

1934

TRANSACTIONS

National Safety Council

Incorporated

TWENTY-THIRD ANNUAL
SAFETY CONGRESS



Cleveland, Ohio

October 1 to October 5, 1934

The Cleveland, Carter and Statler Hotels

Copyright, 1935, National Safety Council, Inc.

PLAINTIFF'S
EXHIBIT

tabbies
WV-RR030

PLAINTIFF'S
EXHIBIT

tabbies
01450.00

Publication Plan

THE TRANSACTIONS of the Twenty-third Annual Safety Congress, National Safety Council, 1934, are published in two volumes. The first, containing the General Sessions, the Special Subject Sessions, and the Industrial Section Sessions, is presented herewith. It is supplemented by a smaller volume containing the sessions of the Street and Highway Traffic Section, the Child Education Section, and Home Safety.

The large volume is being sent automatically to the Industrial members of the Council; the smaller volume is sent automatically to members who are believed to be chiefly interested in those sessions. It may also be secured on request by other Council members.

For the benefit of many members who have found it advantageous to distribute copies of these TRANSACTIONS to supervisors, foremen and others among their personnel, who may keep them for continuous reference, the following quantity prices are quoted: 1 to 10 copies of the large volume, \$1.50 each; 11 copies and over, \$1.25 each. Copies of the smaller volume, \$.50 each.

THE PLAN OF PUBLICATION is the same as that followed for the last three years. It is a condensed record. The papers of each session or division of the Congress have been assembled, edited with care and discernment to eliminate extraneous matter and abbreviate the less essential portions, and the concise remainder is presented for study and reference. Although not "complete" in the sense that every word is reproduced, it is an interesting and valuable record which emphasizes the memorable parts of each paper or address. The original manuscripts are on file in the Council Library, available for additional reference as desired.

Although the National Safety Council endeavors to eliminate from discussion at its conventions matters which are not pertinent to its purposes or which are contrary to its policies, the Council cannot accept responsibility for the views expressed either in the papers presented or the discussions thereon.

NATIONAL SAFETY COUNCIL, INC.
20 North Wacker Drive, Chicago

CONTENTS

	PAGE
Council Officers and Directors.....	4
Council Purposes and Policies.....	9
Annual Meeting of Members.....	11
Annual Banquet.....	21
Subject Sessions—	
Dust in Industry.....	23
Fire Prevention in Industry.....	31
Fusion Welding and Cutting.....	41
Industrial Nursing.....	45
Industry and Its Motor Vehicle Accident Problem.....	51
Maintaining Interest in Safety.....	59
Mechanical Methods of Handling Materials.....	67
New Workers.....	73
Poisonous Fumes and Vapors.....	79
Safety Equipment.....	85
Safety Organization and Program.....	93
Safe Use of Chemicals in Industry.....	99
Safe Use of Electricity in Industry.....	103
The Injured Worker.....	113
Why People Fail.....	121
All Ohio Day.....	127
FERA Safety Conference.....	131
Industrial Safety Lectures—	
Selling the Safety Idea.....	135
The Psychology of the Safety Movement in Changing Times.....	140
Accident Prevention Equipment Manufacturers' Section.....	149
Aeronautical Section.....	153
A. S. S. E.—Engineering Section.....	159
Automotive and Machine Shop Section.....	163
Cement Section.....	177
Chemical Section.....	187
Construction Section.....	199
Delivery, Taxicab and Bus Section.....	209
Food Section.....	219
Marine Section.....	227
Meat Packing, Tanning and Leather Industries Section.....	245
Metals Section.....	255
Mining Section.....	269
Paper and Pulp Section.....	289
Petroleum Section.....	307
Power Press Section.....	325
Public Utilities Section.....	337
Quarry Section.....	349
Refrigeration Section.....	357
Rubber Section.....	365
Safety Section, ARA—Steam Railroad Section, NSC.....	383
Textile Section.....	413
Transit Section.....	419
Wood Products Section.....	435
Index.....	445

National Safety Council

Incorporated

HONORARY MEMBERS

ASSOCIATION OF IRON AND STEEL ELECTRICAL ENGINEERS

ROBERT W. CAMPBELL

ARTHUR WILLIAMS

OFFICERS (1934-1935)

JOHN E. LONG, President.

ROBERT I. CATLIN, Vice-President for Public Safety.

D. D. FENNELL, Vice-President for Public Relations.

LEW R. PALMER, Vice-President for Safety Councils.

ALBERT S. REGULA, Vice-President for Engineering.

C. W. SMITH, Vice-President for Industrial Safety.

R. T. SOLENSTEN, Vice-President for Membership.

DR. C. H. WATSON, Vice-President for Health.

A. W. WHITNEY, Vice-President for Education.

W. E. WORTH, Vice-President for Finance and Treasurer.

W. H. CAMERON, Managing Director and Secretary.

EXECUTIVE COMMITTEE (1934-1935)

A. L. ARMSTRONG, Eastman Kodak Company

C. B. AUER, Past President.

J. I. BANASH, Past President.

C. W. BERGQUIST, Past President.

F. W. BRAUN, Wood Products Section.

W. H. CAMERON, National Safety Council.

ROBERT W. CAMPBELL, Past President.

T. H. CARROW, American Railway Association.

ROBERT I. CATLIN, Aetna Casualty & Surety Company.

J. E. CULLINEY, Bethlehem, Steel Company.

LEWIS A. DeBLOIS, Past President.

MARCUS A. DOW, Past President.

D. D. FENNELL, Consulting Engineer.

D. L. FENNELL, Kansas City Safety Council.

CAPT. E. W. FISKE, Jr., Marine Section.

R. B. FORTUIN, Lehigh Valley Safety Council.

HARRY GUILBERT, The Pullman Company.

MERLE C. HALE, Automotive & Machine Shop Section.

G. T. HELLMUTH, Chicago, North Shore & Milwaukee Railroad Co.

HON. HAROLD G. HOFFMAN, Street & Highway Traffic Section.

THOMAS P. KEARNS, Industrial Commission of Ohio.

WALTER G. KING, Past President.

Officers and Directors

5

FRANKLIN M. KREML, Evanston Safety Council.
JOHN E. LONG, The Delaware & Hudson Railroad Corp.
THOS. H. MACDONALD, United States Department of Agriculture.
E. J. MEHREN, Portland Cement Association.
I. W. MILLARD, Accident Prevention Manufacturers' Section.
HAROLD L. MINER, E. I. duPont de Nemours & Co., Inc.
ARTHUR T. MOREY, Past President.
LEW R. PALMER, Past President.
C. E. PETTIBONE, Past President.
C. E. RALSTON, Western Pennsylvania Safety Council.
ALBERT S. REGULA, Industrial Relations Counselors, Inc.
LT. COL. H. A. RENINGER, Past President.
GEORGE E. SANFORD, General Electric Company.
ROBERT L. SCHMITT, Louisville Safety Council.
HARRY A. SCHULTZ, United States Steel Corporation.
CHARLES B. SCOTT, Past President.
LESTER D. SEYMOUR, Aeronautical Section.
C. W. SMITH, Standard Oil Company (Indiana).
WALTER DENT SMITH, Delaware Safety Council.
R. T. SOLENSTEN, Elliott Service Company.
CLARENCE P. TAYLOR, Massachusetts Safety Council.
C. P. TOLMAN, Past President.
J. A. VOSS, Metals Section.
GEORGE H. WARFEL, Union Pacific Railroad Company.
D. C. H. WATSON, American Telephone & Telegraph Company.
A. W. WHITNEY, National Bureau of Casualty & Surety Underwriters.
W. E. WORTH, International Harvester Company.
ARTHUR H. YOUNG, Past President.

DIRECTORS (1934-1935)

FREDERICK ARCHER, Child Education Section.
WILLIAM F. ARDERN, Safety Div., Milwaukee Association of Commerce.
A. L. ARMSTRONG, Eastman Kodak Company.
WILLIAM H. BAKER, Quarry Section.
J. I. BANASH, Consulting Engineer.
H. D. BANTA, Paper & Pulp Section.
ERNEST W. BECK, United States Rubber Products, Inc.
W. A. BENNETT, Worcester Safety Council.
C. W. BERGQUIST, Western Electric Company.
DAVID S. BEYER, Liberty Mutual Insurance Company.
E. F. BLANK, Jones & Laughlin Steel Corp.
C. F. BORKENHAGEN, Kenosha Safety Council.
F. W. BRAUN, Wood Products Section.
COL. PHIL H. BROCKMAN, St. Louis Safety Council.
PRESTON D. CALLUM, Baltimore Safety Council.
W. H. CAMERON, National Safety Council.
T. J. CARNEY, Chicago Safety Council.
T. H. CARROW, American Railway Association.

6 *Twenty-third Annual Safety Congress—National Safety Council*

ROBERT I. CATLIN, Aetna Casualty & Surety Co.
CARL C. CLEMENTS, Refrigeration Section.
ROSCOE D. CONLIN, Rahway Safety Council.
H. HERBERT CORSON, Safety Dept., Nashville Chamber of Commerce.
J. E. CULLINEY, Bethlehem Steel Company.
EDWARD DANA, Boston Elevated Railway.
E. A. DAVIDSON, Consulting Engineer.
RICHARD H. DAVIS, Blackstone Valley Safety Council.
CHARLES D. DAWSON, Grand Rapids Safety Council.
LEWIS A. DEBLOIS, Consulting Engineer.
JAY E. DECKER, Mason City Safety Council.
JAMES B. DOUGLAS, The Philadelphia Gas Works Company.
LOUIS I. DUBLIN, Metropolitan Life Insurance Company.
CHARLES H. EAMES, Textile Section.
D. D. FENNELL, Consulting Engineer.
D. L. FENNELL, Kansas City Safety Council.
DONALD A. FINKBEINER, Toledo Safety Council.
CAPT. E. W. FISKE, JR., Marine Section.
HOWARD B. FONDA, Burroughs Wellcome & Co. (U. S. A.) Inc.
R. B. FORTUIN, Lehigh Valley Safety Council.
E. N. GOLDSTINE, Construction Section.
OTHO M. GRAVES, The General Crushed Stone Co.
HARRY GUILBERT, The Pullman Company.
ISAIAH HALE, The Atchison, Topeka & Santa Fe Railway Co.
MERLE C. HALE, Automotive & Machine Shop Section.
MAJOR BOLLING H. HANDY, Richmond Safety Council.
D. T. HARRINGTON, United States Bureau of Mines.
G. T. HELLMUTH, Chicago North Shore & Milwaukee R. R. Co.
CHAS. E. HILL, New York Central Lines.
HON. HAROLD G. HOFFMAN, Street & Highway Traffic Section.
CLAUDE J. HOLDING, Albany Safety Council.
JULIUS W. HORRE, Hudson County Safety Council.
HARRY D. IMMEL, Pennsylvania Dept. of Labor & Industry.
LEX JENSEN, Berkeley Traffic Safety Commission.
EDGAR P. KABLE, York County Safety Council.
THOMAS P. KEARNS, Industrial Commission of Ohio.
K. T. KELLER, Detroit Industrial Safety Council.
IRA V. KEPNER, Pennsylvania Salt Manufacturing Co.
E. J. KREH, Public Utilities Section.
FRANKLIN M. KREML, Evanston Safety Council.
C. L. LAFONTAINE, Great Northern Railway Co.
FRANK J. LANAHAN, Fort Pitt Malleable Iron Co.
JOHN LAUERMAN, Meat Packing, Tanning & Leather Industries Section.
SIMON LAZARUS, Safety Council, Columbus (Ohio) Chamber of Commerce.
JOSEPH LILlich, Rochester Safety Council.
DR. R. M. LITTLE, New York Department of Education.
G. O. LOCKWOOD, Petroleum Section.
J. E. LONG, The Delaware & Hudson Railroad Corp.
W. R. LOYD, Safety Div., Birmingham Chamber of Commerce.

Officers and Directors

7

A. E. LUNDSTEADT, Delivery, Taxicab & Bus Section.
THOS. H. MACDONALD, United States Department of Agriculture.
L. T. MCARTHUR, Peoria Safety Council.
MILLER MCCLINTOCK, Harvard University.
T. H. MCKENNEY, Illinois Steel Company, South Works.
A. D. MCWHORTER, Safety Div., Memphis Chamber of Commerce.
H. T. MARTIN, Fisk Rubber Company.
J. O. MARTIN, Employees' Publication Section.
F. W. MATSON, Minnesota Safety Council.
E. J. MEHREN, Portland Cement Association.
T. O. MEISNER, Power Press Section.
WM. G. METZGER, Mining Section.
I. W. MILLARD, Accident Prevention Equipment Manufacturers' Section.
HAROLD L. MINER, E. I. duPont de Nemours & Co., Inc.
HENRY J. MINEUR, Elizabeth Safety Council.
LAWRENCE M. MOORE, Eastbay Safety Council.
R. B. MORLEY, Industrial Accident Prevention Associations.
JOHN A. OARTEL, Carnegie Steel Company.
GEORGE C. A. OPP, The Detroit Edison Company.
LEW R. PALMER, Equitable Life Assurance Society.
JOHN C. PARKER, Brooklyn Safety Council.
DAVID A. PATTON, Newark Safety Council.
C. E. PETTIBONE, American Mutual Liability Insurance Company.
GEN. GEORGE B. PILLSBURY, War Department.
J. B. POWER, Seattle Traffic & Safety Council.
C. E. RALSTON, Western Pennsylvania Safety Council.
ALBERT S. REGULA, Industrial Relations Counselors, Inc.
LT. COL. HENRY A. RENINGER, Lehigh Portland Cement Company.
MARINUS RITER, Paterson Safety Council.
G. E. SANFORD, General Electric Company.
HENRY G. SCHAFFNER, Erie Safety Council.
T. A. SCHENDEL, Food Section.
ROBERT L. SCHMITT, Louisville Safety Council.
H. V. SCHREIBER, Transit Section.
HARRY A. SCHULTZ, United States Steel Corporation.
CHARLES B. SCOTT, Bureau of Safety, Inc.
LESTER D. SEYMOUR, Aeronautical Section.
EARL S. SHARTZER, Utica Safety Council.
RAY H. SHEETS, Madison County Safety Council.
DR. L. A. SHODDY, Bethlehem Steel Company.
ERNEST L. SIMONDS, New Haven Safety Council.
LEE E. SKEEL, Cleveland Safety Council.
C. W. SMITH, Standard Oil Company (Indiana).
WALTER DENT SMITH, Delaware Safety Council.
R. T. SOLENSTEN, Elliott Service Company.
E. C. SPRING, Lansdale, Pa.
GEORGE R. STEPHENS, Safety Bureau, Buffalo Chamber of Commerce.
LUCIUS S. STORRS, United Railways & Electric Co.

8 *Twenty-third Annual Safety Congress—National Safety Council*

DR. F. M. SULZMAN, Troy Safety Council.
ALFRED H. SWAYNE, General Motors Corporation.
CLARENCE P. TAYLOR, Massachusetts Safety Council.
ARTHUR M. TODE, Consulting Marine Engineer.
W. W. TRENCH, Schenectady Safety Council.
W. D. TURBEVILLE, San Antonio Safety Council.
J. A. VOSS, Metals Section.
H. A. WALKER, Rubber Section.
GEORGE H. WARFEL, Union Pacific Railroad Company.
DR. CASSIUS H. WATSON, American Telephone & Telegraph Company.
HARRY M. WEBBER, Illinois Bell Telephone Company.
ALBERT C. WHITE, JR., Springfield Safety Council.
S. E. WHITING, Liberty Mutual Insurance Company.
A. W. WHITNEY, National Bureau of Casualty & Surety Underwriters.
W. H. WINANS, Union Carbide & Carbon Corp.
DR. C. E. A. WINSLOW, Yale Medical School.
HARRY WISE, SR., Chattanooga Safety Council.
J. M. WOLTZ, Youngstown Sheet & Tube Company.
W. E. WORTH, International Harvester Company.
E. J. ZAUFF, Safety Bureau, Duluth Chamber of Commerce.
EARL W. ZIMMERMAN, Safety Div., Syracuse Chamber of Commerce.
J. B. ZOOK, Cement Section.

Council Purposes and Policies

The fundamental purpose of the National Safety Council is to conserve human life. It seeks this goal through a continuous campaign of accident prevention that is nationwide in scope, applies to all lines of hazardous activity, and directly or indirectly reaches our entire citizenry. It is a non-profit organization non-sectarian, and free from political affiliations. Since its organization in 1913, it has won respect as an essential national institution.

Inseparable from accident prevention is the Council's work in improving health conditions and preventing vocational diseases in American industry.

Today there are 4,000 members, representing every state in the Union, and many of the Canadian Provinces. There are 400 foreign members. The membership includes industrial corporations, firms, individuals, public officials, schools, chambers of commerce, clubs and civic organizations. About 70 per cent are industrial concerns, including the big steel companies, the oil companies, most of the railroads in the United States, the automotive industry, and others of outstanding importance in our national industrial field.

Origin and Growth

The history of the Council is an absorbing story. Unfortunately it cannot be detailed here. Suffice to say that the First Co-Operative Safety Congress was held under auspices of the Association of Iron and Steel Electrical Engineers in Milwaukee, in 1912, and, as a result, the National Safety Council was organized in New York the following year with fourteen members. During the first year the membership increased to 971.

The pioneers of American safety went to work on the sound premise that accidents were an unnecessary part of our social order and that through application of proper remedial measures they could be avoided. They set about to nationalize this theory, and to develop the detailed methods and materials through which accidents could be prevented. The members of the organization now are more than ever convinced that accidents are unnecessary and that they can be, and are being prevented. Striking examples of reductions in many different fields prove this contention.

Results of Organized Safety

Since the National Safety Council was organized in 1913, the national accident death rate in all fields excepting motor vehicle has been reduced 42 per cent. The motor vehicle accident problem continues to be a serious one. While there was a slight decline in fatalities in 1932—the first drop that ever occurred—1933 witnessed a slight increase, and the rise has been so accentuated during the first three-quarters of 1934 that the year will probably represent a new all-time high. Better-than-average results in motor vehicle safety have been achieved among school children, in commercial vehicle fleets, in states with properly administered drivers license laws and in cities with an effective community safety organization. These bright spots indicate that the national problem can be solved by a careful study and application of the methods which have already produced results.

The National Safety Council was started as an industrial safety organization and the best results are to be expected in this field. Here spectacular achievements have been made. The steam railroads, for instance, have reduced the accident rate among employees 75 per cent during the past ten years. A group of our largest steel industries have cut their accidents 90 per cent since 1913. Every year, scores of industrial establishments go through the entire year without a single disabling injury among their employees.

Along with these reductions the whole psychology of accidents has changed. Employer and employee both look at the proposition from a different viewpoint than they did some two decades ago. Accidents now are really out of date. In many

plants they are considered a disgrace that casts a cloud over good management and efficiency. There is very little room today for the careless worker in modern industry.

Looking Ahead

The safety problem is a universal one—and always will be—just as long as human beings inhabit the earth. Safety applies to everybody and to everything, physical or material; to every human act, to every man, woman, and child. It is only natural, therefore, that the idea which seems to have so firmly taken root in the United States should branch forth into other countries of the world. Organizations similar in purposes and activity to that of the National Safety Council have sprung up in many countries. Council posters have been widely copied for foreign use and several Council publications have been translated into other tongues.

All of these are hopeful signs of the times in the world of Safety. The National Safety Council is still young—as institutions go. A great amount of worth-while work has been crowded into its short life. Foundation work is always slow, whether one is building safe skyscrapers or safe men. The National Safety Council has been digging away at the bed-rock of public consciousness. It has made real progress and its achievements furnish ample inspiration for continuing its humanitarian efforts.

Cooperation

The purposes and policies of the National Safety Council are not always understood by those not in close touch with the Council's work. To meet the need for a brief and definite presentation of the Council's objectives, the following has been approved by the Executive Committee as an official statement of policy:

"The National Safety Council's objective is the elimination of accidents to men, women and children, as being deplorable, unnecessary and wasteful. It seeks memberships, cooperation and contacts to insure that its services may provide for instrumentalities and finances to accomplish this objective.

"Through education it seeks to demonstrate that the safe way is the right way and the best way, from the standpoint not only of human satisfaction but of social efficiency and economy. It seeks those ways and means for safety that satisfactorily fit into the practical affairs of life.

"Its financial policy is to return in service all moneys received, so operating without profit, and to undertake only those activities which can be assured of reasonable permanence. Much of its administrative personnel consists of volunteer workers.

"The National Safety Council holds itself open to give fullest and most cordial cooperation to all individuals, industries, organizations, communities, states and nations that are in accord with the principles and objectives of the organization, and the National Safety Council likewise asks and seeks cooperation from all these in carrying out its purposes."