one actual case) $700 a year for it compensation insurance, and the premium is increased, at one stroke, to $10,000, it becomes a very important matter to that concern; this increased cost has

been one of the stimulating influences that have emanated from the new Compensation Acts, through the incentive it offers to reduce this cost by preventing the accidents.

In Massachusetts this problem is being satisfactorily worked out, and one phase of it was taken up in a somewhat different way from that followed by any of the other states, so far as I know; in this I refer to the provision in the Act for the creation of a mutual insurance organization.

This organization, known as the "Massachusetts Employees Insurance Association," was organized by the State, but it is now entirely independent, being on the same footing, in this respect, as any other insurance company doing business in the State.

At present it contains about 800 separate concerns in its memberships, representing approximately 100,000 employees; during the past year about 1,600 inspections were made, and some 5,000 or 6,000 safety recommendations submitted to subscribers.

In this connection, I would like to call particular attention to the high degree of efficiency secured under this plan; over *ninety-seven per cent* of all the several thousand safety recommendations which have been made by this Association, have been accepted by its subscribers, and have been, or are being carried out by them. There are several reasons for this.

In the first place I think the recommendations were all reasonable and based upon good practice and practical experience; they were reinforced by many statistics and examples by means of which it is possible to bring home to a right-minded man the desirability of safety work. In order to make the recommendations clear, we prepared a Safety Handbook, containing much information on safety matters, including drawings, photographs and specifications, etc.

But there is another feature, in which an organization of this sort has a pre-eminent advantage, and that is its principle of mutuality. This principle as applied to fire insurance by the New England Mutuals, has worked out a reduction in fire loss to about one-tenth what it was formerly; from forty odd cents this loss has come down to about four or five cents per $100 of insurance.

The Mutual principle is unique in the strong appeal it makes to the controlling impulse of each individual. You can approach any man, either on his humanitarian side, or from the side of his

selfish interest, and a mutual association, which can show that each employer gets the direct benefit of every accident prevented, appeals to both of these instincts.

I think the Massachusetts Act has worked out very successfully in this respect, and I believe the best standard by which to judge any Compensation Act is its effect in reducing accidents. That is the most important consideration from every standpoint, and any other arrangement is putting the cart before the horse.

I might illustrate this by a story I once heard about a famous bear hunter, who had difficulty in getting dogs sufficiently large and savage for his purpose. He finally heard of the Russian Wolf hounds, and, at considerable expense, sent abroad and secured a couple of these hounds.

The first time he took them out to try them, they started a bear, after a little skirmish, and the hounds set off in pursuit. The hunter tried to keep up as closeely as he could, but he noticed that the course of the chase changed several times; finally he came to a woodchopper, whom he asked if he had seen a bear and a couple of dogs go by. The man said he had. The hunter asked, "How are the dogs doing?" The woodchopper replied, "Oh, they are doing fine; in fact, they are a little ahead of the bear." (Laughter.)

The Massachusetts Employees Insurance Association is trying to keep the order as it should be, namely, "Safety First." Incidentally, one of the results of this Association has been to return a dividend of approximately thirty per cent of the year's premiums to it subscribers, although these premiums were initially lower than those charged by the stock companies. (Applause.)

DIVISIONAL SESSION.

SEPTEMBER 24, 1913, 2 P. M.

Chairman MCCLEARY: The meeting will please come to order. The first matter on the afternoon's program is a paper on "Safety as Promoted by Federal Bureaus," by Dr. Lucian W. Chaney of the Department of Labor of the United States.

Dr. LUCIAN W. CHANEY: The idea of these divisional reports is that they should cover, as briefly and as clearly as possible, the items with which the organization represented has been occupied during the period since our last congress.

I have gone outside of that a little in this paper, because there are some things which have been done by Bureau of Labor Statistics which have never been stated in public. Practically this is an outline of what the bureau has been doing since our last congress.

You will notice on the program it is stated I am to report for the Federal bureaus. There are two very good reasons why I do not do that. In the first place, I was assigned so recently to that feature of the program that I have had no time to acquaint myself with what other bureaus concerned in safety were doing, and, in the second place, it would hardly seem to me to be entirely appropriate for one bureau to be reporting on what another was doing, and so I have confined myself to the doings of the Bureau of Labor Statistics, which until very recently has been the Bureau of Labor.

I find that it is not generally known that the Bureau of Labor Statistics has been responsible for the operation of the Federal compensation law. While the original law was very imperfect, as no one knows better than those charged with its administration, the experience has been valuable and the report issued contributes important information regarding some vexed questions.

The Bureau is endeavoring to break ground in the national study not only of industrial accidents, but of other phases of the broader topic of industrial hygiene. The first result of this effort may be said to be the brief study of cotton mill accidents which appeared in the volume on the cotton textile industry of the series on Women and Children in Industry. In the same report there is some

discussion of mill hygiene. This was followed by a volume of the same series on Employment of Women in the Metal Trades. This was very largely a study of accidents and hazards among those so employed. This volume has two features not brought out in anything hitherto published in this country. First it shows quite conclusively that when employed in similar tasks the accident rate of women appears to be higher than for men. Second it contains the first assembly of accidents by hour of occurrence of sufficient volume to be somewhat authoritative. This tabulation shows a higher rate in forenoon than afternoon and speaks of accident occurrence near the middle of each working period.

The series on Condition of Woman and Child Wage Earners also includes a volume on Causes of Death Among Cotton Mill Operatives. This is an important contribution to the question of the real effect of mill occupation upon the health of the workers when measured by the duration of life. It appears from this study that some very definite safeguards must be devised unless we are willing that serious deterioration shall occur in the human stock utilized in industrial enterprises.

By co-operation between the bureau and Dr. John B. Andrews of the American Association for Labor Legislation, a report was gotten out relating to phosphorus poisoning in the manufacture of matches. This report was a factor in securing legislation which will put an end to such poisoning in our American factories.

Bulletin No. 104 is Dr. Alice Hamilton's study of lead poisoning in potteries, tile works and porcelain enameled sanitary ware factories. Before Dr. Hamilton's work for the Illinois Industrial Commission there was a very complaisant feeling that lead poisoning was not of much importance in America. A rather rude awakening followed her initial investigation. The shock was intensified by the publication of this bulletin.

Bulletin No. 120, also by Dr. Hamilton, discusses the Hygiene of the Painters Trade. It brings out a number of points not hitherto satisfactorily determined. For example, the different salts of lead used in paints are shown to have quite different degrees of poisonous quality. It also emphasizes the influence of the volatile solvents used and indicates certain necessary limitations which must be applied in the use of leadless paints.

I will say that leadless paints for interior work have long been possible, and I think it will ultimately be required that lead shall not be used in the painting of interior work, but the solvents which are with the lead and with the leadless paint are perhaps as serious a menace to the painter almost as the lead itself, so there are some other things which need to be done in regard to painters who do interior painting and decorative work.

Bulletin No. 127, not yet issued, deals with the problem of Dusts and Fumes.

Since this Congress is particularly interested in accident prevention, I may pass the items mentioned above in this rather summary fashion and take most of my allotted time to outline what the Department has done and is doing toward that specific object.

While Vol. IV. of the Iron and Steel series bears a date prior to our first congress, it was not offered to the public for some months thereafter. Since this report represents a large part of the work which I have done for the Bureau, I am naturally both familiar with it and interested in it. I shall, therefore, at the risk of appearing to give undue attention to my own work, outline the contents of this report as fully as my time permits.

The report represents the present ideas of the Bureau regarding what an accident report should contain and the method of its presentation. The Bureau will welcome the most searching criticism from those interested to the end that future work along similar lines may be improved.

Some months before the investigation began whose results are embodied in the Iron and Steel series, I was given to understand that it was impending and that the accident phase would be assigned to me. I undertook a study of accident reports, foreign and domestic, with a view to familiarizing myself with their form and content.

I very soon reached the conclusion that the only material of the kind in existence which made a reasonably satisfactory study possible was that of the German Imperial Insurance Office.

I may say that in the German reports, however, the disabilities under thirteen weeks are not included in accident reports, and are not recorded as accidents, but are treated by the sickness societies. Very meagre material is available in regard to the results shown by these sickness societies, so that if a man is injured, and is not laid

off for over thirteen weeks, he does not appear in the German Accident records at all. It seems to me, therefore, exceedingly desirable that somewhere there should be a study of those cases of accidents which involve a loss of time less than thirteen weeks, and we have tried to cover that ground.

The German statistics present for a considerable period of years the relation of the amount of exposure to the accidents associated with it. Obviously it is of little significance to record the facts that one establishment has fifty accidents while another has 500, if we do not, at the same time, consider both the number employed and the amount of time during which they were at work.

Many difficulties were encountered in the effort to assemble data which would make it possible to determine with reasonable accuracy the amount of exposure and so prepare rates by which the relative hazard of different departments might be judged, and the degree of progress from year to year indicated. How successful the report is in accomplishing these purposes must be left to the judgment of interested users.

The main questions which it seemed desirable to answer, if possible, by a study of the accident experience of the Iron and Steel Industry were these: (1) What was the condition at the time of undertaking the investigation? (2) What does experience show regarding the direction in which rates are tending over a series of years? (3) What methods are applicable in the effort to control accident occurrence? (4) For accidents which are not or cannot be prevented, what relief measures are in use or can be recommended?

With these questions the successive chapters of the report deal as fully as the material available permitted.

Several factors determine the group of accidents which should be taken into consideration.

1. No existing discussion treats with any considerable fullness the shorter periods of disability. It appears very desirable to compile the facts which would show with some exactness the amount of economic burden left upon the workman by different systems of compensation which involve no payments during certain specified periods.

No system of compensation at all widely in vogue proposes to pay the workman for the earlier days of his disability. There are

some exceptions to that rule, but it is very general, and the question of what economic burden is being left upon that man by not paying him for these earlier days of his disabilty, was one that has seemed to me very desirable to determine. I may say we found that forty and fifty per cent of the accident cases involving a disability of one day or more terminated in the first week. This approximately fifty per cent of accidents involved about ten per cent of all the losses of time, so that here is ten per cent of the loss accruing to the workman, left upon his shoulders by the very commonly accepted limitations as to when his compensation shall begin.

2. The various disabilities omitted from consideration such as, one day, one week, etc., were apparently determined by the supposed convenience of the office receiving the reports and not with reference to the probability of receiving accurate returns. In the case of injuries which should have some attention, but which do not incapacitate for a material period—what I have called non-disabling accidents—available returns are of such uncertain character as to be practically worthless except in selected establishments where they are known to be accurately kept.

To illustrate that, one large steel corporation was supposedly getting a record of all their accidents. That was their rule, to report all accidents. They adopted rather more stringent measures, and they doubled the cases in their emergency rooms in a single year. That meant of these non-disabling accidents, more than half of them were not being recorded under the system which they had in vogue prior to this special attempt. Because of that uncertainty with regard to these minor accidents, they have extremely small statistical value except in selected establishments, where they are known to be accurately kept.

Such accidents require careful attention, but are of small economic importance. Inquiry developed that if a man was absent from work on account of an accident some record of the fact was almost certain to be kept by the employer. In very many cases the length of disability was very imperfectly known. The result was that the attempt to establish any point of division such as three days, one week, etc., resulted in confusion and uncertainty.

It was determined, therefor, to consider in this report deaths, permanent injuries, and temporary disabilities of one day or more.

Careful study convinced the bureau that these items are essential to the complete determination of accident conditions and furthermore that they can be obtained with greater accuracy than is the case when arbitrary omissions of disabilities of various durations are attempted.

I may say, therefore, that the report attempts both a more comprehensive and a more exact treatment than has hitherto been undertaken of the accident data of any particular industry. It is comprehensive in its national extent and the classes of injuries with which it deals. It is exact, so far as exactness is possible, in its attempt to determine rates by which relative hazard may be judged.

The natural question of any manufacturer really desirous of studying his own condition is "How do I stand?" The readiest answer to such a question is derived from tables which classify plants and departments into three groups designated by the letters A, B and C. If he treats his own accidents as they are treated in the report the rates derived will at once indicate the class into which his own establishment falls. He can also judge the degree to which his principal departments approximate the average of the departments belonging to the several classes. The classes designated by the respective letters are A, well-developed safety system; B, system in process of development; C, system not developed.

For a concrete and readily apprehended showing of accident prevention the graphics on pages 118 and 171 may be particularly mentioned.

As a whole the report shows that in 1910 there still remained spots in the Iron and Steel Industry which were most seriously unsatisfactory but that in the industry generally constructive effort toward accident prevention had been applied with most gratifying results.

The above presents a brief resume of the direct contributions of the Department of Labor to the safety movement during the year since the last Congress.

In the remaining moments I will indicate the steps which the Department is taking looking toward the future. This must be done with those reservations which both custom and good policy throw around official work of this kind while it is still in progress.

About the time of the last Congress a study was begun of the machine-building industry. It is planned to cover in this inquiry: First, prime movers; second, electric generators, motors and apparatus; third, cranes, electric and locomotive; fourth, blast furnace, steel works and rolling-mill machinery; fifth, power transmission and conveying machinery; sixth, machine tools and other metal-working machines. It will be observed that this group of manufacturers uses a very large portion of the product of the steel mills, which have been already studied. It is here that we must look for those changes in design and construction which will in the future greatly simplify the work of the safety man. Field work for this study has been going on intermittently during the year and a very promising body of material is already in hand.

Besides this new study, arrangements have been made to secure from year to year data from the Iron and Steel Industry, which will make it possible to issue supplementary reports from time to time, and some years from now to present the entire subject again in the light of larger experience.

CHAIRMAN MCCLEARY: The nation has been heard from, and the great State of Wisconsin will now be heard from in the person of Mr. C. W. Price of the Wisconsin Industrial Commission, whose topic is "Safety as Insured by State Bureaus." (Applause.)

Mr. C. W. PRICE: Mr. Chairman, Ladies and Gentlemen:

At the 1912 Safety Congress, held in Milwaukee, I read a report covering the work of the Industrial Commission of Wisconsin along the line of promoting safety and sanitation. In this report I outlined the plan which has been adopted, of working out cooperatively with the manufacturers and the labor interests the orders or laws governing conditions in places of employment and the educational campaign which has been carried on for the purpose of placing in the hands of manufacturers the best experience in safety and sanitation which could be gathered from the manufacturers in various parts of the United States who have done successful work.

In view of the fact that this experiment in Wisconsin marks a very radical departure from the practice which has prevailed in other states, I hope that I may be pardoned if I devote a large part

of this brief paper to a further statement of the development of the work in Wisconsin during the past year.

The committees, composed of representatives of the manufacturers and the Federation of Labor, have already drafted orders covering practically all of the points on sanitation, elevators, laundries and bakeries, and also orders covering the primary points of saftey which embody about 90 per cent of the hazard.

A complete set of orders covering boilers and boiler inspection has been drafted by a committee on boilers, and within a few days will be issued by the commission. The committee on orders covering safety in electricity has practically completed its work and these orders will be issued by the commission within the next two months.

The orders which have been drafted by these committees of practical shop men have in every case been accepted by the Industrial Commission and issued as orders with the authority of laws. I am glad to report that the orders thus far issued by the commission have been very favorably received by the manufacturers; first, because the manufacturers appreciate the fact that the standards were drafted by experienced shop men, and second because the orders embody a high standard which, if carried out, will guarantee safety. Take, for instance, the orders on elevators, which cover practically every point of safety, these orders place in the hands of the manufacture for the first time information which enables him to purchase an elevator which he knows to be safe. Since the orders were issued it has been the general practice of manufacturers to specify in the contract with the elevator companies that the elevator must conform to the standards of the commission and must pass inspection before it is paid for. The effect of the elevator orders has been immediate and far-reaching and has resulted in making practically every new installation, safe. The work of bringing old elevators up to standard, and the work of installing new elevators, has progressed so rapidly that the commission has been compelled to grant many extensions of time because the elevator companies were not able to do the work.

The first year's work of the commission was devoted largely to the drafting of standards and the placing of information in the hands of manufacturers regarding the most practical types of safe-

guards. The latter was accomplished through exhibits of photographs which were shown in the various towns of the state, meetings of superintendents and foremen, bulletins which are issued each month, and instruction by deputy inspectors. The recent reports of the deputies indicate that the majority of manufacturers are now fairly familiar with the most efficient types of guards covering the points of danger in their respective plants, and are convinced of the practicability of installing these guards.

The work of building guards is going forward as rapidly as can be reasonably expected. The statistical department of the commission reports that the records for the months of April, May, June and July, show a reduction in the total machine accidents in Wisconsin of about 26 per cent as compared with the corresponding months of 1912. If these statistics were based upon the number of serious accidents, or the number of days lost, they would doubtless show a much larger percentage of reduction. Commissioner J. D. Beck, who was formerly head of the Labor Department of Wisconsin, states that there have been more safeguards built during the past year than during any previous five years in the history of the state.

The Industrial Commission is now emphasizing the educational side of safety work and is conducting a campaign over the state for the purpose of encouraging the manufacturers to work out a safety organization in their plants. The one point which is being emphasized is that in order to get results in either a small or a large plant the workmen must be given an active part in the promotion of safety. A bulletin on safety organization, including articles by some of the leading safety men of the country, has been issued, and a leaflet entitled "How to Reduce Accidents," which puts in a nut shell the experience of the best companies, has been mailed to 5,000 manufacturers. Copies of this leaflet are attached to each inspection report, which the deputy leaves with the manufacturer, after making his inspection. In each issue of the monthly shop bulletin statistics are given regarding reductions which have been made in various companies, and the point is emphasized that a large percentage of these reductions was accomplished through the co-operation of the workmen.

I am now visiting all of the large manufacturers and am making it a point to meet the president or general manager and place

before him the experience of various companies along the line of safety organization and the co-operation of the workmen. Thus far I have met with the most cordial reception and have found the manufacturers exceedingly interested in learning of the methods which have been found to be efficient. From present indications I should say that within the next year practically all of the large manufacturers of Wisconsin, employing 500 men or more, will have a safety organization somewhat like the organizations in the various plants of the United States Steel Corporation. In meeting the manufacturers and helping them to work out a safety organization the method which we have found most successful has been to first have appointed a central committee composed of the superintendent as chairman, the safety inspector, and three or four high grade men such as the master mechanic, and to thoroughly instruct these men and convince them of the practicability of the plan. The officers then arrange for a meeting—in many cases for a banquet—to which the superintendents, foremen and sub-foremen are invited. The plan of safety organization which has been agreed upon by the officers and by the central committee is presented at this meeting by the president or manager, who presides, and a representative of the Industrial Commission usually speaks and gives an outline of the experience of some of the companies which have made the largest reductions in accidents. The success of these meetings in launching the plan has been most gratifying and has resulted in convincing the superintendents and foremen that safety has now been made a part of the business organization. In every plant where such meetings have been held a new life and interest has suddenly been instilled into the organization along the line of safety. A number of the largest companies in the state have already completed safety organizations and a large number of others have organizations which are under way. In every case we find that with the introduction of a safety organization, composed of committees of foremen and committees of workmen, a new force is introduced into the shop. The officers have put themselves on record in regard to what they propose to do along the line of safety and what they will back with money, and the superintendents, foremen and workmen have been drawn into the organization and have been given a definite responsibility.

We find that once the officers and the employes in a plant are committed to a plan which has been initiated by the officers, the commission has almost a certain guarantee that the work of safety will go forward and that the interest will not lag. So far as my knowledge goes there has not been a company in the United States which has worked out a safety organization as suggested above, which has ever gone back, or in which there has been a tendency to lose interest; but on the contrary there has been an increasing interest and enthusiasm in every case. During the last six months in Wisconsin we have seen a number of large companies, which have introduced a safety organization, suddenly take on new life and acheive the most remarkable results within a short time. The superintendent of one large company told me the other day that he had made a reduction of 50 per cent in accidents during the first three months.

The commission proposes to push vigorously this work of encouraging safety organizations through these meetings in plants and through the personal efforts of the deputies while making their inspections.

In October a safety round table will be organized in Milwaukee, under the auspices of the Merchants and Manufacturers Association, which will include representatives of all of the large manufacturers in that city. It is proposed to conduct a round table each month and thus give the safety inspectors of the various plants an opportunity to exchange ideas and to get into touch with the best experience of manufacturers outside of the state. We find that in many cases the men who have been placed in charge of the safety work are high-grade mechanical men, but men who are not familiar with the details of safety work. It is also probable that similar round tables will be organized in some half dozen of the larger towns of the state. It is the purpose of the commission to suggest in each case that these round tables become local councils of this National Council for Industrial Safety. These local councils will enable the commission to keep in close touch with the work which is being done and to give such assistance as it is able.

A large mass meeting has been arranged for in Milwaukee which will be attended by 7,000 employes of the manufacturers of that city. At this mass meeting it is proposed to have a program

of two hours with moving pictures showing what the workmen can do to protect themselves. If this meeting proves to be as successful as the commission anticipates similar meetings will doubtless be arranged for in other towns. The commission is strongly convinced that there is an enormous field for educational work, which has thus far been untouched, among the rank and file of the laboring men. Our experience in meetings of workmen has revealed the fact that they are not informed in regard to the large percentage of reductions which have actually been made in accidents in some of the large companies in the United States, and they are even less familiar with the experience of these companies which has demonstrated that at least two-thirds of these reductions have been accomplished by active co-operation of the workmen and could not have been accomplished through any effort on the part of the employer or any expenditure of money.

The commission is taking every opportunity which offers to emphasize the part which the workman must do in eliminating danger and in avoiding accidents.

The commission is not only working out co-operatively with business men in the department of safety and sanitation, but it has also adopted this plan in practically all other departments under its charge, including compensation, free employment bureaus, apprenticeships, hours of labor and minimum wage for women and children. In these departments it is co-operating also with the employes, the general public and with the other state departments, as well as the business men. The experience of the Industrial Commissioners during the first two years of their administration, which ended July 1st, has convinced them that this is the next important step to be taken by all state departments in the administration of laws governing conditions in places of employment and relationships between employer and employe. It has been demonstrated that through the representatives of the employers and employes who have served on the various committees, the state has been placed in possession of a large fund of experience which has been worked out in the manufacturing world through years of experience and at great expense, and which, up to recently, has been only partially available for the use of the state; but by far the most important advantage of this plan is that by giving the employers and employes an active part in the work of the com-

mission an entirely new relationship has been established and a degree of co-operation has been secured which before had not been possible. From present indications within the near future compensation laws will have been adopted in practically all of the states. The experience of Wisconsin has demonstrated that a compensation law adds a tremendous incentive for the promotion of safety as a business proposition, and makes it easy for the officers of the state to meet the manufacturers on a common ground in the work of reducing accidents.

I understand that the departments of labor of the states of Ohio, New York and Pennsylvania are planning to adopt the method of working out the standards on safety and sanitation co-operatively with the employers and labor interests.

The one word which I wish to bring to you from Wisconsin is co-operation; co-operation between the state and the employers, and between the employers and employes; co-operation for the saving of life and limb in industry.

Chairman McCLEARY: Mr. Melville W. Mix, President of the Dodge Manufacturing Company, is on the program. He was unavoidably detained, and he has written to Mr. Palmer, the Secretary of the National Council, a letter, which I will read you. (Reading):

"Dear Mr. Palmer:

"I have wired you today that I find it impossible to be with you at the Safety Congress now in session, and to deliver in person a division report in behalf of the Manufacturers' Association. This is a matter of sincere regret, as I have anticipated being with you at this time, and am much disappointed because of my inability to do so.

"I enclose you a brief report, confined more particularly to the point of developing a plan of co-operation between the National Council for Industrial Safety and Manufacturers' associations, as broadly covered by that term. We must have standards, and we must have a method of promulgation. A federation of Manufacturers' associations should be formed, or there should be a forward movement committee organized within this Council which may have for its purpose the standardization of the work and devise means for bringing it forcibly before the individual employers

through the means of either the State or Trades Associations to which they lend their most enthusiastic support.

"Enough has been done up to this time to justify proceeding with the work of standardization, eliminating those things which are found to be unnecessary or impractical, and thus promoting the success of the movement through the adoption of methods that are bound to stand the test of time.

"Will you please convey my regrets to the members in attendance and accept the report which I am sending with apologies because of its brevity and incompleteness, all of which is due to the very short time at my command for preparation.

"Very sincerely,

"(Signed) M. W. Mix."

REPORT ON MANUFACTURERS' ASSOCIATIONS AS IDENTIFIED WITH "SAFETY FIRST."

By M. W. Mix.

"Safety First" is now a national slogan, and amongst the most effective of the various forward movements to produce this result has been the active and organized support given by the Manufacturers' Associations. The campaign inaugurated some four or five years ago by the National Association of Manufacturers, through their special committee, headed by Messrs. F. C. Schwedtman and James A Emery, was a wonderful piece of pioneer work, and placed before the employers of this country the first nationally organized campaign in behalf of accident prevention and relief. Through their efforts, the work has been taken up by associations of manufacturers in the various states, and through state and national trade associations, to such an extent that the subject of safety has become a standing topic for all conventions of these bodies.

To reach this condition in so short a time is but little short of marvelous. It testifies particularly to the human interest that is involved in the question, but finds its rapid incubation through association contact, rather than through the individual development.

The problem before this conference is to consider how this mass of influence may be best capitalized or federated, to the end that

there may be national standards evolved for all forms of protection and stimulation in co-operative measures. Much work is being duplicated. Much valuable information is lying dormant that is needed by the public. Much enthusiasm is being smothered that only awaits release through association influence.

In the state associations of manufacturers there are perhaps a total of over 30,000 members, some of these being duplicated in national, state, or regional trade associations, which also represents a very large membership. Nor does this include transportation, public service corporations, nor a vast array of employers who do not operate machinery, but who do employ large forces at work, as in jobbing houses, retail stores, public institutions, etc. Nevertheless, the influence of the manufacturer extends more or less directly to all other lines of business.

To standardize the forms of protection and relief, and provide efficient means of promulgation throughout the country should be one of the cardinal undertakings of the National Council of Industrial Safety.

Many of the states have active committees working under the direction of the state associations, or through the associations of certain trades, many of them maintaining inspection departments for the benefit of their members.

Their activities are largely governed by what is done in other states or organizations—each adding or omitting certain features to suit the individual idea. We do not say that all may be good or that some may be bad—but we do say that much benefit will arise by pooling ideas,—standardizing methods, eliminating the fanciful and getting right down to the common sense of the thing. That safeguarding may be carried too far cannot be gainsaid; we are prone to over-enthusiasm on subjects of such intense interest.

Safety must not be automatic; that is to say, the individual must not be led to the belief that there is nothing to fear,—that he is to have no responsibility for self-consideration. Through association influences the progress made in the various trades in the way of providing and handling safety devices, may be made available to all employers, as in nearly all establishments, there are certain forms of exposure that are incident to all, such as electricity, elevators, steam uses, passageways, etc.

What shall be the standard of protection for all of these condi-

tions? This council should be a clearing house on the subject. Through its propaganda, there may result national or regional museums of safety and work hygiene; this would certainly be well within the possibilities of the near future if we may succeed in enlisting the active interest of all manufacturing associations.

The National Association of Manufacturers is doing a great work, as are our leading institutions like the United States Steel Corporation, Westinghouse, General Electric Company, etc., for which due credit should be given; but in my humble opinion it falls short of covering the needs of the manufacturers of the United States as a class, who, for trade reasons, may confine their organization interests to their own trades, or, in state associations of manufacturers where mutual co-operation forms a larger percentage of the annual dues than money.

There is a way to reach them all, but it needs specific treatment if we may hope to anticipate time and, in our own characteristic American way, make available to all at the earliest possible date, the best known service or standard of the times.

I shall hope that regardless of my absence, there may be some discussion on the subject of Standardization of Protective Measures, and that some way may be authorized, through "extension work," or otherwise, to "Carry the message to Garcia," and make this a real Nation-wide movement that will reach the man back home and make him as much of a "Safety First" man as the largest employer now amongst us, believing, withal, that the manufacturers' associations will prove the most effective messenger to make the final delivery.

Chairman McCLEARY: The industry which has perhaps been regarded as the most full of danger, and recognized as one of the greatest of all industries of the country, is that of transportation. We will now have the pleasure of hearing from the gentleman whose name has been so pleasantly mentioned several times, Mr. R. C. Richards of the Chicago & North-Western Railroad, upon the subject, "Safety in Transportation." (Applause.)

Mr. R. C. RICHARDS: Mr. Chairman and Ladies and Gentlemen: There has been so much talk about Ralph Richards here today, I am going to stop that kind of talk, and tell you something about

the Northwestern, and as my time is limited, contrary to my usual method of magnificent oratory, I am going to reduce my remarks to writing.

The matter of prevention of accidents causing death and personal injury on the railways of this country has been for years one of the most serious, if not the most serious, problem the managements of the railroads and the governmental agencies having charge of their regulation have had to face. The effort to prevent accidents and loss of life and limb by law has been to a large extent a failure, because the laws overlooked the human element which was, is now, and always will be, the controlling factor in the matter; and consequently the effort to bring about a reduction of accidents by co-operation of the men and the officers of the railroads was inaugurated by the Chicago & North-Western Railway in May, 1910, and if anyone had told us at that time that in less than three years seventy railroads, with a mileage of 186,172 miles, in the United States and Canada, as well as railroads in Great Britain and Japan, would adopt the North-Western plan, or one very similar to it, and that the Safety First movement would have become as much a part of the organization of the railroads as the freight or passenger departments, as is shown by the following list of railroads in this country and Canada which have adopted the plan, we would have thought them crazy:

	Mileage.
Ann Arbor Railroad	292
Atchison, Topeka & Santa Fe	10,800
Atlanta, Birmingham & Atlantic	662
Baltimore & Ohio	3,449
Baltimore & Ohio Southwestern	985
Bessemer & Lake Erie	220
Buffalo, Rochester & Pittsburgh	573
Canadian Pacific (Lines East)	5,000
Canadian Pacific (Lines West)	6,812
Canadian Northern	4,520
Carolina, Clinchfield & Ohio	254
Central of Georgia	1,915
Chesapeake & Ohio	1,962
Chicago, Burlington & Quincy	9,003

	Mileage.
Chicago Great Western	1,496
Chicago, Indianapolis & Louisville	617
Chicago Junction	298
Chicago & North-Western	8,291
Chicago, St. Paul, Minneapolis & Omaha	1,744
Chicago, Milwaukee & St. Paul	9,322
Chicago & Alton	1,025
Chicago & Eastern Illinois	1,300
Chicago & Western Indiana	75
Cincinnati, Hamilton & Dayton	1,015
Cumberland Valley R. R.	162
Delaware, Lackawanna & Western Ry	972
Denver & Rio Grande	3,777
Duluth & Iron Range	314
Elgin, Joliet & Eastern	482
El Paso & South-Western	968
Erie	2,258
Fort Smith & Western	259
Georgia, Southern & Florida	395
Grand Trunk	4,766
Illinois Central	6,140
Jonesboro, Lake City & Eastern	102
Kansas City Terminal Ry. Co.	76
Lehigh Valley	1,454
Macon, Dublin & Savannah	93
Missouri, Kansas & Texas	3,090
Missouri, Oklahoma & Gulf	351
Missouri Pacific	7,236
Mobile & Ohio	1,114
New York Central Lines	11,789
New York, Chicago & St. Louis	543
Norfolk & Southern	680
Norfolk & Western	2,000
Northern Pacific	6,233
Oregon Short Line	1,689
Oregon-Washington R. R. & N. Co.	1,927
Pennsylvania	8,789
Pittsburgh & Lake Erie	221

	Mileage.
Queen & Crescent	1,154
Raleigh, Charlotte & Southern	350
Rock Island	8,028
St. Louis & San Francisco	4,732
San Antonio & Aransas Pass Ry.	724
Seaboard Air Line	3,300
Sonora Ry.	263
Southern	7,500
Southern Pacific	9,657
Southern Pacific of Mexico	934
Spokane, Portland & Seattle	555
Sunset Central E. & W. Lines	2,816
Toledo, St. Louis & Western	454
Union Pacific	3,506
Wabash	2,514
Wabash-Pittsburgh Terminal	64
Western Maryland	661
Wheeling & Lake Erie	463
Total	186,172

And every week brings new adherents to the cause, until shortly every railroad in this country will be enrolled in the Safety First movement, the object of which is, by co-operation between the men and officers, to make SAFETY MEN, who are much more important than Safety things, and thereby bring about greater safety and regularity in the operation of our business, which is the end we are all striving for and which we are now attaining by impressing the men on the Safety Committees with the necessity of doing things in the safe way and by their teaching their fellow-workmen:

That every time a worker is killed or injured it not only causes suffering, pain and sorrow, and sometimes destitution, but also increases the risk to all the other men because an experienced man is taken out of the service and a green man put in his place;

That accidents were not inevitable, as we all had commenced to think, but that most of them could be avoided by the exercise of a little care;

That it is better to cause a delay than an accident;

That it is the little accidents that make the big total, not the collisions and derailments; (in the last two years ten out of every eleven employes killed and thirty-seven out of every thirty-eight employes injured on the North-Western were killed or injured in little accidents;) so that what we wanted to do was to take care of the little accidents and the big ones would take care of themselves;

That the chance-taker, the man who makes cripples, widows and orphans, was the man we were after, and that he must change his methods and habits or get out of the service before, and not after, he kills or injures someone;

That every member of the Safety Committees and every employe should report immediately any defective condition or practice that he thought might cause an accident, before and not after, someone was killed or injured;

That it is the men and not the officers who get injured;

That it is the men who leave widows and orphans, and not the stockholders and directors;

That as the employes and their families would be the greatest beneficiaries from the Safety First movement, it was their movement and it was up to them to make it a success.

And because the men on the North-Western took hold of it and made it their movement, it was so successful in saving life and limb that the other railroads in the country and Canada have adopted it to the extent heretofore shown, and for the fiscal year ending June 30th, 1913, as compared with the fiscal year ending June 30th, 1910, the year before the Safety movement started, we show:

38	fewer employes killed, a decrease of.....	35.5 per cent
2,217	fewer employes injured, a decrease of.....	25.6 per cent
187	fewer passengers injured, a decrease of.....	20.2 per cent
31	fewer outsiders killed, a decrease of.....	13.2 per cent
19	fewer outsiders injured, a decrease of.....	3.9 per cent

TOTAL.

66	fewer persons killed, a decrease of.....	18.7 per cent
2,423	fewer persons injured, a decrease of.....	23.8 per cent

During the fiscal year ending June 30, 1913, our earnings increased $8,860,236.45, or 11.94 per cent, over 1910.

And for the three years ending June 30th, 1913, as compared with three years on the basis of the year ending June 30, 1910, we show the following result:

93 fewer employes killed;
6,433 fewer employes injured;
659 fewer passengers injured;
133 fewer outsiders killed;
157 fewer outsiders injured.

On Monday of this week a meeting was held at Chicago to organize the American Railway Safety Association to secure cooperation of all railroads in the Safety First movement and to interest roads not now so organized.

At the last meeting of the American Railway Association, the ranking railway association in the world, the Safety First movement was endorsed and a committee appointed to consider what further action should be taken by the association to aid in spreading the movement.

In Chicago a committee of citizens of all classes has been appointed, known as the Public Safety Commission of Chicago and Cook County, to see what can be done to prevent accidents in the streets, on the highways and other places.

The "Railway Record" now devotes all of its space in one issue each month to the Safety First movement.

Public Safety lectures illustrated by moving pictures and stereopticon views are being given generally throughout the country, calling attention to the chances people are taking, not only on the steam railroads, but on the electric lines, on the streets, in the shops, factories and mills.

The North-Western has furnished the moving picture shows all over its line stereopticon views illustrating the danger of trespassing on the tracks and cars. Other railroads, I believe, are doing the same thing.

The New York Central and some other lines have Safety cars going over their line with pictures showing the safe and unsafe way of doing work and the result of doing it carelessly.

The North-Western has what is known as a signal instruction car traveling over its line all the time in which the operation of signals is shown by stereopticon views and Safety pictures are

also shown and lectures given on the operation of signals and safe operation.

Last year on the North-Western Railroad 4,382 out of 4,545 recommendations made by the Safety Committee were adopted, and doubtless the same thing came about on the other railroads.

Every year the North-Western is turning out between 1,000 and 1,200 men who have served on the Safety Committees. We now have 787 men on these committees, who are doubtless safer and better men on account of the time spent in the Safety work and who will necessarily have an influence on the other men, and the other roads are doing the same thing. In time we hope to have every permanent employe on the railroad serve his six or twelve months on the Safety Committee.

The El Paso & South-Western and the Chicago Railways and other railroads and the American M seum of Safety have inaugurated a systematic course of instru tion to school children on the danger of trespassing on steam railroad and electric railroad tracks.

The North-Western has sent to all school and municipal authorities on its line an illustrated circular showing the dangers of trespassing and how many children and adults are killed from that cause.

Even the Interstate Commerce Commission has endorsed the Safety movement, in their 1912 report, in which they say:

"Great possibilities in the direction of a solution of the problem of accident prevention lie in the so-called Safety Committees which have been organized on many roads. These committees are composed of officers and employes who co-operate in striving to eliminate accidents due to failure of men properly to perform their duties. By making 'Safety First' the dominant idea in the minds of employes, and continually pointing out methods for its attainment, an important step in the right direction is taken."

Everywhere there is shown a very gratifying improvement in the matter of:

Cleaning up obstructions in yards, stations, platforms, shops and roundhouses;

Cleaning windows;

Putting up railings at dangerous places;

Covering gearing of machines;
Blocking frogs and guard rails;
Repairing cars, engines and machines, and

In putting a stop to dangerous practices and customs, which has brought about not only greater safety and regularity, but also more efficient operation.

And so the cause of Safety First on the railroads advances, each day someone adding his thought or effort to make it more successful, and the movement has succeeded, and will continue to succeed, because it is right and nothing that is right ever failed; because it appeals to men as it prevents their getting hurt. It appeals to their families because it saves them from poverty, suffering and destitution. It appeals to the practical man who runs the railroad, the factory or the shop, because it increases the efficiency of the organization and makes it more economical and profitable for him to operate. It appeals to the man of imagination, because anything that is human and tends to the conservation of human life appeals to any man who has imagination, and we all have some imagination. There is no movement in the annals of railroad history that has spread so fast and so far as this Safety movement. In three short years it has gone from the Atlantic to the Pacific, from the Gulf to the Great Lakes, it has reached over and touched Great Britain and Japan. Over in Japan they have copied the North-Western Safety organization, the Vice-President of the Imperial Governmental Railroads says because the North-Western men have accomplished such miraculous results they must adopt the same plan in Japan. And when the men get to understand that the greatest risk they run today is the risk of being injured by some careless or thoughtless man,—and it is more thoughtlessness than carelessness,—just as soon as we can get our men to really understand that, and we are doing it fast, we are going to put an end to this accident business.

In conclusion I want to say that the stigma of this great number of accidents that are occurring in this country has been wrongfully put on the railroads. It does not belong there; it belongs with the other industries, because the government tells us that every year in this country of ours, in carrying on our peaceful industries 35,000—not 3,500 or 350, but 35,000 workmen are killed every year, or one every sixteen minutes of every hour of every day in the

365 days of the year; and there are 2,000,000 of them injured, or one every sixteen seconds of every minute of every hour, and only *one-tenth* of those killed and *one-sixteenth* of those injured are railroad men.

And when we exercise the same care in the selection and education of men that we do in the designing and maintenance of engines, cars and bridges, we will come very close to wiping out the accident business.

Chairman McCLEARY: Perhaps the greatest manufacturing industry in the United States is that of iron and steel. We are privileged to hear now from Mr. L. H. Burnett, of the Carnegie Steel Company, whose subject is "Safety and Welfare in the Iron and Steel Industry." (Applause.)

Mr. L. H. BURNETT: Mr. Chairman, Ladies and Gentlemen:

The manufacture of iron and steel, requiring the lifting and moving of heaving loads and the constant handling of hot and molten metals, must, from the very nature of the business, always be classed among the more hazardous occupations.

So rapid has been the growth of the industry that it required the best efforts of those in control to provide sufficient capacity, in order that the demands of the trade might be met. New mills and furnaces were constructed practically over night and there was little or no opportunity for the consideration of anything other than tonnage.

Within the last few years, however, the industry has shown wonderful progress, from a safety standpoint, not only in the installation of safeguards, but also in providing better lighting facilities, better sanitary appliances and better working conditions in general.

Today we may walk through most of our steel mills and will have some difficulty in discovering an uncovered gear wheel, a projecting set screw or an unprotected belt. The more obvious dangers have been taken care of. A careful inspection, however, often reveals the fact, that the work of guarding dangerous machinery has not always been well done. Many of the guards will be found to be too light in construction or otherwise inadequate for the purpose intended.

The chief function of the safety expert today, so far as mechanical safeguards are concerned, is to get the best device for the purpose intended, adopt it as a standard for his plants, and see that it is properly installed. For example we may take the question of proper protection of electric switches. There seems to be an almost hopeless difference of opinion on the subject. There are hundreds of different switch covers, none of which seem to be entirely satisfactory under all conditions. There are those who maintain that protection is not necessary when the voltage does not exceed two hundred and fifty, although we read of fatalities caused by contact with only one hundred and ten volts. It would seem that this important problem might best be solved by the Association of Iron and Steel Electrical Engineers, as a recommendation from them would undoubtedly be followed by the majority of safety engineers.

Proper lighting plays a most important part in safety work, and here again we find wonderful progress being made. The substitution of tungsten lights in place of the arc light has added greatly to the lighting facilities of our plants. One great advantage of the tungsten light is that it may be placed upon cranes and moving machinery, where light is most needed.

The matter of proper natural light and ventilation is a most serious one in our older plants, as it is almost impossible to make any material improvement in conditions, except by a practical reconstruction of the buildings. These features, however, are being well cared for in our modern mill buildings.

A most important element in all safety work and one that is ignored by many of our safety inspectors, is the absolute necessity of a general appearance of neatness and good order about the yards and buildings. The workman who adheres to the rule "A place for everything and everything in its place" is, of necessity, a careful workman and one who will perform dangerous work in a safe and careful manner. Neat and clean surroundings have an undoubted influence for care on the part of the individual. If, on the other hand, he is required to work amid scenes of disorder, if the mill floor and yards are littered with refuse and loose material, he will become careless and slovenly in his habits and be much more liable to personal injury.

We have found that the installation of grass plots and flower beds at suitable points throughout the works have the effect of stimulating the men to greater efforts in keeping the entire plant clean and neat. In many instances the men themselves have taken care of the flowers and grass during their spell periods.

There can be no clear-cut division between safety and welfare. One is a direct aid or supplement to the other. The furnishing of pure drinking water by means of sanitary fountains, doing away with the common drinking cup; the construction of sanitary water closets, shower baths, lockers, in short everything which contributes to the physical well-being of the workman, is a direct safety measure and just as important as the guarding of dangerous machinery.

We must not overlook the necessity for immediate surgical attention to the injured and properly-equipped emergency hospitals at all plants. Where the number of men employed justifies it, the hospital should be in charge of a surgeon or trained nurse at all hours and the men should be taught to go to the hospital for treatment of even the slightest injuries. In this manner many cases of infection are prevented, resulting in great good to both workman and employer. Wherever necessary, first aid instruction should be given to selected men in each department. For several years the Illinois Steel Company made a careful classification of all accidents with the following average results: Accidents due to trade risks, 23 per cent; to negligence of the company, 6 per cent, and to negligence of workmen, 71 per cent. It may readily be seen from these figures, that the real problem confronting the safety man today, is to devise some method or scheme to induce the men to keep ever before them the necessity for exercising constant care in their daily work.

Many excellent schemes are now in use, such as the publication of monthly or quarterly bulletins; the complete organization of plant safety committees; the use of bulletin boards; the stereopticon and moving pictures, all have their value and have been employed with more or less success.

We are now installing at our several plants, about one hundred bulletin boards, uniform in design and construction, which will be devoted solely to the display of articles and photographs pertaining to accidents and safety. During the past winter we gave 21

safety entertainments to more than fifteen thousand of our employes. The entertainments consisted of music, moving pictures, lantern slides and very little talking. We found them to be effective in stimulating a general interest in safety.

It is my personal opinion, however, that the most promising method of preventing accidents is the system of bonuses to foremen and others in direct charge of operations, which has been adopted as an experiment by the National Tube Company. The amount which a foreman will receive depends upon his ability to improve the accident record of his department. The plan should be successful, as the foreman is the one most important factor in safety work. He can do more than any other individual in seeing that his men are properly instructed as to hazards; are given a safe place in which to work and that they do their work without taking unnecessary chances.

"Accidents will happen" and we cannot hope to entirely eliminate them. We can, however, by continuing to search out the dangerous places in our plants and protecting them with proper and adequate safeguards, reduce those accidents, which are due to the fault or neglect of the employer, to the minimum.

The greatest improvement must come in the reduction of the seventy-one per cent due to negligence of the workmen. This can only be accomplished by pushing the present campaign of education, with every means at our command, until we have the enthusiastic co-operation and support of every man in the industry.

Chairman McCLEARY: Now we will have the pleasure of listening to the gentleman who has been so handsomely introduced, Mr. George H. Whittle, Chairman of the Public Safety Commission of Chicago and Cook County, Illinois, who will speak to us on the "Public Safety Problem."

Mr. GEORGE H. WHITTLE: Mr. Chairman and Gentlemen of the Congress, before proceeding with my formal paper, I want to read to you a personal letter from the Mayor of the City of Chicago, addressed to the Coroner of Cook County, when he was invited to participate and become a member of the Commission. (Reading):

"I have your letter of September 6th inviting me to become a member of a permanent organization to work in conjunction with

the Coroner's office of Cook County. I shall be glad to accept the invitation and become a member of the committee, and shall be glad of any suggestions growing out of the work of the committee that might be of assistance to the officials of Chicago and their efforts in this direction. I would suggest that the Chief of Police be named as my proxy.

"Yours very truly,
"Carter H. Harrison, Mayor."

(Mr. Whittle thereupon read his formal paper, which is as follows):

A baby was born in Chicago ten days ago. The infant's name is the Public Safety Commission of Chicago and Cook County. There is always great excitement and interest when a baby is born, and this child seems to be no exception to the rule. Congratulatory messages have been coming in from all sections of the country. We believe that there are possibilities for service ahead of the child. One of our great orators has expressed this thought in the following beautiful language:

"What unfathomed possibilities are wrapt in the swaddling clothes that enfold an infant! Who can measure a child's influence for weal or woe? Before it can lisp a word it has brought to one woman the sweet consciousness of motherhood, and it has given to one man the added strength that comes with a sense of responsibility. Before its tiny hands can lift a feather's weight they have drawn two hearts closer together and its innocent prattle echoes through two lives. Every day that child in its growth touches and changes some one; not a year in all its history but that it leaves an impress upon the race. What incalculable space between a statue, however flawless the marble, however faultless the workmanship, and a human being "aflame with the passion of eternity."

The same rule that applies to the individual, applies also to an organization, an aggregation of individuals. You would scarcely expect, however, that an infant ten days old would assume to instruct or advise seasoned veterans in the safety movement. We are here to learn and to counsel and advise with you, with the hope that the result will be advantageous to all.

At a great religious congress held some time ago at which representatives of all creeds were present, the following story was related:

"A Catholic priest and a Presbyterian clergyman who were fast friends were on their way across the Hudson River from the New Jersey side to New York City, and on the ferry boat they engaged in a heated discussion over some religious problem on which they could not agree. It was observed by the passengers that they left the ferry boat in an unpleasant frame of mind and somewhat estranged. The priest proceeded on his way and while passing a building that was in the course of erection he noticed a workman who had fallen from one of the upper stories to the ground and was seriously injured. The priest at once began to administer to the needs of the dying man, and about this time the Presbyterian minister happened along. He quickly knelt beside the prostrate form of the injured workman, and clasping the hand of the priest he said, 'we may be separated by creed and doctrine, but here we are united in love for our fellow man.'"

So it is when New York and Chicago join hands across the country in sympathy and service, all jealousies and differences are forgotten in a common and noble purpose to conserve human life and relieve human sorrow.

"What might be done if men were wise,
What glorious deeds my suffering brother,
Would they write in love and right
And cease their scorn of one another.

"Oppression's heart might be imbued
With kindling drops of loving kindness,
And knowledge poor from shore to shore
Light on the eyes of mental blindness.

"What might be done?—this might be done,
And more than this, my suffering brother;
Would men unite in love and right,
And cease their scorn of one another."

We have in the employ of the American Express Company in Chicago a rather unique character, who has won his way from the position of wagon boy to that of Superintendent of Wagon Service. He is a great baseball fan, and occasionally when something goes wrong in the wagon service, and we ask him what is the matter, his reply is that the driver is a good promiser, but a poor performer, and that he proposes to get rid of him, as he will not tolerate anyone in the wagon service whose batting average is less than 400. The Public Safety Commission of Chicago and Cook County does not wish to promise more than it can perform, and we sincerely hope that our batting average will be up to the 400 mark.

I will attempt a little later to give you some idea as to what the Public Safety Commission has already accomplished, and the work it proposes to immediately undertake.

The Safety First movement in Chicago has for some time occupied a large place in the public mind. Our city officials have not been unmindful of the necessity for remedial legislation, and various regulatory ordinances have been passed from time to time, the enforcement of which will naturally have a tendency to minimize the number of deaths and personal injuries resulting from industrial, automobile and other accidents. There still remains, however, a necessity for revising and modifying existing laws and the enactment of new legislation to meet the present requirements. It is not alone in legislation though that a remedy must be sought for the protection of the public. Public sentiment must be behind any movement of this character to secure desired results. The appalling death rate in our city due to avoidable accidents has aroused public opinion to a fever heat. The Chicago Association of Commerce, the City Club and kindred organizations have, through their properly constituted committees, been dealing with the situation. The newspapers of Chicago have vigorously carried on a crusade in the arousing of public sentiment against the accidents resulting from street traffic, particularly, and great credit is due them for the results now being secured. It remained for Peter M. Hoffman, coroner of Cook County, to combine the various elements interested in the Safety First movement into an organized body whose object will be to inaugurate a campaign sufficiently comprehensive to fully cope with the problem,

and it is not believed that there are any who will gainsay the statement that he will as a result of his judicious selection, prove the wisdom of the proverb, that "in the multitude of counsellors there is safety."

The coroner has appointed a committee of forty which is to be known as the Public Safety Commission of Chicago and Cook County, and this commission has become a living reality in our community. You will be interested to know that the mayor, the president of the Chicago Association of Commerce, the president of the Board of Education, officials of railway companies, engineers of street railway companies, experts on safety devices and the safety inspectors of industrial plants, and street railway companies have responded quickly to the coroner's request to serve on the commission, and we now have a working force which when hurled at the gigantic problems to be solved will, in our judgment, produce permanent and satisfactory results.

One of the pioneers of the Safety First movement in our city was Mr. R. C. Richards, of the Chicago & Northwestern Railroad, who spoke before the Ways and Means Committee of the Association of Commerce some time ago and who inspired us to action by his splendid address.

Mr. Richards has also made similar addresses before numerous organizations in our city and is entitled to much credit in arousing public opinion. We have several members of the Public Safety Commission of Chicago present at this congress and they perhaps are entitled to equal credit with Mr. Richards for the splendid work that has been done to stimulate interest in the Safety First movement, but time will not permit extended mention of their efforts.

The work of the commission will be assigned to committees, among others the following: Educational Committee, Industrial Committee, Street Railway Committee, Railway Committee, Committee on Safety Devices, Committee on Suicides, Committee on Street Accidents, Publicity Committee and Legislative Committee.

It might be well right here to give you some idea of the necessity for concerted action in the direction of public safety in our city, by presenting some of the figures that Coroner Hoffman has prepared which indicate that there must be a cure for the recklessness, lawlessness and carelessness that has fast been making Chi-

cago "a city of constant menace and danger to the traveling public," and by that is meant to the man who walks and works. The coroner has given what he calls "the shameful record of the last eight years in Chicago." It is the deaths resulting from traffic causes alone, and is as follows:

Deaths by steam railroads	3,022
Deaths by automobiles and motorcycles	433
Deaths by street railways	1,495
Deaths by elevated railways	133
Deaths by vehicles	502

During the last eight years the coroner's office investigated in Cook County 38,020 deaths. The coroner has found that in many cases "the causes are far beyond human power to alter or minimize but many of the causes are near at hand and under our control." With that thought in mind that most of the deaths and crippling from accidents could be avoided, the coroner commenced his crusade to make Chicago a safer city. His own experience has convinced him that the desired results can be secured if only an attempt is made. Numerous deaths from asphyxiation alone caused the coroner to investigate the causes. By waging a war against leaky gas pipes, defective plumbing and other conditions that he found in lodging houses, industrial plants and other places where lives were in danger from that cause, he has been able to reduce the death list in one year from asphyxiation alone by 65. If such a result can be secured along one line alone, it was no dream for the coroner to believe that, with concerted action, stricter laws and an aroused public sentiment, hundreds of lives could be saved that are now offered up as a sacrifice to lawlessness, recklessness or carelessness.

The increase in accidental deaths in Chicago during the past year has been enormous. Take one case alone as an example: In 1905 there were five deaths from automobile accidents and in 1913 there have been 107 deaths in the first eight months—an increase of from one death to 1,290 automobiles to one death to 188 automobiles in eight years—surely a record that calls for drastic action. The deaths from traffic causes in 1912 in the Metropolitan Police District of London, which has a diameter of 30 miles and a population of 7,500,000, amounted to only 537 against an average in Chicago

for eight years of 697, with a population of one-third of that of London. The automobiles in Chicago in eight months of this year have killed one-fifth as many people as were killed in the city of London from all traffic causes combined in one year. The record from automobile deaths in Chicago compared with New York are not quite so bad with the comparisons of London. In New York during July and August of this year 28 people were killed, while Chicago killed 58—over twice as many. New York had 147 injured while Chicago injured 177, and Chicago has but one-half the population of New York City.

The increase in automobile traffic in Chicago has increased seven times since 1907, while the death rate from accidents by automobiles has increased from five in 1905 to 107 for nine months in 1913—over twenty times, with several months to hear from. This increase is vastly disproportionate to the increase in automobiles. Is it any wonder that there is a demand for a change from such conditions? It is plain to see why the Public Safety Commission of Chicago and Cook County has become a real live, active force in the community.

Chicago is not alone in its record of appalling accidents and deaths from avoidable causes. From all over the country the cry is going up for relief. In the city of Los Angeles during the year 1912, 49 people were killed from automobile accidents and 1,372 people injured. In Boston 22 people were killed and 483 injured. In New York 221 were killed and 2,363 injured. Automobile deaths are particularly referred to because the statistics are available and because the increase in deaths and accidents from these causes are increasing so rapidly that ways and means must be furnished to correct the evil.

It will be readily seen that there is a great work to be performed by the Public Safety Commission of Chicago and Cook County. The commission is not unmindful of the great task before it; it does not propose to be revolutionary. Its plans will be broad and comprehensive. We recognize that avoidable accidents, fatal or otherwise, are generally caused by recklessness, lawlessness or carelessness. We will study causes and endeavor to provide remedies, by laws, education and the arousal of public sentiment. We will co-operate with all organizations now working along some line of similar effort as Safety First departments of street railways, rail-

road companies and industrial enterprises. We will attempt to concentrate all lines of effort in the safety movement in Chicago into one channel for the protection of the people of our city.

One of the first efforts of the commission will be to secure a new general traffic ordinance—one that can well stand as a model for years to come for any city. We shall co-operate with the city officials in this work and try to secure an ordinance that will be clear-cut and efficient. We shall work for better state laws and better city ordinances covering all lines of danger to public safety by providing drastic penalties for violation, and we will back these laws and ordinances with a public sentiment that will compel their enforcement. Certain enforced penalties for lawlessness and recklessness will minimize the accidents resulting therefrom. As to carelessness, it must be a matter of education. We can go into the schools, into the homes, into the factories, into the street—we can teach and advise and warn until we secure a public sentiment that has a care for danger; a public sentiment that will instill into the individual a respect for the rights of others. This was the dream of Coroner Hoffman in the organization of our Public Safety Commission. It has been said that this is a dream of an idealist, but I want to tell you that Chicago is the place where dreams come true. We have a new proverb out there—"where we will there's a way," and we have willed that Chicago is going to be a better, safer and happier place to live.

The commission will be incorporated, and a self-perpetuating body. Plans have already been made for a Safety First Sunday, October 26th, 1913. The newspapers will feature the safety movement in their issues of October 25th, 26th and 27th, and the cartoons on one or all of these days will bear upon the safety movement.

Arrangements have also partially been made with the Chicago Sunday Evening Club for a great mass meeting in Orchestra Hall during the coming season, at which speakers of national reputation will address our citizens on the question of public safety. We have already distributed to the school teachers of Chicago and Cook County 6,000 copies of the Coroner's Quadrennial Report, and under the direction of Dr. Ella Flagg Young, the superintendent of schools, the teachers are giving public safety instructions frequently.

One of our commissioners has distributed 7,000 pamphlets in the schools containing safety hints to children, and adults, requesting each child to take the pamphlet home and read it to its parents. The commission is now preparing a pamphlet for general distribution in the schools of Cook County, a safety button for each child to wear, and on October 10th the commissioners will be divided into groups and address the school children of the county in the assembly halls of the various schools, it being considered probable that the children can be impressed in this way more forcibly than by a safety lesson given by the regular teacher.

The commission has arranged to appoint 2,000 deputies who will wear a safety button, and who will report to the commission any violation of traffic rules which may be observed. The numbers of automobiles whose owners have been guilty of speeding will be registered from the reports sent in and such information will be available when the cases come up in court.

The standing committees will be completed during the present week, and work assigned to each one. The commissioners have been asked to express their preference for committee work, and the members will be selected on the basis of their special fitness for the duties assigned to them. There are numerous other functions of the committee that cannot be touched on at the present time, and also additional work that has been planned which cannot be detailed in the short time allotted to this address. But any of the commissioners in attendance upon your congress will be glad to answer any questions and go into this matter thoroughly at any time you may wish to interview them.

It is gratifying to know that the efforts of Chicago are being approved everywhere; public officials, civic organizations and individuals all over our land are pouring in congratulations for having inaugurated such a movement. We are satisfied that we are the pioneers in the movement that will be national in its scope. Such a movement has been predicted by those familiar with the situation. The late police chief of Omaha, Neb., Mr. Donahue, in a report to the commission of that city, presented statistics showing over 6,000 people injured in twelve large American cities in one year from automobiles alone, and stated: "The result is simply appalling. I am not prepared to say just what the curb will be, but there must be something adequate. Something should be done. I

hope to see a national organization of some kind formed. There should be branches of this body in every state and city.

"The government has a national commission for the regulation of railroads, and every state considers it its duty to pass a number of regulatory railroad bills at every session of the legislature, but more people are being injured from automobiles than by railroads. Why not have the state legislatures give some of their time to this menace? There is a state veterinarian to look after sick horses and cows; a state oil inspector to see that a certain grade of oil is sold; a government inspector must pass on all meats killed at the packing houses; government experts are showing the people how to raise potatoes, milk cows and feed hogs, but nobody seems to care anything about this vast army of cripples which the reckless automobilist is leaving behind."

Let me present here to this National Council for Industrial Safety something for your consideration and action. This public safety movement is going to grow; it is going to be far reaching and the movement in Chicago is but the nucleus of a national movement along the same lines. Your organization is restricted in its scope to industrial safety. That is only one feature in the broader work planned in our movement. Let me urge upon you the importance of broadening your efforts; let this organization become instead of the National Council for Industrial Safety the National Council for Public Safety. Let there be no necessity for a new national organization. With your experience and knowledge of conditions it is but fit and proper that this organization should be enlarged to comprehend the whole field and I pledge you, gentlemen, that if this can be done that the Public Safety Commission of the City of Chicago and Cook County will be a hearty supporter of this parent organization. There is no reason why it should not be done. You know it has been said that things move along so fast nowadays that the fellow who says it can't be done is interrupted by somebody doing it. Do it now, and come to Chicago next year with the first annual meeting of the National Council for Public Safety.

In its last analysis the Safety First movement is a plan to promote the general welfare by unselfish devotion to the interests of humanity. This surely is a worthy ideal and one that should stimulate the noblest thought and the most earnest endeavor on the

part of each one of us. Work of this nature is what makes life worth the living.

"Each day marks out our duty for us, and it is for us to devote ourselves to it, whatever it may be, with high purpose and unfaltering courage. Whether we live to enjoy the fruits of our efforts or lay down the work before the victory is won, we know that every well-spoken word has its influence; that no good deed is ever lost. And we know, also, that no one can count his life on earth as spent in vain if, when he departs, it can be said: 'The night is darker because his light has gone out; the world is not so warm because his heart has grown cold in death.' "

Chairman McCLEARY: We have heard from the nation, the state and the city. We will now take up the industrial end of it, and we will have the pleasure of listening to Mr. R. P. Bolton, on one of the dangerous appliances that have come in recent years by reason of the tall buildings. Just think how high we are, and remember only a few years ago a Chicago man was laughed to scorn because he said that buildings could be erected fourteen stories high. We will now hear from Mr. Bolton on "Elevators." (Applause.)

Mr. R. P. BOLTON: Mr. Chairman, and friends interested in this great question of public safety, I ask your attention to a form of danger which attacks all persons, and all classes, and which, for that reason, might be considered as coming somewhat outside the scope of an organization which writes into its title the word "Industrial," but I will venture to say that in these days of universal labor and work, that the word "Industrial" may apply to a far greater number of persons than those who are employed directly in and about manufacturing operations.

That being the case, the subject that I have to present to you today should have been already covered by legislation, but that has not been done. The exigencies of modern life have demanded an increasing height in buildings of all characters, and today the majority of people, men, women and children, of all classes, are compelled to use a mechanical contrivance, namely, the elevator. Essentially a product of American ingenuity, the elevator is one of the safest devices in its use, that the mechanical mind has ever

produced, and I am not asking you, in what I say today, to think that the elevator is an unsafe appliance by any means. But I want to draw your attention to the fact that the enormous increase in the number of elevators now utilized by the vast volume of people that travel in elevators, has necessarily brought about a large increase in the number of accidents, accompanying their use, not a relative increase, but a large increase in itself, a numerical increase. The extent to which elevators are now in use is not known to many people and some facts gained from experience in the Borough of Manhattan may give you an idea upon their number.

The passenger elevators in use in the Borough of Manhattan have increased from a total of 4,475 in 1902, to 10,427 last July, and in addition to that number, there are upwards of ten thousand freight elevators, largely used by the employes in manufactories and semi-manufactories, which are not subject to any inspection on the part of our local authorities.

The passenger elevators are subject to inspection, but the only inspection that they receive is as to the safety of the apparatus itself.

An investigation, the figures of which I need not enter into in detail, into the accidents that occur in and about elevators, shows that upwards of sixty per cent of all that occur are not due to the elevator but to the gates and doors which give admission to elevators. Something like six out of every ten of all the deaths and all the injuries that occur are due to the open gate or the terrible entanglement of the passengers passing in or out of the moving car. I was called recently to act upon the jury which investigated the death of that valued public servant, the late Judge Bischoff. His death was directly attributable to the failure of the operator to close the inner or outer gates, prior to starting the car, and that alone brought about the loss to this community of that valuable public official. The facts in that case were so impressed upon my mind that I sought this opportunity of bringing this subject before your body, with a view of asking you to include the question of gate safeties, or door locking devices on all classes of elevators, as one of the most important subjects to which you can devote future attention. In doing so, let me say that you will not be going outside even the most limited view of the scope of your organization, because there are thousands of people employed in

lofty buildings in this city, and in others, who are dependent upon elevators for access to and egress from their work.

Therefore, in conferring a benefit upon a very large industrial community, you will also undoubtedly serve the community at large, because whatever line of business or interest or activity we are employed in, all of us must sooner or later, under modern conditions, be subject to the risks of passing in and out of elevator cars. It is deplorable, when you look into the statistics, to see the number of lives lost in this wholly unnecessary manner. I hold a record in my hand of two hundred and thirty-nine deaths which came before the coroners of this Borough of Manhattan in the last three years, and I find that 220 out of the 239, or ninety-two per cent, were due to falling down an open shaft, or being caught between the elevator and the door. Those must be regarded as unnecessary accidents, against which we have a right to demand protection for the helpless public which passes in and out of the modern elevator, and the helpless employe who is forced to go in and out of elevators to and from his or her work. I hope that I have said enough to awaken your interest in this subject. I am not belittling, by any means, the fine work which has been done by some of our public bodies, notably by the Wisconsin Commission, in the protection of employes in industrial establishments, in and about elevators, but I plead for the extension of this movement to cover all elevators, on the ground that all people are in some degree industrial workers, and all are entitled to similar degrees of protection. The death lists by railways is always appalling, but an investigation of deaths in and upon steam and electric railroads will show that this same class of cause brings about a large percentage of the accidents that occur on them. It is getting on and off of street cars, getting on and off of electric cars, and the dangers inherent therein, that brings about the largest number of injuries to the public.

In this state, during the years 1907 to 1910, such accidents occurring in and upon steam railroads were of the following extent: Two thousand nine hundred and eleven persons were injured and three hundred and six were killed. Elevators, at the same time, brought about accidents to an extent of 45 per cent of the railroads. In other words, elevators, with their unnecessary losses of life and injury to limb in and about their entrances, stood in the relation of nearly one-half of the similar class of accidents upon all the steam

railroads in this State. Are not those facts sufficient to impress upon your minds the desirability of adding this subject to the many interesting matters which you have under your consideration, and of doing a little not only for the industrial part of our citizenship, but for all the helpless people, the men, women and the little children of the general public, who are now liable to be unnecessarily injured and even sent to their death in this wholly unnecessary manner for lack of very reasonable protection. (Applause.)

"ROUND TABLE" SESSIONS.

First Session, Tuesday, September 23, 1913—Subject, "How to Reach the Employer." Chairman, Mr. C. W. Price, Assistant to Wisconsin Industrial Commission.

The following named gentlemen took an active part in the proceedings:

The Chairman.
B. C. Christy, International Harvester Company, Chicago.
Charles B. Scott, Middle West Utilities Company, Chicago.
E. G. Trimble, Employers' Indemnity Exchange, Kansas City, Mo.
W. H. Cameron, Manager, Casualty Department, American Steel Foundries, Chicago.
H. B. Smith, Safety Inspector, Illinois Steel Company, Joliet, Ill.
H. M. Bailey, Safety Engineer, Carnegie Steel Company, Duquesne, Pa.
Walter Greenwood, Safety Inspector, Youngstown District, Carnegie Steel Company, Youngstown, Ohio.
Dr. L. W. Chaney, Department of Labor, Washington, D. C.
L. W. Unger, Assistant General Superintendent, Clairton Steel Works, Clairton, Pa.
A. H. Young, Supervisor of Labor and Safety, South Works, Illinois Steel Company, South Chicago.
Mr. Shields, Cambria Steel Company.
James M. Woltz, Safety Director, Youngstown Sheet & Tube Company, Youngstown, Ohio.
R. C. Routsong, National Cash Register Company, Dayton, Ohio.
C. M. Brading, Wisconsin Steel Company, South Chicago.
J. C. Youmans, Employers' Mutual Liability Insurance Company, Wausau, Wis.
Luther D. Burlingame, Chief Draughtsman, Brown & Sharpe, Manufacturing Company, Providence, R. I.

Abstracts of the Views Expressed.

Mr. B. C. Christy, in opening the debate, said: First of all the co-operation of the management must be obtained. Then some

head organization must take care of the work. For this purpose, the Central Safety Committee has been the only means of securing such centralization. A Safety Engineer alone has an uphill proposition, even with managerial co-operation, because there must be a committee big enough to grasp the different operations that go to make up the different plants. Much good to the Safety Engineer has accrued from the Central Safety Committee because of the different ideas held by its members who are generally broad-minded men—operating men, and, in most cases, some one representing the legal side. The second factor is the Safety Engineer, who has to face many uphill propositions, for much has to be done to interest the Managers, Superintendents and Foremen, and then the employes. Our Safety Engineer, where we have 22 operating plants, must work in very close co-operation with the plant superintendents, and under the plant superintendents, we have been able to organize safety inspectors. From the safety inspectors we have secured co-operation with the foremen, then down to the safety committees.

Workmen Must Be Made Inspectors.

The Chairman: I call to mind the case of a plant of 100 men, with a good, live superintendent, and a young owner. To a request from these people as to an appropriate organization, I told them that whatever else was done, some of the workmen must be made inspectors. Then, finally, the workmen themselves should be brought in. An organization on the lines of a big company was not required. The foremen ought to be on the central committee. A safety inspector would be required probably, unless the secretary or some one in the office could do the clerical work. The secretary was a good man to manage details. In any case a few workmen should be appointed—even if only three—who would make inspections.

Details of an Organization.

Mr. C. B. Scott: I may outline the details of our organization, which is in three divisions:

(*a*) A Bureau of Safety at Chicago, which maintains a system of inspectors, and has its Safety Engineer, and its fire hazard inspectors.

(*b*) An organization of district superintendents in each State, who meet about quarterly, constituting a body to whom the workmen in that State report with suggestions, and anything that pertains to the work of the workmen's committee.

(*c*) A workmen's organization in the plant which meets monthly and is confined solely to workmen who select officials from amongst themselves, whose tenure of office is only three months in order to sustain interest among the workmen. The complete written minutes of these workmen's meetings are sent first to the district superintendents, and later to the Bureau of Safety.

The CHAIRMAN: I must emphasize the importance of the workmen's committees making written reports, because putting matters in writing (a copy to be kept) makes them more definite and dignified, and gives assurance that the points dealt with will be put on record and kept track of. Oral recommendations should be tabooed.

Mr. TRIMBLE: May I ask Mr. Scott is there is not some lack of co-operation on the part of foremen or superintendents who occupy an intermediate position between the manager and the men?

Mr. SCOTT: I find more difficulty in enlisting the hearty co-operation of the foreman and the plant manager than I do of the owners of the plant or of the workmen, principally because the first mentioned individuals are more intensely interested in the "production end," and have, morever, many matters to attend to. The bureau proper, which took in the beginning all the work of organizing the workmen and of carrying out the plan, supplies these organizations with proper lectures; and from the commencement the organization of the workmen was effected.

VALUE OF FOREMEN'S COMMITTEES.

The CHAIRMAN: Mr. Smith, would you not discuss for us the value of foremen's committees?

Mr. SMITH: One day I asked the general superintendent of my company's plant why he did not take a foreman every day from one of the departments and pay him his time while he worked in my department; that at the end of the month the foreman who made

the most recommendations that were accepted by the department should get $5. This was agreed on, and, on the whole, the experiment has been a success. We have foremen's committees termed "Department Committees" in every department, composed of the master mechanic of every department and two or more foremen, depending on the size of the plant, and this is indispensable in the large plants. The department committee makes an inspection once a month in its department, and receives reports from the workmen. Every day the department foreman makes out systematically a printed slip to the effect, "I have not seen anything today which is dangerous in my department." If, however, a foreman gets slack in this work, and something happens that he had the opportunity to report but did not report, it is easy to lay a finger on him. The penalty is one or two days' or a week's suspension from duty or discharge. This makes for maintenance of efficiency. Discipline is enforced on every man through reports on a printed slip. Every month the names of those disciplined are posted on the bulletin board. The Illinois Steel Company has gone to work to make all conditions mechanically safe, and it is trying to educate the men. Why could not a plant with 50 to 100 men start where the Illinois Steel Company is now and have every man in the plant educated along safety lines?

Central Committees and Foremen's Committees.

The Chairman: Has anyone here any doubt that it is indispensable in a large plant to have a Central Committee, and that it is advisable by all means to have in the primary departments—the large departments—the foremen, two or three foremen, as another committee?

Mr. Greenwood: In our organization (the Youngstown district of the Carnegie Steel Company) the central committee is a legislative body in organization, and the manager of the plant is the supreme executive. What the legislative body does the executive may veto, and that power cannot be taken from him. We have also a central committee of three members, the secretary making the fourth member; and its work, which is purely legislative, passes on to the manager. We do not have a foremen's committee in each department, but we "mix" them, having, say, an electrical man, a

mechanical man, and steel making men in a steel plant, mixing them all around, on a three months' tenure of office, with rotation. The inspector's reports are embodied in the minutes of the general committee. The recommendations of sub-committees are presented in written form and made a part of the records of the general committee. Those that are approved are headed under some caption, and assigned to the department to which they belong. As regards those disapproved, a report is made to the sub-committee on what action has been taken on all the recommendations made by them. In the plant there are four workmen's committees with three men each who serve for three months.

The CHAIRMAN: I desire to ask you, Mr. Greenwood, whether, in organizing a new plant where much safety work had not been done, you would appoint the workmen's committees at once, or wait until after the "high spots" had been covered—the more flagrant conditions—so there would not be a criticism regarding them?

Mr. GREENWOOD: This would be determined entirely by the conditions surrounding the plant; I would appoint the workmen's committee right away in a large plant; but if there had been no safeguarding—if nothing had been done along that line—I do not think it an absolute necessity to form such committees.

The CHAIRMAN: If in the event of a plant not having done anything with safeguards, but where a safety committee had been organized with a safety inspector, would the whole question of the first batch of guards really be decided by the central committee, and put up to the management? Also, how would the first inspection be made—would the safety inspector do it, or would the safety committee take the matter in hand?

Mr. GREENWOOD: We have men from the central committee who are familiarizing themselves with the plant by making inspections, and they get together to decide on the main points.

SIXTY PER CENT FOREMEN AND FORTY PER CENT WORKMEN.

Mr. BAILEY: The city office of the Carnegie Steel Company has its inspection force which makes recommendations for each plant, copies being sent to the department superintendents, who put them

up or not as they please. Two and a half years ago I was appointed Safety Engineer at our plant, with authority to put up what I thought was necessary. Then, last April, we started on the safety committee plan, all foremen being members, with nine safety committees, having a minimum membership of four men. The largest foremen's committee was in the Open Hearth and Merchant Mills, with 15 to 17 foremen; but at the end of three months the organization was changed, the committee then consisting of 60 per cent of foremen and 40 per cent of workmen, the preponderance of foremen being due to the fact that we thought the foremen knew better what kind of work to put in, and how to enforce on their men the rulings of the committee. Each committee has a secretary, and a Safety Engineer is a member of each committee; and either he or one of his assistants attend each committee meeting. Two copies of the minutes are prepared, one being kept by the department superintendent, and the other going to the Safety Engineer. If a shop order is required, the Safety Engineer issues that order and sends it to the Department Superintendent for his approval. If he does not approve it, it goes to the higher authority, there being no central committee as yet. If the General Superintendent approves it, it goes to the shop and is put up under the direction of one of the members of the committee, who has made the recommendation. The plan of having workmen and foremen on the same committee has worked successfully, and it has been found that the workmen are making more recommendations than the foremen, because they are freer to make recommendations, and do not feel any restraint.

It is our intention to make the chairman of each plant committee a member of the central committee (that is, nine chairmen), together with three or four department superintendents; and in this manner the central committee will be formed. In the primary committees, which hold meetings every two weeks, each man is asked what accidents have happened in that period, and he is required to explain the mishaps. If there is a serious accident—one liable to be over 10 days—the foreman of that man gathers three or four men on the committee and makes an investigation of the occurrence, all going to the scene of it with the safety inspector.

Mixed Committees.

Dr. L. W. Chaney: As regards "mixed committees" it is necessary to find out by experience as to their workability; but it is my belief that "mixed committees" may serve an exceedingly useful purpose in the educational work to be done. During my discussion of a "combined" committee of this nature with a great many iron and steel men, practically every one of them has, so far, said that it would not work. However, one can never tell whether a thing will work or not until one has put it into practice; and I am glad to see it being tried out.

Mr. Unger: As regards my company (Clairton Steel Works) we are all organized on about the same lines as those described by Mr. Bailey; the workmen on the committee mix with the foremen; and we have endeavored, when the workmen make a recommendation, to try to complete it as soon as possible, in order to encourage the workmen. This plan works out satisfactorily.

Education Better Than Mechanical Safeguards.

Mr. A. H. Young: Since December, 1912, we have had the "combined" committee at South Works, with a preponderance of workmen. The whole system consists of a departmental safety committee in each department, composed of from four to as many as nine men, depending on the size of the department. They go down to the machinist, the machinist's helper, and so on. On either the first, second or third of the month, the committee is required to make an inspection of the department, inspecting not only for safeguards but for dangerous practices; and it is felt that progress has been made at South Works to a point where so much stress cannot be laid on mechanical safeguards, as on educational features. Only 8 per cent of the accidents last year could have been avoided by the use of mechanical safeguards, if it could have been possible to imagine in advance the use of that safeguard. About 21 per cent were "trade risks," unpreventable or unavoidable; and approximately 70 per cent were due to careless acts on the part of workmen. The committee making the inspection must present a written report, which comes before the inspector as secretary of the plant committee. The other copy, the original, goes to the superintendent of the department, and he is given until the fifteenth of the month to determine his attitude on the recommendation. After the fif-

teenth, a calendar is prepared, for consideration of the Plant Committee on Safety, showing all the disapproved items in all the departments. A card system takes care of recommendations, one set of cards being for "open" and the other for "closed" items. These recommendations are of particular value because of the co-operation of the workmen. It is my opinion that everyone who tries it out will find no argument against the combination of workmen and foremen. The feeling of freedom among the workmen is probably due to the desire they have to "demonstrate," and get before the management to show their own ability. On these committees the workmen are encouraged. Moreover, we have an assembly hall near completion where, by stereopticon slides, the men can see every recommendation that can be photographed, dangerous practices included. The object is to inculcate carefulness in the employes, and insure a closer touch with the men.

Replies to Interesting Questions.

The Chairman: Mr. Young, why has the "mixed committee" given you better results?

Mr. Young: These better results are due, in the first place, to the fact that the workman on the committee is the man who is a little different from the ordinary. He is not the "plodding" man, but the man who takes an interest in things generally, and has ambition coupled with some initiative. Then, secondly, the interest among the committeemen themselves is broader and better and proves to the men that the management is vitally interested in them.

Mr. Shields: Do you find, Mr. Young, that most of the accidents are among the foreign element?

Mr. Young: No, I do not. I think the foreign element is more cautious than the American-born workman. The foreigner, however, is more clumsy and, if not shown the danger, is more liable to get hurt. But the American will take chances that a foreigner will not.

The Chairman: Mr. Young, as a permanent factor in these workmen's committees, would you prefer to have a preponderance of workmen?

Mr. YOUNG: Yes—although, to begin with, a preponderance of foremen might be adopted, with some workmen in at the same time to convince the workmen from the start. The selection of workmen in our own case, although originally made by the superintendent of a department, is going to be changed to election by the men themselves. An important factor in organization is a systematic method of inspection and reporting, with proper following up of each recommendation. Suggestions made by recommendation must not be forgotten, as this disheartens the men.

ACTING ON WORKMEN'S SUGGESTIONS.

Mr. JAMES M. WOLTZ: There are two safety inspectors at my company's plant, both of whom were workmen there. They go through the plant, and if they find anything in any department which they think needs attention, they go to the superintendent of that department and talk the matter over with him. If it is agreeable to the superintendent, they come to me and make a report on a form which I have. I then approve or disapprove of it. If it is approved it is written on triplicate form: The original goes to the General Superintendent for his approval or disapproval, and then comes back; and the duplicate and triplicate of that form go to the superintendent of the department. After he completes the recommendations he sends the triplicate back to me, with the information as to what has been done; or, if he disapproves of it, his disapproval. If it is disapproved it is then taken up with the General Superintendent and he finally decides what is to be done in the matter. In keeping a record of these recommendations, they are all numbered, and "completed" and "uncompleted" files are maintained. These are kept numerically. To keep track of the recommendations I have a form with the numbers and opposite that the date approved by the general superintendent and the date a recommendation goes to the Superintendent of the Department. If at the end of thirty days there is no reply, a form-letter is sent to the Superintendent to ask why, and requesting an immediate answer. Then the final date of completion is put down on this form. In the main plant there are 48 policemen, day and night, and 12 in the other two plants. These men make daily reports to me, after they go off duty, of any irregularity that may be found, or of any unsafe conditions, and these re-

teenth, a calendar is prepared, for consideration of the Plant Committee on Safety, showing all the disapproved items in all the departments. A card system takes care of recommendations, one set of cards being for "open" and the other for "closed" items. These recommendations are of particular value because of the co-operation of the workmen. It is my opinion that everyone who tries it out will find no argument against the combination of workmen and foremen. The feeling of freedom among the workmen is probably due to the desire they have to "demonstrate," and get before the management to show their own ability. On these committees the workmen are encouraged. Moreover, we have an assembly hall near completion where, by stereopticon slides, the men can see every recommendation that can be photographed, dangerous practices included. The object is to inculcate carefulness in the employes, and insure a closer touch with the men.

Replies to Interesting Questions.

The Chairman: Mr. Young, why has the "mixed committee" given you better results?

Mr. Young: These better results are due, in the first place, to the fact that the workman on the committee is the man who is a little different from the ordinary. He is not the "plodding" man, but the man who takes an interest in things generally, and has ambition coupled with some initiative. Then, secondly, the interest among the committeemen themselves is broader and better and proves to the men that the management is vitally interested in them.

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ports I turn over to the inspectors, who forthwith make an examination.

Mr. R. C. ROUTSONG: We have had no separate organization of safety men, and no safety committee as such—all recommendations (except those made by the millwright and his men who install and look after the machinery and make inspections of it whenever they are called to fix belts or make repairs) come from our suggestion systems. I am not convinced of the propriety of combining workmen and foremen in committees, and deem it a little hazardous.

ONLY WORKMEN ON COMMITTEES.

Mr. C. M. BRADING: Our company has tried only workmen's committees, appointed by the Superintendent of the Department and changed from time to time. The foremen are not brought into the question at all. We are thoroughly satisfied with the work of the workmen's committees. There are 105 men still in our employ who have served on safety committees, and they have made over 1,200 recommendations, 90 per cent of which have been accepted by the company. About 5 per cent or 6 per cent were continued for further investigation, and 4 per cent or 5 per cent were turned down absolutely.

The CHAIRMAN: Mr. Brading, do you think that the interest of the workmen on these committees falls away as time goes on; and that a foremen's committee between the central committee and the workmen's committee is essential?

Mr. BRADING: No.

The CHAIRMAN: Has a lack of interest been felt on the part of the foremen, and would it help to give them an active part on some committee (either a separate committee or a "mixed" committee)?

Mr. BRADING: The foreman has not much chance to forget the safety movement, for the reason that he is talked to about every accident that happens to his men, and he has to fill in the usual report to the head of his department and also to the safety department. The attitude of the foremen toward the workmen's committee is all right.

Mr. E. G. TRIMBLE: My company (the Employers' Indemnity Exchange, Kansas City, Mo.) is a co-operative insurance organization, whose main business is to prevent accidents, but along with this, to pay compensation. It is my opinion that the only opportunity for interesting employers in safety movements in their own plants would be through traveling inspectors, who are in very close touch, because they handle it for one industry alone, and through the company's office by a Safety Engineer. The plants in which I am specially interested are mainly laundries.

SAFETY WORK IN SMALL PLANTS.

Mr. J. C. YOUMANS: In my territory there are a large number of plants which employ 5 to 50 men; I know of a few small plants that have tried out the question of "workmen's committees," but it has not proved a success because the employer says in about two months the interest lagged.

The CHAIRMAN: This must be the fault of the management, as I cannot see the fundamental difference between a small plant and a department.

Mr. CHARLES B. SCOTT: It is my opinion that the problem waiting solution in the small plant can be disposed of only by organizing every man in that plant into a safety body, and proceeding along educational lines; and this is more important than the system of committees of inspection or anything else in connection with the work.

Mr. TRIMBLE: These small plants are very important. There are 6,000 steam laundries in the United States, besides hotel laundries and institutional laundries. Moreover, nearly 7,000 people are employed in these laundries, who are more or less in danger, from the office force to the most hazardous part of it, and some of them are hurt every month.

The CHAIRMAN: I am unable to discern the difference between a department of 50 men and a plant of 50 men, and maintain that as good results should come from a committee of three in a plant of 25 workmen as in any other department. The superintendent, however, must be really interested, understand safety, and properly

organize his workmen. Then interest can be maintained and results secured from the small committee mentiond. A big organization must not be thrust upon the small plant.

A Safety Man on Every Floor.

Mr. Luther D. Burlingame: I may give some details as to what the Brown & Sharpe Manufacturing Company are doing. I have organized a department along rather novel lines. A safety man, specially appointed, is on every floor of the shop. Each building is grouped together, so that the safety man from each shop is a part of the committee representing that building. Then there is a General Committee of Three, with a secretary, to whom all those suggestions are made from the man in charge of each floor. The man on each floor is supposed to maintain constant oversight. He is supposed to give half an hour a week of specific time to the work of watching and seeing that proper safeguards are applied and that the men are pursuing safe methods. He makes reports on a form which has been given to the secretary of the general committee. Those notes, where they are simple suggestions, are cared for in regular order and attended to, but all things which are of vital importance, or which would be far-reaching, perhaps, in influence, are brought before the General Committee of Three, which meets every month. Once a month the general committee of six or eight men from the separate floors come together and make inspections of that whole building and compare notes, and then these are brought before the general committee and that knowledge is disseminated among the different buildings. That keeps a small working nucleus in each group, so that it is workable, and very satisfactory results are obtained. The committeemen are not foremen as a general thing. There are exceptions, but there is generally among the workmen a qualified man whose time is free enough to take time to do it, and these men are appointed for one year. A notice is put up saying that these safety men are the safety inspectors for their particular floors, and any suggestions from the workmen are to be made to them.

Mr. Smith: We have had safety men in different gangs, and our company is prepared to give them a safety button and badge, so that they would have authority to push their suggestions along.

Second Session, Wednesday, September 24, 1913—Subject, "How to Reach the Foreman." Chairman, Mr. C. W. Price, Assistant to Wisconsin Industrial Commission.

The following gentlemen took an active part in the proceedings:

The Chairman.

R. J. Young, Manager, Department of Safety & Relief, Illinois Steel Company, Chicago.

Walter Greenwood, Safety Inspector, Youngstown District, Carnegie Steel Company, Youngstown, Ohio.

L. W. Chaney, United States Department of Labor, Washington, D. C.

E. M. Atkin, Manager Service Bureau, Yale & Towne Manufacturing Company, Stamford, Conn.

W. E. Firth, Safety Engineer, Midvale Steel Company, Niceton, Pa.

L. A. DeBlois, Chairman Safety Commission, E. I. Du Pont de Nemours Powder Company, Wilmington, Del.

H. M. Bailey, Safety Engineer, Carnegie Steel Company, Duquesne, Pa.

B. C. Christy, Safety Engineer, International Harvester Company, Chicago.

J. R. Brownell, Safety Engineer, The Pennsylvania Steel Company, Steelton, Pa.

D. R. Kennedy, Special Agent, Youngstown Sheet & Tube Company, Youngstown, Ohio.

H. B. Smith, Safety Inspector, Illinois Steel Company, Joliet, Ill.

C. M. Brading, Superintendent of Safety, Wisconsin Steel Company, South Chicago, Ill.

N. B. Ludlow, Chief, Safety Department, Lackawanna Steel Company, Buffalo, N. Y.

David Pryde, Master Mechanic, City Mills, Carnegie Steel Company, Pittsburgh.

Charles B. Scott, Manager, Bureau of Safety, Middle West Utilities Company, Chicago.

George A. Rigby, Master Mechanic, Carnegie Steel Company, New Castle, Pa.

J. D. Hackett, Safety Engineer, Nichols Copper Company, Laurel Hill, N. Y.

Thomas Ewing, Assistant to President, National Tube Company, Pittsburgh, Pa.

A. H. Young, Supervisor Labor and Safety, Illinois Steel Company, Chicago.

VIEWS EXPRESSED BY THE SEVERAL SPEAKERS.

Mr. R. J. YOUNG (Illinois Steel Company): I wish to correct an erroneously formed impression that only two companies possess safety committees in which we have the foremen and workmen combined. This system of mixed committees is, however, practically the organization at all the plants of the corporation; and, to my mind, the first essential in stimulating the interest of the foremen is to have enthusiastic co-operation on the part of the management, the plant managers, and the superintendents. If this be forthcoming, there is little doubt that the foremen will respond. To effect this, different methods must be employed. In one plant, for example, we gave a large banquet to the foremen, at which the president and other high officials of the company talked to the men, who thereafter responded. Very good results have accrued from this banquet, as the views exchanged at it made a lasting impression on the men. Then, again, we employ competitive schemes, with prizes as the rewards. One department may compete with another; or, if a specified department can meet a certain "bogey" set for its accident prevention work, then the foreman of that department will secure a prize; while, in some departments, we award prizes to all the men as well as the foremen. This "bogey" system is worked in conjunction with a large fund from which the foremen will be paid a certain percentage on the accident reduction. For example: If the "bogey" is 7 per cent of accidents, and if the mishaps can be reduced by that figure, the foremen receive cash at the end of the year in accordance with the amount of the diminution and the number of men employed. I may mention, incidentally, that the National Tube Company started a bonus system at the beginning of 1912.

FIRST STEP IS TO REACH THE FOREMAN.

The CHAIRMAN: Mr. Young, suppose you were tomorrow appointed safety inspector of a company which has never done any safety work, what would be the first step you would take to reach the foremen?

Mr. R. J. YOUNG: Assuming that the management is very enthusiastic as regards accident prevention, the first step would be the organization of committees, and the fostering of the foremen's interests as a *sine qua non,* one special point which interests the foremen being the investigation of accidents which happen in their particular departments. The foremen, or the "mixed" committee comprising the foremen and workmen, and their superintendent, will investigate accidents, and report how mishaps took place. In this fashion, the superintendent again comes in contact with the committee on accident prevention; talks with them on the way in which the accident occurred; goes over their suggestions; and instills in them his enthusiasm in accident prevention, coupled with his keen desire to avoid mishaps. This is the "personal contact." As you know, over 80 per cent. of accidents are due to carelessness, and can be obviated only by the men being more wary. The men must be made to feel the desire of the superintendents and management that only the minimum of accidents may happen.

The CHAIRMAN: How often would you have the foremen meet?

Mr. R. J. YOUNG: Once a month is ample for them to assemble, one meeting being formed by those on day-duty, and the other formed by those engaged in night work. We not only go over all the accidents of interest to these foremen, and discuss safety devices with them, but also take up other matters of moment. We ask their advice as regards prizes for the men, if they keep accidents under a specified percentage. This monthly meeting plan enables the superintendent to reach the foremen with a minimum expenditure of time, and in a more efficient way than he could do it individually.

The CHAIRMAN: Do you know of any other more effective way in which a superintendent can keep the foremen interested?

Mr. R. J. YOUNG: I do not think there is any better or more

efficient procedure than that of these foremen's meetings. In addition to the points I have laid down, it is essential to bear in mind that the departmental safety committee will make a monthly inspection; and, after its completion, will take up with their superintendent the items that have been launched, telling him why such and such a thing ought to be done, and what dangerous practices have been discovered. This work of looking for dangerous practices is very important, as it involves not the mere scrutiny for guards in each place where guards should be installed, but also examination of the work to ascertain if some safer method cannot be devised of doing it. If the superintendent finds some recommendations which, in his opinion, are not applicable, he is in a position to demonstrate the impracticability of them; but, of course, the committee may be able to prove to him that they are feasible. This method of procedure foments the feeling of a "square deal" on both sides.

ENGENDERING A FRIENDLY SPIRIT OF RIVALRY.

The CHAIRMAN: How far would you go, Mr. Young, and what method would you adopt, to engender a friendly spirit of rivalry which would be a spur to all the foremen? For example, comparisons of past departmental records, or department against department, on record of accidents, circulating reports, monthly reports, and so forth?

Mr. R. J. YOUNG: We publish, monthly, what is called the "Safety Bulletin," in which appears a comparative accident chart of the Illinois Steel Company, in which similar departments are grouped. The department making the best record is assigned top place; and we have found that this comparative chart is creating much interest among the men. The previous year's record of each department is also shown.

Mr. WALTER GREENWOOD (Carnegie Steel Company): You do not take the "hazard" of the work into consideration in making the estimate? Do you not give the department with a great hazard a handicap for comparative purposes? Such handicapping would mean that one department would be compared with another according to its hazard, so that all could enter the comparative contest, and show the percentage of reduction or increase which had taken place in a department.

Mr. R. J. YOUNG: I understand what you mean. This has had much consideration; but we have never found a practical way of accomplishing it. Or, in other words, we have been unable to launch a scheme which will prevent the men of the hazardous department maintaining that they have not been given a fair deal on an equal basis because the handicap is not sufficient. The National Tube Company, in formulating their "bogey" plan for foremen, almost decided that all departments were similar in hazard. If an accident occurs, something is wrong, and something exists which may be removed, and thus cut off the cause of casualties. Here, however, out West, we have not been able to convince ourselves that such a method is equitable. We still feel that in handling hot metal there is a greater hazard than that existing in the yards, for instance.

The CHAIRMAN: Mr. Young, do you think you could keep your foremen spurred up without some sort of comparative report, showing past and present records?

Mr. R. J. YOUNG: I do not. I maintain it is absolutely essential to have this comparative report, competitive features and prizes. The competitive feeling is of value; and the prizes given are something tangible for the men. One of the gifts—all of which bear safety slogans—was safety pencils. Gifts of this nature do not cost much. The prices run from five cents to fifteen cents per article; and they have that "tangible" element which appeals to the men. Every man in a department gets one simply because he has been able to keep accidents under a certain percentage.

The CHAIRMAN: A certain company has a comparative report, which shows, each month in turn, where the foreman, the workman or the company was at fault.

Dr. L. W. CHANEY (United States Department of Labor): Absolutely bad.

The CHAIRMAN: Wait a moment. Not only that, but if a bad accident happens at the works, a note is placed on the bulletin boards, notifying how the accident happened in such and such a department; and the foreman is in disgrace. What do you think of that, Mr. Young?

Mr. R. J. YOUNG: I agree with Dr. Chaney in the first instance. No value, I believe, would be derived from that. I think, however, it is a very good scheme to post notices of accidents, explaining how they happened. My own company does that. But it is not of much value to the men to know that any particular percentage of the casualties are due to their own carelessness, and then say that 10 per cent incidental to the working hazard cannot be guarded against. Five per cent carelessness on the part of the foreman or that of the company would come under the same category. The men feel that it is not only unfair, but it lacks veracity.

Mr. GREENWOOD: Don't you think this is a matter of great importance, which, in effecting your statistical records is, moreover, very valuable?

Mr. R. J. YOUNG: That is noted in our statistical records. Our central committee of safety analyzes every accident which involves an absence of over ten days from work, and it is placed in a class —"Trade Risks" or "Company's Carelessness," divided into seven distinct branches; and "Workmen's Carelessness." split up into four. I do not think, however, that any useful purpose would be served in giving this data to the men.

Mr. GREENWOOD: Are you not of the opinion that the statistical record had great value in enabling you to determine what you were going to do?

Mr. R. J. YOUNG: You have to investigate every accident, if any attempt is to be made to eliminate them.

BOOK OF RULES.

The CHAIRMAN: Are you of the opinion, Mr. Young, that it is indispensable to have a book of rules for the foreman, which lays down, in plain black and white, what the management term "Safety"?

Mr. R. J. YOUNG: Perhaps the innate value of the book of rules is overestimated. We have been issuing books of rules since 1904, and I think they are of value. These books are given to workmen as well as foremen, and I feel that they are of assistance to the

workmen, almost as valuable, in fact, as giving them to the foremen. With such a book of rules, printed in different languages, it is possible to enforce disciplinary measures. These rule-books are compiled from a study of actual accidents that have happened, and outline the precautions we have found it necessary to adopt.

Mr. E. M. ATKIN (Yale & Towne Manufacturing Company): In connection with this book of rules, I desire to ask Mr. Young if he thinks it would be consistent to have some matter in that book which would interest the foremen outside of the rules themselves. To specify: I am compiling such a book, and, based on the theory that formerly the foremen have taken these rule-books and left them at home where they have been lost, the book will incorporate a calendar for the remainder of 1913, and for 1914—all the fire-alarms in the city of Stamford and the time of the tides, there being a great many yachtsmen and fishermen among the employes. On the calendar, the pay-days are indicated in red ink, or by a red ball. Every time a fire-alarm rings, these men will stop and count it to see whether it is near their home. Then they will refer to their book of rules to see where the fire is. And the chances are that in some psychological manner, they will learn a rule while looking up the fire-alarm. I merely suggest this.

Mr. R. J. YOUNG: That is a somewhat unique idea, which I think would possibly be of some value if too much extraneous matter be not given in the book, which might perchance cause the rules themselves to be lost sight of. In regard to our own book of rules, however, the foremen must take an examination upon it; and must attain an efficiency of at least 90 per cent. When they do this, they are given badges of distinction. We also carry this down to the workmen.

Mr. W. E. FIRTH (Midvale Steel Company): Have you any arbitrary standards for gauging accidents?

Mr. R. J. YOUNG: The number is an arbitrary one. When we started, we made it two weeks; but, after experience this was reduced to ten days. Actually, at present, it is seven days; and perhaps we may drop it to five days. It is an arbitrary figure, based on no particular reason.

Mr. FIRTH: We found that men who had an accident, and were injured for probably only five days, would belong to some other benefit association, which paid them perhaps seven days' compensation. We accordingly made it seven days or over.

The CHAIRMAN: When we organized a certain company, a book of rules was adopted; and that assisted me, as a safety inspector, more than any other thing. This book of rules eliminated all discussion as to what we now mean by "Safety."

Mr. H. M. BAILEY (Carnegie Steel Company): The Carnegie Steel Company set their time limit at ten days, because that is the corporation relief plan.

Mr. B. C. CHRISTY (International Harvester Company): Mr. Price, do you not think that all members of the National Council for Industrial Safety should prepare their statistics at a certain date, instead of some for seven days, some for ten days and some for two weeks? It is important we should make our records agree, because, if these statistics be compiled, we shall want them later on.

Mr. R. J. YOUNG: In this connection, although, in our central committee of safety, we are considering these accidents over a certain period, our records throughout the corporation are divided into "No Lost Time Accidents," "Accidents, one to seven days," "Accidents, seven to ten days," "Accidents, eleven to thirty-five days," "Accidents over 35 days" and "Fatal Accidents." If a man loses a finger-joint, but immediately returns to work, he still goes into the "Over 35 Days" category.

Dr. CHANEY: I desire to again touch upon the handicapping question as a means towards the maintenance of interest. The main basis for handicapping would be actual rates of injury. The rates in the report on the iron and steel industry are reduced on the basis of 300 days for levelling-up purposes; and I believe that these statistics are sufficiently extensive to permit that in the different main departments of the iron and steel business handicapping could appropriately be applied on the basis of these rates. The rate in the Bessemer Steel Mill is the highest, and runs down to the different departments. My impression is that such handicapping, based on the actual rate of a very wide range and a considerable period, would be equitable to all concerned.

Furnishing Foremen With Information.

The Chairman: One point not as yet touched upon in this discussion is the value, in initial organization work, of affording the foremen information in the shape of photographs, etc., from other companies which have already worked out a safety plan.

Mr. Atkin: We have not worked along the "photograph" line; but have had subscriptions taken out for *Safety Engineering* in the names of our individual foremen. The effect of the receipt of this magazine regularly is to make the foremen feel important when they think that the company is of opinion that they are almost exclusively in charge of the accident question under the supervision of the safety engineer and the superintendent. When the foremen get this magazine monthly, not only will they figure out things that are occurring to them, but other matters will be called to their attention. The ideas culled from this publication act on the men as an indirect stimulus to the safety movement.

Mr. J. R. Brownell (Pennsylvania Steel Company): On commencing my work in the safety movement, I visited other plants; and also got together different forms and differing rule books. It is well to thus collate data which has taken years to work out, as it greatly simplifies matters. The free manner in which information is afforded to men who are starting up safety work is really most commendable.

Handling the Foreign Element.

Mr. D. R. Kennedy (Youngstown Sheet & Tube Company): In our plant we have a large proportion of inexperienced foreign workmen, who cannot read a rule-book even if it is printed in their own tongue, and could not comprehend it even if they were able to peruse it. I know that 90 per cent of our accidents are among this category of men. How, then, can these employes be reached through the foreman?

Mr. H. B. Smith (Illinois Steel Company): At Joliet we have a man in the safety department who is a linguist; and his duty is to meet every new man as soon as he arrives at the plant and talk "safety" to him. He will also speak with a group of newcomers about the rules. This works out well. If a plant is very large,

more interpreters should be employed to properly handle the work. Of course, these interpreters must be conscientious men if satisfactory results are to be attained.

Mr. KENNEDY: There is always the trouble, however, that many men will say they understand what is told them, when, in reality, they do not comprehend. To me, it seems essential to start with the most elementary moving pictures, or with some simple statement on a bulletin board. This foreign element is a difficult problem to deal with efficiently.

Mr. SMITH: As regards results, I will tell you what our interpreter has enabled us to accomplish. In our mechanical department, last month, where we have sailors, boilermakers, electricians and that class of help, we did not have an employe who lost more than seven days. And all this with more than 750 of them.

Dr. CHANEY: Mr. Chairman, I desire to vigorously protest against this conception that the foreign element is not approachable. I maintain that it is not childish or inept; and, from my six years' study of it, I am convinced of its intelligence. If you get to it, results will be forthcoming; but if you do not do so, the fault does not lie at its door.

INTERPRETERS FOR FOREIGNERS.

The CHAIRMAN: Do you not think, Mr. Smith, that when you can get a man who can talk to, say, a Pole in the latter's tongue, that man will know, when he leaves the Pole, whether or not the foreigner understood him?

Mr. SMITH: Yes, I am perfectly confident of it, for that has been the result yielded in practice. We have had our interpreter a year now, and the system has made itself indispensable. We lost him once for about a month, and the foremen of the plant were asking, in a quandary: "Where is the interpreter, where is the interpreter?"

Mr. KENNEDY: In a small plant, the men are easily reached through the "personal relation"; but when you get above 3,000 or 4,000 or 5,000 men, you cannot properly exploit this "safety-interpreter" idea. They hire and fire green men before you can find

that they are even in the plant. Suppose you had hired 100 in a day. Suppose you had fifteen interpreters in your employment. If you have three or four employment offices (as we have), you simply cannot have fifteen interpreters at every such office in the plant. It may be all very well for one to speak in a flippant fashion, and maintain that one can hire enough men to cope with the situation. But you really cannot engage fifteen or twenty interpreters to work day and night turns. Nor can you secure a man who speaks every language where you have such a heterogeneous mass of workmen coming in. The figures and facts of every large steel corporation will show that 90 per cent of accidents happen among the foreign element. The great advance has been among the American and Americanized element. It is really a constant struggle with the new men. Indeed, our accident reports show that 60 per cent of the casualties occur to men who have not been employed for more than sixty days.

Mr. SMITH: Our interpreter is not in the employment office, but out in the plant. His duties are with the safety department; not with the employment section. When a new workman arrives at our plant, he must go through the employment office; and his name is put on a little square slip of paper, a copy of which is given to the interpreter in the morning.

PROPORTION OF ACCIDENTS AMONG FOREIGNERS.

Mr. R. J. YOUNG: It is somewhat strange that our statistics do not bear out Mr. Kennedy's contention as to percentage of accidents among the foreigners. Probably 75 per cent of our employes are foreign-speaking men; and we have found in special investigation that our accident rate, per number of employes, is greater among our English-speaking men than it is among the alien element. This is true, taking the plant as a whole. From experience, we have not found it difficult to get the foreign community to comprehend the safety movement; and we have also proved that the book of rules is helpful in dealing with claims. Before our relief plan went into operation, and a man had violated a rule, we furnished him with that rule in a rule-book, and he then knew the outs and ins of the matter. Moreover, we have approached the priests in the vicinity of the plant, and have asked them to talk to the men in

church regarding the rules. This has been done by the priests; and it has been published in their foreign papers, along with other little schemes to foment interest.

The CHAIRMAN: We have found the church a great help in the matter.

Mr. L. A. DEBLOIS (E. I. Du Pont de Nemours Powder Company): In a great many rule-books there appears the rule or statement: "Foremen will be considered accountable for injuries happening in their department." How is this put into practice? How do the other companies follow this up, and what is done to a man when a serious accident occurs in his department?

THE MATTER OF DISCIPLINE.

Mr. KENNEDY: For a long period prior to six months past, it has been the custom in our plant to hold a foreman or a witness for the purpose of the lawyer in developing the case later on; and we have gone far enough in the movement to discharge a man, whether he is the only witness or not, if he is responsible for the accident. I know that this has been done by many other concerns. I think that the foreman, if responsible, should be immediately discharged; and a notice might be posted in the plant that his services had been dispensed with because he overlooked a rule, or was culpable in respect of the casualty. I believe that this has had a greater and more wonderful effect in our plant than rules, regulations or anything else.

The CHAIRMAN: Does anyone think that this is too severe?

Mr. SMITH: We carry out the same practice, only we have a printed form which requires the foreman to report cases of "discipline," so that these may be posted on the bulletin board and achieve good results. You must "educate" your foremen until they comprehend. You could have a foremen's meeting, and talk the safety problem to them for ten minutes to half an hour; and I think this will ensure interest on the part of every foreman, inasmuch as in practice the men have been prone to ask: "When is the meeting —what is the time for it?"

Mr. C. M. BRADING (Wisconsin Steel Company): On this topic of discharge of foremen—all the departments have from four

to ten foremen, who are responsible to the general foreman of the department. To me it seems hard, in a case like this, to pick out the foreman directly responsible for the injury. Of course, I can readily see that if a man is working on a piece of machinery under the millwright foreman, for instance, and he forgets the use of the danger sign on the point where the power is turned on, then the millwright foreman is to blame for the ensuing mishap. But, take the case of a number of men bundling steel in the mill ready for shipment. Suppose that two of these are working at each end of the steel, bundling it up. And just as another man passes by, the men throw down the bundle, which strikes and injures the man. Who is to blame? If a department is composed of 400 or 500 men, and possibly ten foremen, who is really the responsible party?

Mr. KENNEDY: If the two men drop the bundle, they are culpable. I merely said "foremen" because we were discussing foremen. However, if you can pin the responsibility to the foreman, then discharge him. The head-foreman of a large department may have 100 foremen under him. If he has told a sub-foreman what to do in a certain situation, has explained the rules to him and given him his orders, then his duty has been done towards that sub-foreman. Accordingly, if the sub-foreman incurs a dereliction of duty, he must go.

SEVERITY OR CO-OPERATION.

The CHAIRMAN: I should now like a discussion on these two methods of lining-up foremen. On the one hand, we have a severe method—rigid, disciplinary measures. On the other, the plan adopted by a good many safety men here of securing the foreman's co-operation, and of whetting his interest to such a pitch that he is thoroughly on your side and that of "safety." Of course, the matter of "discipline" is important.

Mr. N. B. LUDLOW (Lackawanna Steel Company): I believe that we must depend almost entirely upon our foremen. And it scarcely seems to me that a line of discipline should be necessary; but, if it is essential, then it should be enforced. A little severity must be shown; but, essentially, the point of discipline has not been requisite with us. We have a general meeting every six months, or

every three or four months, when a heart to heart talk takes place with the foremen and sub-foremen. This meeting, for these men exclusively, keeps their minds enlivened, and makes for enthusiasm. They must not be allowed to forget that we desire safety results as much as anything else, and that we depend more or less upon them to reach the men. We have, it is true, encountered a certain degree of trouble in the maintenance of interest; and whenever we find that the foremen are becoming lax, we summon a meeting. Sometimes we do not call them all, but only a few picked out from certain departments.

The CHAIRMAN: Mr. Young says that they ought to have a meeting once a month, regularly.

Mr. LUDLOW: Well, we do not have a meeting of all the foremen once a month; but if we find that in a certain department they are becoming a little lax, we summon the millwright bosses, the millwright foremen, the turning foremen, the labor foremen, the electrical foremen, and other various men, to the office in the department; and then take up the question somewhat strenuously with them. We go over, with these men, the accidents that have really happened. Excuses are listened to; and each one is permitted to explain wherein he was not to blame. Thereupon, in cases where these men are really at fault, we enlarge upon the error, and impress it upon their minds in a manner which will prevent its being forgotten.

The CHAIRMAN: However, the general policy of your company is so to maneuver that the foremen are properly interested, and not to use "discipline" except where it is absolutely necessary.

Mr. LUDLOW: By all means.

Mr. GREENWOOD: It is a fixed policy in all business affairs to utilize coercive measures or coercive policy when essential; and the question of dispensing with such measures or policy is not discussable. We have to apply such tactics in some shape or form. The only disciplinary measures that are discussed, both in literature and in speech, are those pertaining to the point of "discharge." And now, from some remarks which have been made here, it would be assumed that a man who was responsible for an accident was discharged; and, when a new man takes the defaulter's place, this

fresh arrival really knows less about the work than his predecessor. However, it seems to me that when necessary it is entirely proper to use such stringent measures to enforce discipline.

Mr. DAVID PRYDE (Carnegie Steel Company): In view of what has been said regarding stringent measures against the foremen, I would like to ask in how many instances these discharges take place at various plants. I do not believe they will be numerous.

Mr. KENNEDY: I cannot tell you; but I can at least cite one specific case out of two or three occurrences that come to my mind at this moment. In our electrical department, we have a rule that no foreman or sub-foreman shall ask any of his men to go into a dangerous place where there is any moving machinery, without first going to the man in charge of that machinery or the foreman supervising that department. Some trouble occurred with a large crane in the open hearth plant. One of our best assistant crane-men was at work on the ram, which was pushed outside the crane right alongside our No. 2 Furnace. His foreman did not notify the man in charge of the open hearth run that this assistant was working there; and the engineer and brakeman on the dinky run came in, with the result that the assistant received a blow. The crane was pulled up in an unusual location, where, under ordinary circumstances, there was no occasion for a man to be standing. Now, we felt that the man who had charge of that electrician disobeyed a rule when he did not notify the crew in charge of the dinky and learn and advise that a man was working there; and the culprit was accordingly discharged. If he had been suspended for only two weeks, he would have laughed, and said that he had lost only six turns; but that would not have been discipline. Now, discipline is of varying degrees. You can suspend a man two turns in a fortnight; but there are cases where men must be suspended outright. The graver the accident, the more severe must the penalty be, because disciplinary measures must reach all through the men; and the lesson thus imparted must make a deep and lasting impression. The discharge of a foreman is effected only after discussion of the circumstances with responsible heads. Each particular instance is a case by itself, and receives independent consideration.

The Educational Side.

Mr. Charles B. Scott (Middle West Utilities Company): The most trouble we have encountered has arisen from the problem now under discussion. Our policy has not been to exercise strict discipline, and govern the men in this way, but rather to take up the educational side of safety work through monthly meetings. These serve to arouse proper interest. We have had very few cases where discharge would have been proper. Now, after all this exchange of ideas, I am convinced that the less stringent, or "molasses," method is the better; and I think our results have proved this. What we have to contend with is the desire of foremen to excel along other directions: such as production, and lessening of operation cost—points which seem to absorb their minds.

The Chairman: Don't you think, Mr. Scott, that the management should insist on the observation of "Safety" just as much as on the output of the plant; and that at the end of the year the men's record ought to be based quite as much on efficiency in safety work as on production? One day I saw a manager work along these lines most effectively. He said: "Beginning at 7 o'clock tomorrow morning at this plant the first order of business will be 'Safety.' The second will be 'Production.'" And the men knew that he absolutely meant this.

Mr. Scott: That is good.

Some Simple Mathematical Calculations.

Mr. Atkin: I think it is very instructive if all the foremen are apprised of a few simple mathematical calculations. For example, take a total payroll, and divide it by your aggregate number of employés. The general average resulting will be, approximately, 20 cents per hour. A man earning this 20 cents hourly must produce the interest on all the fixed charges that go to make up the earnings. He must create dividends; and I believe it has been figured by statisticians that this 20 cents must grow into 60 cents before a dividend can be paid, and all the interest on fixed charges. When a man is laid off on account of injury, he is losing 20 cents hourly; and it is certain that the factory is somewhere forfeiting 40 cents per hour. Logically, therefore, it is of twice as much interest to a foreman who is seeking to produce and give good results that he

shall not have a man idle or laid off. Not only are you losing the 20 cents which you must pay him in a liability case, and his damages compensation, but you must disburse, out of your own pocket, 40 cents hourly because that man is not producing for you. You must incur outlays to educate a new man to bring your production on a par with that of the injured man who has been educated to a certain extent; and you are losing the interest on the whole part of the particular work that he does during the period he is laid off. I think, therefore, if this simple little mathematical problem is presented to foremen it will strike them "in the pocket"; and they will see that it is doubly to their interests to keep that man working than to raise the employe's production by one-half cent or one cent an hour. (Applause.)

The CHAIRMAN: I think that is an excellent suggestion. I call to mind an instance of a safety engineer who brought this very point under the notice of the men on the first day he commenced work in the plant; and he did it in such fashion that not a single man was unconvinced of what the inspector intended to do. On the general question the facts can be brought before any individual man, and will serve to convince him as a business proposition which has been proved by experience.

ORGANIZATION OF DEPARTMENT HEADS.

Mr. GEORGE RIGBY (Carnegie Steel Company): At the New Castle Works of the Carnegie Steel Company, the plan we have followed for the past five years is that of an organization comprised of all the department heads. We meet every morning at nine-thirty, not only for operating purposes, but to take up all matters of safety, and serious accidents: *i. e.*, those of 35 days or longer, and, in addition, minor mishaps that may possibly have resulted seriously. Every department head has a weekly meeting with all his foremen, both for co-operative purposes and for safety; and the matter is then taken up with the assistant foreman. We find this a good method to reach the foremen; maintain their enthusiasm; and achieve satisfactory results.

The CHAIRMAN: Mr. Young, from your wealth of experience in these meetings with the men, do you find that as time passes, it becomes more difficult to maintain their interest?

Mr. R. J. YOUNG: We do not. With us, it is a growing factor. The men become more interested as they become more enthusiastic; and this enthusiasm as regards the safety movement increases steadily.

Mr. J. D. HACKETT (Nichols Copper Company): It is necessary to impress the cost of accidents upon the foremen. On every accident settlement that we receive we write in large red letters on the accident-report "This accident will cost us $1,000," or whatever the case may be. It then goes to the foreman; and, in a fashion, we probe his conscience as to the different methods of carrying on the work in relation to that specific casualty. Then we play our trump card, and ask him what effect accidents have upon production. To take a concrete case: that of a man who maintains that loading cars in a certain manner is more economical than freighting them in some other manner. If an accident happens, due to loading the car in this way, and costs, say $1,000, then it is easily demonstrated that if this method of freighting be adhered to, the cost of production will be offset by the cost of accidents.

SAFETY BULLETINS.

The CHAIRMAN: A number of plants have adopted this plan of placing in the hands of the foremen—say every week or every *month*—a note of one or two accidents which have actually happened. If you have several plants, or a plant with a number of departments widely separated, then issue a "Safety Bulletin." Well, should an accident happen that covers a weak spot, the safety inspector can very appropriately describe the accident in the bulletin, detailing how it occurred, what the disability was, what it cost the company, and what might have been done to prevent it. Logically, he should never refer to an accident where he cannot, at the same time, specify something that has proved a trustworthy safeguard. A safety inspector can say to a foreman "That is a dangerous point, and one where an accident may happen." But what impresses the foreman most is a direct statement that a man lost his hand, or that an employe was killed, "on that set screw." In Wisconsin we are pursuing this policy in our "Shop Bulletin." We put before the foremen in that State only information in regard to what has actually happened; not what the commission thinks may happen.

We also afford data as to what manufacturers are actually doing. I believe that these methods are very effective.

"Sugar" Better Than "Vinegar."

Mr. A. H. Young (Illinois Steel Company): Merely a word concerning the seeming difference of "sugar" and "vinegar" methods with our foremen. We of the Illinois Steel Company do discharge foremen occasionally on account of accident-records; but, to my mind, the "sugar" or "molasses" policy is the only one. We do everything possible to enlist the co-operation of the foremen. If, however, after many trials, we find that a man cannot assimilate safety principles and transmit them as his method, the only course open is to discharge him. I do not, however, wish to convey the impression that we are through with a man if he is not tractable in the first instance. This is not the case. Forbearance is essential. If, nevertheless, the method cannot be worked out with one particular person, it is due to no fault or defect of the method itself. One must simply commence to forge with a new piece, and continue the work.

Third Session, Thursday, September 25, 1913—Subject, "How to Reach the Workman." Chairman, Mr. C. W. Price, Assistant to Wisconsin Industrial Commission.

The following-named gentlemen took an active part in the proceedings:

The Chairman.

Mr. R. C. Richards, Chairman, Central Safety Committee, Chicago & Northwestern Railway Company, Chicago, Ill.

Mr. A. W. Slater, Safety Inspector, City Mills, Carnegie Steel Company, Pittsburgh, Pa.

Mr. David Pryde, Master Mechanic, City Mills, Carnegie Steel Company, Pittsburgh, Pa.

Mr. H. B. Smith, Safety Inspector, Illinois Steel Company, Joliet, Ill.

Dr. F. D. Patterson, Director, Department of Sanitation and Accident Prevention, Harrison Bros. & Co., Philadelphia, Pa.

Mr. Walter Greenwood, Safety Inspector, Youngstown District, Carnegie Steel Company, Youngstown, Ohio.

Mr. R. J. YOUNG, Manager Department of Safety and Relief, Illinois Steel Company, Chicago, Ill.

Mr. B. C. CHRISTY, Safety Engineer, International Harvester Company, Chicago, Illinois.

Mr. H. M. BAILEY, Safety Engineer, Carnegie Steel Company, Duquesne, Pa.

Mr. W. H. CAMERON, Manager, Casualty Department, American Steel Foundries, Chicago, Ill.

Mr. E. G. TRIMBLE, Attorney and Manager, Employers' Indemnity Exchange, Kansas City, Mo.

Mr. E. M. ATKIN, Manager Service Bureau, Yale & Towne Manufacturing Company, Stamford, Conn.

Mr. R. C. ROUTSONG, Factory Inspector, National Cash Register Company, Dayton, Ohio.

Mr. D. R. KENNEDY, Special Agent, Youngstown Sheet and Tube Company, Youngstown, Ohio.

Mr. J. D. JAMES, Safety Inspector, The New Jersey Zinc Company, New York, N. Y.

Mr. A. H. YOUNG, Supervisor of Labor and Safety, Illinois Steel Company, South Chicago, Ill.

Mr. C. L. YORK, Chairman, Local Safety Commission, General Electric Company, Schenectady, N. Y.

Mr. L. A. DEBLOIS, Chairman, Safety Commission, E. I. DuPont de Nemours Powder Company, Wilmington, Del.

Dr. WINTHROP TALBOT, Consultant in Work Conditions, Woolworth Building, New York, N. Y.

Miss ANNA C. HEDGES, 185 Emerson Place, Brooklyn, N. Y.

Mr. H. E. AKERLY, Secretary, Safety Committee, Kodak Park Works, Eastman Kodak Company, Kodak Park, Rochester, N. Y.

Mr. W. E. FIRTH, Safety Engineer, Midvale Steel Company, Philadelphia, Pa.

Mr. M. A. Dow, New York Central Lines, New York, N. Y.

The following is an abstract of the views expressed:

Mr. R. C. RICHARDS, in opening the debate, said: "In the Safety Organization of the Chicago & Northwestern Railway, we have

done everything possible to recognize the men; to make it their movement by practically putting the Safety Committees in their hands; by endeavoring to adopt every reasonable safety suggestion or recommendation made by the employees; and, where such adoption is not practicable, we have sought to explain the reason to the man who made it, so that he may be satisfied, and his continued interest kept alive. We have 780 men on our Safety Committees, who are changed every six months or every year; and 750 of these come from the rank and file. This means that we are turning out about 1,000 'safety men' annually; and this number is increasing as the mileage and business of the railroad grows larger. On our Shop Committee we seek to have someone from each nationality, so that he can interest his fellow-workmen who do not speak English. An endeavor is made to make each man responsible, in a measure, for accidents, by requiring him to report fully regarding the mishap; and many valuable indications reach us in this manner. I take it that the essential feature in safety work is to keep experienced men at their tasks in order to minimize the number of casualties. We agreed that no employee should be 'disciplined' the first time that anything happened; but that continued carelessness on his part after he had been cautioned should merit discharge. While we have paid due attention to mechanical safeguards, we attach more importance to the making of 'Safety Men' than to the making of 'Safety Machines.' The proper education of the men on the spot is of prime importance. In a word, more time and thought ought to be given to the man who does the work, and less to mechanical guards, rules, and so forth; and, this having been done, I believe we shall accomplish more than by any other means."

Mr. SLATER: I think we ought to make sure that properly guarded and safe machinery is bought in the first place—there is too much laxity on this point in certain quarters.

The CHAIRMAN: With respect to what Mr. Richards has said, I know some of you present will think that while these ideas may work out satisfactorily with high-grade railroad men, it is another proposition when a plant has 75 per cent foreigners among its employees. Therefore, Mr. Richards, what success have you had with foreign track hands?

Mr. RICHARDS: Not very much. Our plan has worked well among our intelligent men; but, as regards the lower-grade help, we have not really reached them with exception of the shop employees. Nevertheless, our track accidents show a reduction. To date, we have received approximately twelve to fifteen thousand suggestions from our committees, of which only about five hundred have been rejected.

The CHAIRMAN: I have attended three meetings of the Northwestern Railway Safety Committees; and have noted the enthusiasm on the part of the workmen, backed up by the great interest manifested by the inspectors. Never in my safety experience have I been present at any gatherings which have been characterized by such real spirit.

Mr. SLATER: Conditions that cause accidents in plants must be immediately remedied. Much of the trouble, as I have said, comes from haphazard purchasing of machinery. The men and the machines must be right.

Mr. PRYDE: In order to reach the lower-grade men, of whom Mr. Richards has spoken, the Carnegie Steel Company has ordered about one hundred bulletin boards. I would like to know if Mr. Richards has used these boards.

Mr. RICHARDS: We use these bulletin boards judiciously placed where they may be seen by the men, and post upon them reports of investigations of accidents, Safety Committees' reports, and statistics of the month's casualties. I do not, however, think that the notices on these boards are read to the extent that we had hoped.

Mr. PRYDE: Do you think that the bulletin boards could be profitably utilized by posting notices in different languages upon them?

Mr. RICHARDS: Yes; but under ordinary circumstances it would be too great a task to have such matter translated into five or six different languages in the usual class of shop.

The CHAIRMAN: I call upon Mr. H. B. SMITH, of the Illinois Steel Company, to tell us something of the practical value involved in having the foremen instruct the workmen.

Mr. SMITH: Formerly such instruction was not in vogue with us; but now a foreman must meet a new man within ten days, and

instruct him on the safety question. Moreover, the foreman must sign a card to this effect, such card also bearing the signatures of the interpreter and the workman himself. In the case of a foreigner, the foreman may have occasion to call for the services of the interpreter—it being the duty of the last-named to tell the workman about the company's book of rules, and ask him to learn them.

Dr. PATTERSON: Mr. Chairman, I desire to ask Mr. Smith to what extent this method has reduced accidents among new employees.

Mr. SMITH: While I cannot precisely tell you just how it has decreased casualties among the new hands, I am convinced that it is not always the new man who gets hurt.

Mr. GREENWOOD: My own investigation shows that 60 per cent of the mishaps were among new nem, i. e., men who have been employed under six months.

Mr. SLATER: In one particular plant of ours, we had seven accidents among men who had worked from only two hours up to six. How is this to be overcome?

Mr. H. M. BAILEY: Our greatest trouble is with accidents among the new men—those who have been with us under six months.

Mr. SMITH: We impress upon the new men, within the first three days of their arrival at the plant, the necessity for care; after which the foreman speaks to them. We keep at them along these lines all the time. The interpreter takes up the first part of this educational work while a man is actually engaged at his task. Last October the Illinois Steel Company gave a banquet to the ministers and priests in Joliet and vicinity; proved to them by stereopticon slides and word of mouth what the company was doing for safety; and then asked them to make the need for safety felt in the men's own homes. Moreover, last April we had a motion picture exhibition, at which some slides were also shown; and this was attended by several thousand school children. We told these children that the company had a rule book; that the safety-button was the reward for knowledge of these rules; and that if their fathers, brothers or uncles knew these rules, they would probably not sustain injury. In their homes, therefore, the children are prone to ask such relatives

if they have got the rule book; and, if these have been studied, why they do not have the safety button. This is one of the ways to interest the men in safety by bringing the point right to their own firesides. A Safety Bulletin, to be taken home by the men, is also published monthly in several languages. We also give prizes of some kind or other to each man in each department where no employee has been laid off for more than seven days. These gifts range in cost from five to sixteen cents, and consist of match boxes, lead pencils, fly swatters, caps, sharpening stones, pocket calendars, drinking cups, cuff buttons, and key chains with rings. These are much appreciated, and help to materially foment the safety movement. Results have been excellent, inasmuch as the percentage of accident-reduction in the Joliet works, as compared with ten years ago, is 70.7 per cent. At Joliet last year we prepared a "Safety Calendar" for every man; and when these are taken home, and pay-days are looked for, the words "SAFETY FIRST" stand out prominently. This has a decided educational influence. One of these calendars is also hung up in every chool room in the town. Our moving picture exhibitions have be n a real success. As regards the interpreter already mentioned, he is practically a hired man of the foremen; is out in the plant all day; and is continually at the service of these foremen. I have examined over 2,000 men at the plant in regard to the rules; and more than 1,500 of them have secured a safety button for proficiency in these regulations. Even some who could not read have obtained a button—they had the rules read out to them at home. The button is a goad to endeavor.

Mr. CAMERON: At our two largest plants, we utilize the services of two interpreters to get into contact with foreigners on the topic of safety. One of these can remember every face, and can speak twelve different languages. This procedure has been successful with us.

Dr. PATTERSON: I am convinced that the good results secured by Mr. Smith are in large measure due to his foremen observing much care in the matter of instruction. In the Harrison plant at Philadelphia, where we have had each foreman instruct the men in his department along safety lines, and make the foremen responsible for the new men not having accidents, we have largely eliminated casualties. Our accident-reduction has been 69.7 per cent in the plant

mentioned. At our Brill Car Works, where trolley cars are made of steel and of wood, there is a large amount of fast-moving machinery, and we have more or less of the foreign element to deal with. Our experience at this plant has been that the peril is centered in the new men—those who have been working up to three months—for 60 per cent of our accidents have happened amongst these employees. I maintain that the whole keystone of the safety movement is centered in the men; and that by so educating a man in his work as to avoid an accident and not injure himself or his fellows, you will achieve more than if a large sum be spent in guarding machines. The individual unit must be educated, and the safety question brought home to him, not only in his work, but in his own home circle. Our foremen play the principal part in safety instruction; and we have had our safety suggestions printed in imitation typewriting, wrapped up with a workman's money, and placed inside a sealed pay envelope. In many instances that pay envelope is opened at the man's home by some member of his family; and, in one way or another, the message it carries gets to the man's ears.

Mr. E. G. TRIMBLE: In Kansas there are several hundred different varieties of factories employing probably 2,500 to 5,000 or 6,000 people. What can a safety body do to rationally stimulate interest in Accident Prevention?

Mr. SMITH: Stereopticon views might be shown of what others have been able to accomplish. These would speak for themselves. Attention could also be directed to the subject in the churches.

Mr. E. M. ATKIN: I suggest that certain editors of newspapers in Kansas City be invited to a banquet, and be talked to on the safety question so that they may draw attention to it in their periodicals.

Mr. R. C. ROUTSONG: If Mr. Trimble can secure the proper equipment and the right men, he will find a response to the call of "Safety."

Mr. D. R. KENNEDY: I consider that in the case of a large single plant employing 9,000 men, and covering many acres of ground, it is difficult to have interpreters reach one or two hundred newly-employed men individually for instruction in a forty-two page rule book. These newcomers are moved about from department to de-

partment; and the interpreters and the employment department may not know where a new man is six hours after he has been engaged.

The CHAIRMAN: But it is perfectly apparent, in view of the large accident-reduction attained by the Illinois Steel Company, which is borne out by authoritative figures, that they must have some sort of plan which effectively reaches the foreigners; and that this plan is logically capable of expansion to meet the exigencies of much larger plants.

Mr. BAILEY: Probably the reason why the Illinois Steel Company's records show a reduction in accidents is that the hospital and the safety departments work hand in hand. If a man in their plant gets one finger cut or fractured, but can still use the other hand, he is put back to some light work; but the surgeon-general of the Carnegie Steel Company is opposed to this practice on the ground of the danger of possible infection.

Mr. R. J. YOUNG: The fact is that no man is allowed to return to his work without the doctor's sanction. The days of disability are closely watched by us; if a man wishes to resume his duties before his injuries are entirely healed he may do so, provided the prior consent of the doctor is secured. Our infection cases are less than 1 per cent of the men treated.

Mr. SMITH: If a man, with the doctor's sanction, can reasonably perform any kind of light work, he gains more than by staying off, and this offering of light work to him by his foreman augments the man's regard for that foreman and for the company.

The CHAIRMAN: I desire all facts brought out regarding Workmen's Committees—what their size should be; what is the best size for an ordinary department; how often they should be changed; how they should be selected, and so on. Such committees are indispensable and practical.

Mr. J. D. JAMES: We have about 2,500 employees in our plant, mostly foreigners. On the first of this year we appointed a Safety Committee of the chief foremen from the various departments in order to prove to the men that these chiefs were interested in safety. Since the beginning of March, however, the committee has

been composed in its entirety of eight workmen; and men are picked out every fortnight from various departments. When this committee is making its inspection every Friday, the safety inspector walks a little behind the group; and if they fail to see anything which demands attention, the inspector calls them back and comments upon it. Our men are encouraged to speak freely, which they do; and each is trying to be the first to locate dangerous spots. Much interest is thus aroused; and the man who has discovered some hazardous point generally tells it to his fellows, and thus interest is fanned.

The CHAIRMAN: Has anyone had experience with the placing of very humble foreigners on safety committees?

Mr. A. H. YOUNG: At South Chicago, in our yard department committee, there are two men, one of whom cannot read or write his own language. The other man can do so; but not with respect to English. Still, they serve on the committee with the others; are good men, and make practical suggestions. There are several foremen who can act as interpreters.

The CHAIRMAN: Mr. Young, in the case of a large plant—not your own—where there is a large percentage of ignorant foreigners employed, would you feel, if appointed safety inspector there, that you could utilize the Workmen's Committee idea as successfully as you have done at your own works?

Mr. A. H. YOUNG: Yes—I think it is the speediest solution of the whole matter. While, however, I do not think the committee should be composed of this foreign element alone, the foreigner will nevertheless secure the broadening influence of other more advanced and better educated men. These latter, in turn, will have the benefit of the alien's point of view on matters—and this very point of view is sometimes important.

The CHAIRMAN: Has anyone present had experience with workman's committees, and been disappointed with the results attained?

Mr. C. L. YORK: At our plant at Schenectady there are nearly 21,000 men. In selecting our safety committee—composed of twenty-two members—we appointed the "practical" men. If we had picked out men promiscuously from the yards and the shops,

where the men are equal, petty jealousies would have developed, as one employee would not accept the warning of another. So our idea was to get employees with a little more intelligence than the average workman; and this has worked out satisfactorily. I believe, therefore, that better results can be gained in committee work by taking the "practical" man in preference to exercising an arbitrary selection. Of course, I am speaking from the standpoint of our own large plant, where the very question of "size" may modify the question a great deal. However, after all the discussion which has ensued here, I am going to give the other method a trial.

Mr. L. A. DEBLOIS: At our powder plant, we started our workmen's committees with a great deal of misgiving, for the reason that our works are in two sections—one the "Safety Area," where ordinary operations are carried out, and the other the "Explosive Zone," where hazardous duties prevail. The debatable point was whether we should send a joint committee from the "Safety Area" (or composed partly of "Safety Area" men, mechanics largely) into the danger building, because the men in it have so long been handling hazardous and sensitive material that they believe—rightfully—that no outsider could give them pointers on what was "safe." However, this was done; the suggestions made are first-class, and the employees in the "Explosive Zone" are quite complacent, as the recommendations come from the superintendent of the works and not from the committee direct. There is no harsh feeling among the men as to appointment, for they know they have nominations in rotation, and may be selected to serve any other month.

Mr. E. G. TRIMBLE: The point of rotation in service is important.

Dr. PATTERSON: I should like more information as to which is the better practice, to have the committee selected by the management of a plant, or to have them nominated by the men themselves.

The CHAIRMAN: I can throw some light on this point. As trustee of the Benefit Association of the International Harvester Company, I was present at every meeting, and met the trustees elected by the men. These trustees were always of a high grade; the men did not choose a man simply because he was a favorite, but always selected the individual in whom they had confidence, and of whose

ability they were assured. I do not, of course, know if this is typical of what might happen in other cases.

Dr. PATTERSON: Has it been your experience, Mr. Young, that the men appointed have created any jealousy?

Mr. R. J. YOUNG: It has not.

Mr. C. L. YORK: I desire to now make mention of the feminine element among workers. We have had much trouble with them; it is hard to keep them right in safety questions.

The CHAIRMAN: Safety work has been carried on very successfully among women operatives in the twine mills of the International Harvester Company. The field is not an unexploited one.

Mr. C. L. YORK: In our wire and cable department, we have trouble in having our women workers wear nets in order to obviate danger of hair being pulled out. A scheme of prizes offered to two of the most influential workers if they could induce the other women to wear hair-nets has not proved successful, even although these two girls have spoken to the others on all possible occasions.

The CHAIRMAN: A matron ought to be in charge—not the "motherly old lady" type—but a womanly, tactful woman, well educated, who will win the women's confidence. This will do more than anything else to overcome the difficulty.

Dr. W. TALBOT: In connection with the National Electric Lamp Association of Cleveland, I was able to secure the services of first-class women to act in an executive capacity in this manner. Since then I have been able to get in touch with other women to take executive positions in charge of feminine workers; and, in every case where such high-grade women have been selected, they have proved themselves an immense success. I suggest that Miss Hedges, who has had much experience along this line, might say something about it.

Miss HEDGES: I am glad the subject has cropped up, because the needs and special peculiarities of women workers can scarcely be understood by men, no matter how high-grade such men may be. The tact, sympathy, and the woman's point of view possessed by a high-grade woman are essential. I believe that Mr. York could

solve his problem by securing the assistance of a woman of this type.

Mr. B. C. CHRISTY: We have over 3,000 girls in our twine mills, and they all wear caps as a matter of course.

The CHAIRMAN: The Industrial Commission of Wisconsin believes so thoroughly in what Miss Hedges has said that we are authorized to engage a woman to travel the State, and help manufacturers to meet these problems affecting women operatives.

Mr. C. L. YORK: In applying safety devices to machinery operated by women, we have encountered difficulty because, on a piecework basis, these operatives are afraid the devices will affect their earnings. With the devices in place a "slowing-up" in their work has been noticed. We have told them that in order to try out the device they will earn their average rate of pay, whatever the rate of work may be; but in some cases the women have stopped work right away; and it may be that the women are being antagonized by some of the unions.

The CHAIRMAN: Does anyone question the practicability, from any standpoint, of giving the safety committee, composed of rank and file workmen, the privilege and authority to go to the bottom of accidents, and make investigation of the facts regardless of whether these facts reveal some fault on the part of the foreman or some mistakes on the part of the company?

Mr. E. M. ATKIN: To interpolate—for how much time during the day, and for how many days, is such a committee allowed for investigation of general safety conditions?

Mr. YORK: So far as our committee is concerned, they are on duty all the time.

Mr. B. C. CHRISTY: At one of our plants in Hamilton, Ontario, the safety investigator meets committees in different places for, say, an hour in each location, and in this manner we have plenty material to work on.

Mr. H. E. AKERLY: We employ about 4,000 men, and have a general committee of the kodak department itself. It has a trained engineer, the master mechanic, the chief of the fire department, and

the chief millwright. These men, as an "Overhead Inspecting Committee," devote one full day a week to this work. Moreover, in each department there are three high-grade workmen (not foremen) who are privileged to pass one whole afternoon each week in inspecting every department along unrestricted lines. They effect not only accident prevention, but fire protection, and anything else which is to the workmen's good. Their reports are submitted on a large-sized sheet, ruled vertically in the center, which is headed "Points Considered." After what they have considered has been written in, the sheet is submitted to the superintndent of that department. He then writes his opinion on the right-hand side of the sheet, opposite each of their suggestions, and the sheet is threafter forwarded to the general manager for his information. Afterwards it passes on to the general committee. Our results, after a period of three years' work, are very successful. No jealousy or opposition is manifest.

Mr. W. E. FIRTH: I have had two years' experience with the lower grade men on committees. When we started the campaign, the men suggested for selection by the superintendents of the departments were found to be medium-grade help, as these superintendents did not wish to reduce output by choosing skilled workers. I found that many of the men elected could not write reports, but could give much information orally. Hence I got the men to talk freely over cigars, and secured some helpful data in this manner. Moreover, a procedure which interested the men very much was my bringing the different committees four times yearly to New York to the American Muesum of Safety, where we spent three or four hours, a lunch being given them in the city.

The CHAIRMAN: Does anybody doubt the feasibility of turning workmen's committees loose on an accident which has happened?

Mr. M. A. DOW: I represent the New York Central Lines; and we have a "Mixed Committee," about one-half officials, and the rest workmen. The officials serve permanently, and the men six months. In every possible manner the investigation of accidents is encouraged, to arrive at the causes of them. A button is furnished to each member of the committee, indicating his association with it; and, when his six months' term of service expires, he is permtted to

retain the button, and authorized to still inspect and make reports of unsafe conditions and practices. We have no trouble, whatever, and no jealousy among the members of the committee or the men.

The CHAIRMAN: Does anything in your experience, Mr. Dow, lead you to infer that you could get better results if you had committees composed entirely of workmen? Would they be freer in their discussions, and in their inspections, especially of accidents?

Mr. DOW: From our experience, I think not. I do not believe that the presence of the foremen makes the men timid in suggesting matters that might reflect unfavorably on a foreman. If I find out, in checking the report of a committee, that a certain point has not been properly investigated or handled, I personally take the matter up with the superintendent of the shop involved, and ascertain the reason. Probably 90 per cent of the suggestions made by these committees have been accepted. If a matter which is referred to the shop or division committee for attention is of too great importance, or involves too large an expenditure for that committee to deal with, it passes to our general safety committee, which is formed by general officials of the railroad.

Mr. L. A. DEBLOIS: I should like a little more definite information on the investigation of accidents by workmen's committees.

Mr. R. J. YOUNG: Our so-called workmen's committees do not investigate casualties. Our department committee, which is a "mixed" committee of foremen and workmen, and of which there is one in each department, investigates all accidents occurring in their department, where a man will lose more than ten days' time; they suggest ways for preventing similar accidents, if possible, and also report whom, if any one, they think was negligent, and recommend certain discipline. Such suggestions are usually carried out. In addition to this, all accidents of thirty-five days or more are looked into on the scene of the mishap by our plant committee, which consists of the assistant general superintendent as chairman, the safety inspector as secretary, and three or four department superintendents as members.

The CHAIRMAN: Has any one in the audience had experience with an accident investigation committee composed wholly of workmen?

Mr. JAMES: We have a system whereby one man does nothing else but inquire into accidents. He visits the scene of the occurrence and reports to the safety inspector. The latter also goes to the place of the mishap; and, after probing all the circumstances, he apprises the chief of the matter; often putting forward an indication to obviate repetition of the happening.

Mr. R. C. RICHARDS: In all our shops and outlying round houses where committees exist, we have had a workmen's committee investigate any casualty which may cause a man to stop work even for a day. We attach more importance to the cause than to the mishap itself. We have no formal report forms, as I desire to secure the men's ideas in their own language. Of course, we outline generally what data will be appropriate, and if their reports do not embody such information, they are returned for amendment. Invariably the men are paid for their time in investigating these accidents, for attending meetings, and for making inspections. The committee's reports are posted on the bulletin boards, so that every one may know what caused the accident, while the name of the man at fault is also shown. My experience has been that the workmen are more severe and critical with each other than the officials are with the workmen. I think this scheme is practical and beneficial, and works out very well; and we certainly secure many good suggestions in this way."

Mr. DEBLOIS: I wish to ask Mr. Richards or Mr. Young whether they depend solely on the judgment of the "mixed" or workmen's committees for a decision in fixing proper responsibility for an injury; or if some one in the safety office checks this up.

Mr. RICHARDS: We do not have a "safety office," so called. All accident reports come to me; but, at the same time, they are sent not only to the bulletin board, but also to the master mechanic, or superintendent, or general foreman of the job. If I do not check the reports, then one of these men must do so; and the responsible person is thereafter called to book on the point.

Mr. YORK: As regards our method of accident investigation: When a man is injured, we secure his statement first, if possible; and then have the foreman investigate it. The foreman must notify the hospital of the accident, where a report is made of it

in triplicate. One copy goes to the manager, another to the foreman, and the other is retained on the hospital files. Besides all this, we have witnesses testify regarding the mishap whenever this can be done; and, in whatever section it has occurred, the safety man takes it up.

The CHAIRMAN: The present era, in contrast to that which has passed, is one where we must be frank and free with the workmen in respect of accidents. We must convince them of the sincerity and straightforwardness of the safety movement. Owners, superintendents and foremen must get the facts, and each take responsibility in soldierly fashion. Nothing less than this will win out.

Mr. ATKIN: Adverting to the suggestion I made yesterday concerning the "20c." and "40c.": this emanated from Mr. R. G. Lewis, who has been with the Yale & Towne Manufacturing Company for thirty-two years. Talking it over with him after the meeting, I will now outline the way in which he reached the conclusion, and the manner in which it can be utilized to convince the heads of the "production end." Mr. Lewis said: "Take your total pay-roll for the past year, and the whole amount of production in the sales end for that period. Subtract the pay-roll from the production, and divide the result by the number of operatives. You will thus arrive at the amount of sales each man was responsible for as a worker in the company. If you sell $7,500,000 worth of goods, and you have a pay-roll of $2,500,000, there is left $5,000,000 that these men have produced over and above what has been paid for doing it. Divide this by 5,000 men, and it will be found that each man is receiving about $1,000 annually, which, in round figures, would be what I indicated as his production, i. e., 40 cents to 50 cents an hour, which goes into your maintenance charges, your amortization, your income, your reserves, and your dividend rate. So if each one of these operatives engaged at a press is earning that much money, he is, when he stops work, losing 20 cents, and you will find that you are losing approximately 200 per cent of the pay-roll through his cessation of activity. Not only this, but if you have got a lawsuit on your hands, or a workmen's compensation act is in operation, you have to pay him over again 50 per cent of the 20 cents. Thus he is losing 10 cents and you are losing 50 cents, which is 500 per cent over what he is losing in the shop."

The CHAIRMAN: That is so good, and people have manifested so much interest in it, that you might be kind enough, when you get home during the next week, to write Mr. Cameron a letter, putting the matter fully before him, so that in the near future it may be utilized in some bulletin form.

Mr. ATKIN: When a man has to cease work through an injury, it has a decidedly adverse effect on the "production end."

Dr. TALBOT: I feel it almost a duty to supplement what Mr. Atkin has said, and urge that the National Council base its whole energy on the economic argument.

The CHAIRMAN: I wish to say one thing more. Mr. Campbell, Mr. Cameron and I very briefly discussed the question of putting these "Round Table Talks" into handbook form, so that such a brochure, showing the conclusions arrived at, could be placed in the hands of every foreman. I believe that this will be one of the first contributions of the Council toward furtherance of the safety movement; and it will be carefully taken in hand by Mr. Cameron, who is eminently qualified to undertake the task.

Mr. CAMERON: I think one of the first matters I shall take up will be the compilation of such a handbook. I consider it one of the most important things we can do.

The CHAIRMAN: Such a book will be a synopsis of the best experience in safety work, and will sow the seed of the gospel of safety organization where it is required.

Dr. Patterson then proposed a vote of thanks to the Chairman, to which Mr. Price responded. The meeting then adjourned.

MISCELLANEOUS DIVISION—BANQUET SPEECHES.

Address of Mr. Robert W. Campbell, President National Council for Industrial Safety, delivered at Joint Safety Dinner of National Committee for Industrial Safety and Association of Iron and Steel Electrical Engineers, September 24, 1913:

Mr. Toastmaster, Ladies and Gentlemen: It is with a good deal of diffidence and embarrassment that I stand before you tonight, for I am in another man's shoes. The Executive Committee of the National Council for Industrial Safety had hoped to have had serve it, as its president, another gentleman, who is in every way better qualified for the position than am I; a gentleman who has attained the very highest position in the world's work for Accident Prevention, and one whom we all love and respect. I refer to Mr. Ferdinand C. Schwedtman. It was with great regret on my part, personally, and on the part of every member of the Executive Committee that we were compelled to give up this hope, but Mr. Schwedtman, on account of the press of personal business, felt that it would be impossible for him to serve in the capacity desired, and it was necessary for the Executive Committee to look elsewhere to fill that office. I do not yet quite understand why I was chosen and I believe Mr. Cameron feels somewhat the same way about his selection for the office of secretary. We both feel very deeply and keenly the great honor that has been done us in selecting us for these offices. We are very grateful for the trust and confidence you have displayed in us and from the bottom of our hearts we thank you.

I am not here, however, to make any apologies, either for myself, Mr. Cameron, or for the Executive Committee for the action it has taken. All we can do is our best, and I pledge that we will give that to you; to the National Council for Industrial Safety, and to the Safety Movement, for whatever it may be worth. We would all rather be judged by our accomplishments, than by our promises, and we will reserve our apologies at this time for possible presentation a year hence.

There come to my mind tonight some of the fairy stories of my childhood, in nearly all of which the young man of the family,

after having been carefully nurtured and properly trained and brought up, finds that it is time for him to leave the parental roof, and go out into the world to seek his fortune. With gratitude for all that has been done for him and sorrow in his heart over the separation, he bids farewell to his family and fares forth. The National Council for Industrial Safety is much in that position. For many years—in fact, ever since its organization—the Association of Iron & Steel Electrical Engineers has been greatly interested in Safety work; and at all of its Annual Meetings, has devoted much time to the consideration of Safety problems—more time being devoted each year than in previous years. Twelve months ago, under the auspices of that organization, there was held in the city of Milwaukee, Wisconsin, the First Co-Operative Safety Congress, which was the most successful meeting of its kind ever held. Prior to that time, however, many of those interested in Accident Prevention work had come to feel that the Safety sessions at the meetings of the Electrical Engineers were assuming such proportions that they were becoming meetings for the discussion of Safety topics, rather than for the consideration of technical electrical matters, and that a broader and more comprehensive attack on the Accident Prevention problem of the day should be made than could be done through their organization. It was, therefore, suggested at that Congress that a committee be appointed to consider ways and means and plans for effecting an organization that might harmonize, co-ordinate and stimulate Accident Prevention activity throughout the Nation.

The National Council for Industrial Safety formally launched today is the result of the work of the committee appointed at that time, and is, in fact, the child of the Association of Iron & Steel Electrical Engineers. We have, therefore, come to the parting of the ways; and it seems to me most fitting that at this time the National Council should say a word of farewell to its real founders. The Association of Iron & Steel Electrical Engineers has much to be proud of in the many achievements that are to its credit, but of none should it be prouder than of its Safety work, which has always been a stimulus and an inspiration to all those who have come in contact with it. Gentlemen of the Association of Iron & Steel Electrical Engineers, your child makes grateful acknowledgment to you of all that you have done for it and regretfully

bids you farewell, knowing, however, that as it goes on its way you are wishing it "God-speed," and that it will have your sympathy, interest, support and co-operation."

With the thought of fairy tales in mind, I am inclined to draw an allegory, if that be the correct word, to describe my thought. Many centuries ago there was a great people in bondage to a foreign power. Their trials and tribulations, their suffering and their sorrows were almost unbearable. It was a condition which had lasted several hundreds of years. There ultimately was raised up to these people a Moses to lead them out of the land of their bondage. You are familiar with the story of their crossing of the Red Sea; their being led on their journey by a cloud by day and a pillar of fire by night; of their battle with Amalek, during which, so long as the hands of their leader were upheld by Aaron and Hur, they were successful. You are familiar with the giving to these people of the Table of the Law; the establishment of the Levitical Law; the building of the temple, and the final approach to the Promised Land which was to be their home for all time. You are cognizant of the sending forth of spies into this new land and the return of these spies, the majority of whom made an unfavorable report; two of them, however, returning with the fruits of the land and drawing a rosy picture of the beautiful country, and of the possibility of its conquest. You are also aware of the details of the discord that arose upon the rendering of the reports of the spies; the consequent failure of the people to go forward, and the ultimate necessity of their wandering in the wilderness for a period of forty years before they were permitted to go into this Promised Land and possess it.

There is today a great Nation—nay, we may say there are all Nations—in bondage: the bondage of industrial and public accident and disaster. The sorrow and suffering, and the trials and tribulations of these people, are greater than of that Nation of old. There have been, however, raised up for the deliverance of these peoples a thousand Moseses, in the persons of a thousand, or more, pioneering Safety workers. These leaders have led the people thus far through the Red Sea of lethargic indifference, thoughtlessness, and, mayhap, greed and selfishness, led by a cloud by day and a pillar of fire by night of brotherly love; have conquered the Amalek of doubt and conservatism by the holding up of one another's hands,

and have had given to them a Table of the Law on which there has been inscribed the words "Safety First;" and have promulgated a law of almost equal importance with the Levitical Law in the Safety rules, requirements and standard devices that have been worked out; have built them tabernacles of Safety organizations, and are today listening to the reports of the spies that have come back from the Promised Land. As before, the reports of the spies are of two characters. There are the reports of those who would not try—urging the impracticability of conquest of this Promised Land, because of the giants of Pride in Things as They Are, and Prejudice. Thank God, however, we have had the reports of the Calebs and Joshuas—those industrial, transportation and public concerns—that bring to us samples of the fruit of the Promised Land in the way of reduced accidents, and tell us of its wonderful beauty. They tell us that it is a land of plenty and prosperity; a land of health and happiness where the homes are bright and cheerful; where families are united, and sorrow is not; a land where children sing and the young make love; a land where there is no mourning, no wailing and weeping or gnashing of teeth. A very beautiful picture they draw.

We have the same problem that the Israelites thousands of years ago had facing them.

Are we to go up and take the Promised Land?

Are we to let so great an opportunity as this pass by, and are we to wander for forty years more in the wilderness of Accident, Death and Destruction?

Are such splendid privileges and opportunities to be offered, only to fall from our grasp? I believe not.

Next to the Jewish Exodus, no greater Movement has ever been started than the Accident Prevention Movement. There is nowhere a more intelligent and progressive body of men engaged in any work. There is nowhere a better cause to be engaged in. It is one of wonderful possibilities. We pause, though, and ask how this work may be done—how to get into the Promised Land.

Those present at the session of this Congress will appreciate the fact that the "how" has been reduced to three concrete principles: Organization, Co-operation and Education. Organization, Co-operation, Education—everywhere. This Council, without going into details of purposes, stands for that. Primarily, it stands for co-

operation; and primarily the Council asks—nay, begs—for co-operation from every source: every State, every Bureau, every individual. On our own behalf, we pledge the same to you—to the individual, to the Bureau, to the State, and to every other activity.

There have been, and there will be, mistakes made. We cannot hope to be perfect, any of us. But it is my judgment that we should not stop to criticise: not even find fault. Let us not point the finger of Scorn at the Past. Let us rather point the finger of Promise towards the Future. Let us each one do the duty close to our hand. If the National Council does not point it out to you, find it for yourselves. Let every man do his own part, so that in the end, when we come to pass over into the Great Beyond, we may receive at the hand of the Master: "Well done, good and faithful servant: enter thou into the joy of thy Lord".

Hon. James T. McCleary's Address, delivered at Joint Dinner of National Council for Industrial Safety and Association of Iron and Steel Electrical Engineers, September 24, 1913:

Mr. Toastmaster, Ladies and Gentlemen:

Governor Tener's introduction was very gracious and generous, but anyone with half an eye can see who is the "big gun" of this occasion. (Laughter and applause.)

It would be unwise in me to undertake to tell you gentlemen of the Safety Congress how to achieve safety in your several fields. You know more about that than I do. If I should undertake to tell you about it I would be somewhat in the position of the young man who was walking along the seashore with a fair maiden. They sat down side by side near the water, facing the sea. She had a large umbrella which she opened and placed over her shoulder, the shoulder next to the young man. He slipped his arm around her waist and their faces came close together. There was a moment of expectation—but nothing happened. With a little giggle the young lady said, "I didn't know but you were going to try to kiss me." To this the young man stammered the answer, "I did think of that, but I have sand in my mouth." Quickly the maiden answered, "Swallow it, you need it in your system." (Laughter and applause.) I would need in my system more sand than I possess to feel brave

enough to advise you on the technicalities of your very important work. I shall speak to you on a cognate subject which is in intimate, but not immediately obvious, relation to the work of this meeting.

It is a great pleasure to see so many ladies present. Their interest in this work will promote its success. History tells us that most of the good work done by men is inspired and aided by good women. (Applause.)

Love and Light.

Some years ago it was my good fortune to spend some time in the imperial city that "sat upon her seven hills of beauty and ruled the world." Of course we went to each of these seven hills, including the Palatine Hill on which had stood the palace of the Caesars. The outline of the palace was still to be seen. Here the walls were level with the ground; there higher than one's knee. Here they were as high as one's head; there higher than the hands could reach. We went into a great room, about as long as this room and twice as wide. This, we were told, had been the throne room. One end of this room was semi-circular. At the center of the half circle had stood the throne of Caesar. I took a position near where the throne had stood and gave free rein to my fancy. In imagination I rebuilt that great palace, placed Caesar again on the throne, with royal robes about his person, and in his hands and on his head the symbols of authority. I repeopled that room with the pride and chivalry of that imperial city. Then in the midst of that pomp and power I asked myself to think of someone there present raising the question, "When nineteen centuries shall have rolled away, whose influence will be greater in the world, that of the mighty man who sits here on the throne, the man at whose words men tremble, or that of a certain carpenter now walking the streets of Nazareth?" Probably if that question had then been asked it would have seemed too foolish to require an answer. Then I came out of my dream and looked around. The palace had crumbled; only broken walls marked the place where it had stood. The throne was gone, as was the influence of the man who had occupied it. But as I looked out over the broken walls upon the mighty city I saw on all sides the heavenward-pointing spires of churches erected in honor of that Carpenter of Nazareth. And I remem-

bered that what I saw in this city could be seen in other cities in all parts of the globe. The dominion of Caesar had for centuries been ended; that of the Carpenter of Nazareth was covering the earth, extending far beyond the proudest limits ever achieved by imperial Rome. Then came to me the question, "What is the essential significance of this?" The answer was not hard to find. The power of Caesar rested on force, that of the Nazarene on love; and the lesson was that love is stronger than force, more enduring than power. (Applause.) And love is the cornerstone of the structure you are building. Your answer to the question of old is, "Yes, I am my brother's keeper." But to accomplish worthy results something more than love is required. With love there must be light; with heart there must be head; with sentiment there must be sense.

A female elephant walking through the jungle inadvertantly put her foot on a mother bird endeavoring to guard her nest nearby. Looking down and seeing what she had done, the elephant's heart was touched. Addressing the chicks in the nest, she said, "I did not mean to kill your mother. That is the last thing in the world that I would intentionally do. I have been a mother myself and I know what a mother's feelings are. But I have killed her, and now what should I do about it? Evidently I should do my utmost to take her place, and do what she would do." And the elephant sat down upon the nest! (Laughter and applause.) The motive was admirable, but the result was disastrous; and this disastrous result fell precisely on those whom it was intended to serve. How often we find emulaters of the elephant. How many good people there are who have it in their hearts to transform earth into heaven but whose proposals, if carried out, would work in the other direction.

The National Game.

The toast to which I am to respond is "The National Game." My friend, Governor Tener, was not quite sure from this title whether I would discuss baseball or activities at Washington. As usual he is right, and in this case doubly right. I propose to say a few words about baseball, with possible reference to things at the national capital.

When I was a boy I was very much interested in the game of baseball and I have never gotten over being something of a fan.

In my boyhood I saw the game with more clearness of physical vision than I see it now. But now, older grown, I see the game plus things that it signifies.

The Dependence of the Many on the Few.

Not long ago I saw a game that was witnessed by some 50,000 people. The grandstand was full of people, and so were the bleachers. The hillsides commanding a view of the grounds were covered with people, as were also the housetops. Then I recalled seeing in front of newspaper bulletin boards in this city thousands of people watching the game. And I knew that similar thousands were assembled in other cities throughout the land watching this same game. I also knew from observation that hosts of men going home on the street cars would open their evening paper first at the place where the game was reported. Literally millions of people were watching that game or seeking a report of it. Millions of people were interested in it and deriving pleasure from it. And yet as I looked out upon the grounds where the game itself was being played the men engaged in the game were only a handful, less than fifty all told. What did that signify? The obvious thing was that millions were deriving pleasure from the performance of a few. And the thought occurred to me that that represented a great truth of immensely broad application, namely, that now and always the many are dependent upon the few. Every great movement that has resulted in benefit to mankind has been originated and led by one or two people, and its policies have been planned and carried out by a few to the benefit of the many. He is no true friend of the many who seeks to cultivate in their hearts the spirit of envy and antagonism toward the few. (Applause.)

The Rules of the Game.

After the game had begun I noticed that it was played according to rule. The batter could not always run even if he hit the ball. Sometimes as the ball flew through the air a man on the ground speaking with authority called out "foul." Neither the batter nor any player on his side was allowed to secure advantage through a foul hit. Those on the bases had all to return to the base from which they had started and wait until the ball was back in the

hands of the pitcher. This rule seemed to meet universal approval. And this suggested to me that the people generally are opposed to gains acquired through foul means. They stand clearly for fair play. And in this is implied the right of each player to make as many "home runs" as he fairly can.

With this thought came another: Were the rules in that baseball game made with the view of encouraging or discouraging skill? You all know the answer. The development of skill on the part of every player is promoted, not retarded. Again referring to that great national game in Washington. Can there be any doubt of the result to this country if the rules adopted at Washington have as their fundamental purpose the discouragement of skill?

The Umpire.

On the baseball field I noticed one man who was not active in the game, that is, he was not playing on either side. They called him the umpire. Sometimes he made decisions that from my point of view were clearly wrong. And I was inclined to feel resentful about them. But my sober second sense asserted itself and I concluded that, as he knew ten times as much about the game as I did and was so situated that he could see the plays to be passed upon far better than I could, he was probably right and I was wrong. As a rule his decisions seemed to have the approval of the crowd. But on one occasion if the crowd could have got at him they would have run him off the field. Ask yourselves the question and answer it, "Which was probably right, the umpire or the crowd?" And answer another question, "Would the welfare of the game have been promoted or retarded if the mob could have interfered with his decisions?" Were the decisions more likely or less likely to be fair to all concerned if he could make them regardless of what the spectators thought?

Then I asked myself, who made these rules? Were they made by men who knew and loved the game? Or were they made by men who neither knew nor cared for the game, by men who could not pitch or catch or field or bat or run bases? You know the answer. The men who made these rules had a thorough knowledge of the game and a profound love for it. This is why the game lives and flourishes. This is why the handful of men in the Polo Grounds in New York City command the attention of millions in all parts of the

world. And now the question arises as to the other national game, the immensely bigger and more important game, the one played in Washington. Candidly, is it well for the American people to have men make the rules of business who know little or nothing about business? Isn't it time that the American people awoke to the fact that rules to govern business made by men themselves incapable of conducting business cannot reasonably be expected to be in the interest of the American people?

I remember reading in a publication of very wide circulation an article on baseball by Connie Mack, (applause) who seems to be known to you all as one of the greatest baseball generals that the game has ever known. In this article Mr. Mack said that in the early days of baseball the umpire felt constrained to decide close questions always in favor of the home team. And Mr. Mack added, and the significance of his statement cannot be over-estimated, that the game never flourished until the independence of the umpire was assured. Mr. Mack was thinking of baseball. I do not need to point out to an audience as intelligent as this that Mr. Mack's statement is significant when applied to the other and greater national game to which I have referred, and to the umpires therein provided for.

Equality of Opportunity.

All that any person has a right to ask is a reasonably fair show for his white alley. Much is being said by men who demand equality of opportunity. Many of them made this demand in perfect good faith, prompted by a spirit of equity in their souls. Others demand it simply as a mouth-filling phrase, appealing to what is fair and reasonable in the hearts of others. With many who are loudest in their demand the thing itself is the last thing on earth that they want. As a matter of fact they do not want equality of opportunity. What they really want is equality of result. And they appear to be oblivious to the fact that the only way of securing equality of result is to deny equality of opportunity.

Five boys are starting to run a race. Will not the judges of the race have performed their full duty when they see that the start is a fair one, that the track is kept free from unfair obstruction, and that no runner fouls another? Suppose that after the boys have been running a few minutes, one of them forges to the front and it

becomes clear that he will win the race, leaving the others far in the rear. Supposing that the judges determine that the swiftest runner shall be hobbled "to give the other boys a chance." Suppose they do hobble him, will he have had a fair show? Will he have had his equality of opportunity? Supposing that the judges should determine that all the boys shall cross the winning line at exactly the same instant, how can that result be brought about? Clearly in only one way, by hobbling each boy in direct proportion to his speed. In other words, the only way to bring them in together is to deny each boy any show of winning, to deny each boy his equality of opportunity. This illustrates my general proposition that equality of result can be obtained only by denying equality of opportunity. Those who stand for equality of result should frankly say so and not pretent to stand for equality of opportunity.

Equality of opportunity implies the right to inequality of result, and with equality of opportunity or anything approaching it, there always will be inequality of result. And why? Because God does not make men equal. They are not equal physically. They are not equal mentally. They are not equal morally. And no one knew this better than that great Virginian who penned the Declaration of Independence. And when he said therein "All men are created equal," he did not mean that they were equal in any of their endowments, but that they had an equal right to a fair show before the law. Jefferson stood for equality of opportunity in fact as nearly as that was humanly possible. Equality of opportunity means that the man of one talent and the man of many talents should each have a fair opportunity to do the most and the best of which he is capable and secure the fair reward therefor. (Applause.)

Suppose that in the race that I have referred to no boy was permitted to win, what would be the result? Inevitably in that community boys would cease to be good runners. Why? Because the motive for struggling to acquire speed would be taken away. And suppose that this great nation of ours should deliberately adopt the policy of hobbling and harassing and annoying men of capacity, what will be the inevitable result? We will become a nation of weaklings, of men who cannot achieve, a by-word and a reproach among nations. (Applause.)

I have in mind a country where this deplorable result has been reached along this precise pathway. The country that I have in mind

has been endowed by the Almighty with vast resources, and yet the nation and its people are poor. Why? Because it is the rule in that country that the man who begins to achieve success has to meet not only the envy and detraction which seems inevitable in such cases, but success seems to be regarded as sin, and the government itself lays its heavy hand upon him and takes away from him unfairly what he has fairly won. The result I have told you. The country is poor, but not all are equally poor. Even there the strong are able to take care of themselves much better than the weak. The chief sufferers are the weak and not the strong. Conversely the chief gainers of fair treatment would be the weak rather than the strong. The weak need the strong vastly more than the strong need the weak.

The Value of Leadership.

My friend, Governor Tener, kindly spoke of me as having lived in Minnesota. For more than thirty years my home was in the great North Star State. I am always proud of being introduced as coming from Minnesota. During the great contest as waged in this country fifty years ago to determine "whether a nation so conceived and so dedicated could long endure," Minnesota, then sparsely settled, gave of her small population many regiments to the Union army. One of these regiments did at Gettysburg a deed of valor not exceeded since Thermopylae. One of the other regiments surrendered to an inferior force in the first battle that it entered. Minnesota loves to think of the First Minnesota at Gettysburg and the Second Minnesota at Chickamauga, but she tries to forget the other regiment that dishonored her name.

It is the second day of the battle of Gettysburg. In a way not necessary to describe the Union line was weakened by the removal of troops so that only one regiment remained to guard that center. Over on Seminary Ridge Longstreet saw that break in the Union line. Rightly resolved to take advantage of this mistake he ordered ten thousand men to charge across the valley on this weak place in the Union line. At the same instant General Hancock rode by, discovered the weak place in the line—found one regiment endeavoring to do the duty of twenty. Riding up to this handful of men he demanded of the Colonel, "What regiment is this?" To which Colonel Colville promptly answered, "The First Minnesota, sir."

Pointing to the thousands of men in gray charging across the valley General Hancock said, "Stop these men." Promptly Colonel Colville commanded his three hundred men, "Forward, the First Minnesota, double quick, charge!" And although the men knew that they were outnumbered thirty to one they leaped to the charge with such impetuosity that the gallant men in gray were checked, the precious minutes gave General Hancock a chance to bring up reinforcements, and the victory at Gettysburg became possible. (Applause.)

Why did one Minnesota regiment bring to the state renown while the other brought only shame? The men in the nameless regiment were just as brave and just as patriotic as those in the First Minnesota. Why the different result? Because at the head of the First Minnesota was Colonel Colville like Leonidas at Thermopylae, a man fit to lead, while the nameless regiment was commanded by a coward and a poltroon. The difference was not in the men but in the leaders.

Leadership is one of the world's most precious possessions. For the common good, leadership should be cherished and encouraged and allowed to reap its full reward. This is the lesson which this beloved country of ours must take to heart. It must continue to keep wide open for everyone, for the man of one talent and for the man of many talents, the golden gate of opportunity. Fair treatment for great and small, for rich and poor, for corporation and individual man, must be the rule of law. Then shall the safety of the Great Republic be assured. Then shall the National Game be played to a successful finish. Then shall our country achieve the destiny honorable to our people and worthy of our opportunities. (Applause.)

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