

FILE NAME: Carrier (CAR)

DATE: 1970

DOC#: CAR020

DOCUMENT DESCRIPTION: National Safety Congress Transactions

yyv
NA677

1970

VOLUME 10

NATIONAL SAFETY CONGRESS TRANSACTIONS

**FOOD & BEVERAGE;
MEAT & LEATHER
INDUSTRIES;
TRADES & SERVICES**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

CRONIN: In many instances we do not know when a guest registers in the hotel whether he's wearing a hearing aid, has an artificial arm or leg, and may be completely disabled without their use. If this fact can be brought to the attention of the front office staff, it will help us to help them. Their advising us they are handicapped in some way would be a tremendous asset.

CHEEVER: How do you categorize this?

CRONIN: I am sure we would have to dig a little deeper. Chicago hotels should make an actual stand to bring it to their attention, to help us help them.

MURPHY: I think we accept our responsibility—both the hotel people and the Fire Department. But I think we would like to go just a little bit further if they would

work with us. Give the information to the hotel people in advance, I know I would get it from them. I think this is a must. You're taking care of their lives.

CHEEVER: If you really had an evacuation problem and if you have 500 guests, you would have a problem just getting them out of there. How would you go about getting them out of there?

MURPHY: We only go one floor at a time. Somebody has to tell the fire department what the conditions are. The fire department then takes charge and makes the decision whether or not to evacuate. If we find we have to evacuate, we evacuate the floor the fire originated in—then the floor above it and the floor below it, and each succeeding floor, based on the degree of the fire.

OFFICERS OF THE

FOOD AND BEVERAGE SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—LLOYD O. STAAB, Saf. Dir., Grain Processing Corp., Muscatine, Iowa

First Vice-Chairman—HARVEY H. MARSDEN, Plt. Safety Dir., Kellogg Co., Battle Creek, Mich.

Second Vice-Chairman—DONALD E. SCHEINOST, Corp. Saf. Mgr., National Distillers & Chemical Corp., Cincinnati, Ohio

Secretary—DONALD ESPINOSA, Saf. Dir., Rheingold Breweries, Inc., Brooklyn, N. Y.

Program Chairman—ROBERT D. VANDENBERG, Ind. Safety Dir., General Mills, Inc., Minneapolis, Minn.

Newsletter Editor—MARVIN HOYT, Empl. Benefits Coord., Gerber Products, Fremont, Mich.

Newsletter Co-Editor—JOHN P. HEIN, Safety & Labor Mgr., The Larsen Co., Ft. Atkinson, Wis.

Membership Chairman—JOHN L. RHEINHEIMER, Corp. Safety Coord., Hunt Foods & Industries, Inc., Fullerton, Calif.

Off-The-Job Safety Committee—CLYDE W. STEVENS (Chairman), Saf. Dir., Jos. E. Seagram & Sons, Inc., Baltimore, Md.; B. R. LEEDY, Safety Dept., Pabst Brewing Co., Milwaukee, Wis.

Associations & Industry Relations Committee—*N. E. THIEL (Chairman), Dir. of Saf., Sealtest Foods-Southern Dairies, Charlotte, N. C.; *NIXON DE TARNOWSKY, Saf. Mgr., The F & M Schaefer Brewing Co., Brooklyn, N. Y.; NORMAN PAIGE, Dir., Govt. Relations, Distilled Spirits Institute, Inc., Washington, D. C.; GERALD A. KARSTENS, Dir. of Feed Prod., American Feed Manufacturers Assn., Inc., Chicago, Ill.; JOHN PANKOW, Legal Dept., U. S. Brewers Assn., Washington, D. C.

Engineering Committee—ROBERT SCHOOF (Chairman), Mgr. Saf. & Plant Protect., Joseph Schlitz Brewing Co., Milwaukee, Wis.; JAMES AMIDON, Saf. Dir., Central Soya Co., Ft. Wayne, Ind.

Fire Prevention Committee—GLEN PERKINS (Chairman), Safety Engr., Assn. of Mill & Elevator Mutual Insurance Cos., Chicago, Ill.; *JOHN M. JENSEN, Dir. of Saf., CPC International Inc., Argo, Ill.; JOHN HAWKINS, Saf. Coord., Post Div., General Foods Corp., Kankakee, Ill.

Agriculture, Processors & Canning Division—E. A. LOHRMANN (Chairman), Div., Ind. Relations Mgr., Del Monte Corp., Rochelle, Ill.; MILTON J. HATTIER, Dir. Saf., The Southern Cotton Oil Co., New Orleans, La.; P. J. MUELLER, Saf. Engr., Green Giant Co., LeSueur, Minn.; ROBERT ALDEN, Corp. Saf. Administrator, Castle & Cooke Inc., Honolulu, Hawaii; J. W. SALISBURY, Ins. Mgr. & Saf. Dir. The Coast Corp., New Orleans, La.

Bakers & Dairy Products Division—DONALD H. ROSS (Chairman), Saf. Mgr., Kitchens of Sara Lee, Deerfield, Ill.; CHAS. P. ORR, Corp. Saf. Consultant, General Foods Corp., White Plains, N. Y.; KEITH R. LINDEMANN, Mgr. Saf., Kraft Foods Div., Kraftco. Corp., Chicago, Ill.; *STANLEY W. PARSONS, General Saf. Dir., Carnation Co., Los Angeles, Calif.

Brewers Division—*GREGG R. MEYERS (Chairman), Dir. Saf. & Security, Pabst Brewing Co., Milwaukee, Wis.; WALTER FEDYK, Saf. Mgr., Carling Brewing Co., Cleveland, Ohio; CAL LUC, Dir., Saf., Security & Fire Prev., Jackson Brewing Co., New Orleans, La.; *NORMAN L. HEUER, Corp. Saf. Dir., Anheuser Busch Inc., St. Louis, Mo.

Confectioners Division—*ALBERT A. CACHERAT (Chairman), Pers. Dir., Reed Candy Co., Chicago, Ill.; WILLIAM F. MORGAN, Saf. Mgr., Curtiss Candy Co., Franklin Park, Ill.; *WM. G. SMITH, Dir. of Saf., The Nestle Co., Fulton, N. Y.

Distillery Safety Directors—WILBUR L. GRAFF (Chairman), Saf. & Security Eng., Brown-Forman Distillers Corp., Louisville, Ky.; P. E. GUNTERMAN, Saf. Supv., Joseph E. Seagram's & Sons, Inc., Louisville, Ky.; R. R. KITTINGER, Saf. Dir., National Distillers Products Co., Frankfort, Ky.; GERALD MUELLER, Mgr. Saf. & Fire Protection, Hiram Walker & Sons, Inc., Peoria, Ill.

Grain Handling & Processing Division—JACK KROLO (Chairman), Supvr. Saf. & Plant Protection, American Maize Co., Roby, Ind.; DONALD L. BROWN, Dir. of Saf., A. E. Staley Manufacturing Co., Decatur, Ill.; HARRY GETZLAFF, Mgr. Corp. Saf., The Quaker Oats Co., Chicago, Ill.; DICK KLANN, Plant Protect. & Saf. Dept., The Hubinger Co., Keokuk, Iowa; CHARLES LORTON, Dir. of Saf. & Sanitation, CPC, International Inc., Pekin, Ill.; JOHN B. LEWIS III, Saf./Security Engr., Clinton Corn Processing Co., Clinton, Iowa; WILLIAM DAVID RAMBO, Saf. Rep., National Starch & Chemical Corp., Indianapolis, Ind.; *J. R. McCANN, General Mgr., Loss Prevention Dept., Ralston Purina Co., St. Louis, Mo.

Poultry Processing Division—*L. H. GRETZER (Chairman), Ins. Dept., Cargill, Inc., Minneapolis, Minn.; M. D. GENTRY, Saf. Dir., Consolidated Foods Corp., Chicago, Ill.; GENE SHEPARD, Programs Dir., Institute of American Poultry Industries, Chicago, Ill.

Nominating Committee—*GREGORY KROHN, Supvr., Health & Saf., Joseph Schlitz Brewing Co., Milwaukee, Wis.; *A. A. CACHERAT; *WILLIAM G. SMITH; *L. H. GRETZER; *J. M. JENSEN; *J. R. McCANN

*Past General Chairmen

OFFICERS OF THE MEAT AND LEATHER INDUSTRIES SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—RICHARD W. TURNER, Engineering Mgr., Central Mutual Insurance Co., Boston, Mass.

First Vice-Chairman—HERBERT KLEPPER, Safety Dir., John Krauss, Inc., Jamaica, N. Y.

Second Vice Chairman—MICHAEL CAVALIER, Personnel Dir., Tobin Packing Co., Rochester, N. Y.

Newsletter Editor—*HOWARD REBHOLZ, Safety Dir., The Rath Packing Co., Waterloo, Iowa

Secretary & Treasurer—*GREG PIETRASZEK, Technical Editor, The National Provisioner, Chicago, Ill.

Assistant Secretary—JACK R. SCHOEMER, Sup. Ind., Relations, Armour Leather Co., Sheboygan, Wis.

Program Chairman—*MAURICE F. LEAHY, Chief, Plant Protection, Oscar Mayer & Co., Madison, Wis.

Membership Committee Chairman—MEL H. SEARFOSS, Safety and Training Coordinator, Swift & Co., Chicago, Ill.

For Meat Packing—GARY P. FISHER, Corp. Safety Director, Cudahy Company, Phoenix, Ariz.; LESTER HARDY, Safety Dir., East Tennessee Packing Co., Knoxville, Tenn.; RICHARD SOKOLIK, Safety Dir., Royal Packing Co., National Stock Yards, Ill.; *R. W. UNWIN, Consultant, Palos Park, Ill.; JOE WATSON, Frosty Morn Meats, Kinston, N. C.

For Leather Industries—JACK R. SCHOEMER, Supervisor Plant Ind. Relations, Armour Leather Co., Sheboygan, Wis.; JOHN KENNEDY, Safety & Loss Control Dir., Genesco, Inc., Nashville, Tenn.

Off-the-Job Safety Committee—MICHAEL CAVALIER (Chairman), Personnel Dir., Tobin Packing Co., Rochester, N. Y.; RICHARD SOKOLIK, Safety Dir., Royal Packing Co., National Stock Yards, Ill.

Leather Industries Division—RALPH APPELL, Mgr. Employee Services & Safety, Wolverine World Wide, Inc., Rockford, Mich.; R. G. DELEUW, Ass't. to Pres., International Shoe Co., St. Louis, Mo.; *A. J. (TONY) DITTMER, Consultant, Des Plaines, Ill.; JOHN KENNEDY, Safety and Loss Control Dir., Genesco, Inc., Nashville, Tenn.; JACK R. SCHOEMER, Sup. Ind. Rel., Armour Leather Co., Sheboygan, Wis.; ROBERT L. WALMA, Dir. of Ind. Relations, Eagle Ottawa Leather Co., Grand Haven, Mich.; LORRAINE WALKEY, R. N., Chicago Rawhide Mfg. Co., Chicago, Ill.

Contests, Awards and Incentives—CARL W. LINTJER, Industrial Relations Mgr., Peter Eckrich & Sons, Inc., Fort Wayne, Ind.

Engineering Committee Chairman—JOHN W. TROLLEN, Director Sanitation & Safety, Geo. A. Hormel & Co., Austin, Minn.

For Meat Packing—HARRY M. JONES, Vice Pres. & Plant Supt., Southern Foods, Inc., Columbus, Ga.; M. H. SEARFOSS, Safety and Training Coordinator, Swift & Co., Chicago, Ill.; MARTIN J. HOULIHAN, Tobin Packing Co., Inc., Albany Division, Albany, N. Y.

For Tanning & Leather Products—JACK R. SCHOEMER, Sup. Ind. Rel., Armour Leather Co., Sheboygan, Wis.; *A. J. DITTMER, Consultant, Des Plaines, Ill.

Public Relations Committee—*GREG PIETRASZEK (Chairman), The National Provisioner, Chicago, Ill.; JOHN O. GUNN, JR., Div. Member Services, Secy., National Independent Meat Packers Assn., Washington, D. C.; *DONALD S. MACKENZIE, Dir., Packinghouse Practices & Research, American Meat Institute, Chicago, Ill.; CAL SANTARE, Exec. Vice Pres., Western States Meat Packing Assn., San Francisco, Calif.

Legislative and Insurance Committee—GEORGE PETERSEN (Chairman), Casualty, Armour & Co., St. Paul, Minn.

Advisory Committee—*A. J. DITTMER, Des Plaines, Ill.; *R. W. (DICK) UNWIN, Consultant, Palos Park, Ill.

Health and Research Committee—*NORMAN KIRK (Chairman), Mgr., Welfare & Safety, Canada Packers Ltd., Toronto, Ont., Can.; *DR. TRACY BARBER, Medical Dir., Geo. A. Hormel & Co., Austin, Minn. (member Industrial Conference); *HOWARD REBHOLZ, Safety Dir., The Rath Packing Co., Waterloo, Iowa; LORRAINE WALKEY, R. N., Chicago Rawhide Mfg. Co., Chicago, Ill.

Cameron Award Coordinator—HERBERT KLEPPER, Safety Dir., John Krauss, Inc., Jamaica, N. Y.

Small Meat Packer Committee—RICHARD SOKOLIK; HERBERT KLEPPER; RICHARD TURNER; JOE WATSON

Staff Representative—RAY F. SMITH, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

*Past General Chairmen

OFFICERS OF THE TRADES & SERVICES SECTION NATIONAL SAFETY COUNCIL 1970-71

General Chairman—CHARLES V. CULBERTSON, Dir., Safety & Employee Benefits, Marriott Corp., Washington, D. C.

Vice Chairman—THOMAS J. REILLY, Mgr., Casualty Dept., Schirmer Engineering Corp., Niles, Ill.

Program Chairman—RAY KETCHMARK, Safety Officer, University of Illinois at Chicago Circle Campus, Chicago, Ill.

Program Vice Chairman—G. O. CUNNINGHAM, Loss Control Supvr., Allstate Insurance Co., Northbrook, Ill.

Membership Chairman—PAUL SCHMIDT, Dir., Rehabilitation Services, Indianapolis Goodwill Industries, Inc., Indianapolis, Ind.

Membership Vice Chairman—A. L. DOWELL, Director of Safety, Holiday Inns of America, Inc., Memphis, Tenn.

Newsletter Editor—J. F. WELLER, Manager, Safety & Compliance, Bekins Van Lines Co., La Grange, Ill.

Newsletter Associate Editor—JAS. W. SMIRLES, Sales Mgr. Midwest Div., National Loss Control Service Corp., Chicago, Ill.

Research Chairman—*VERNON E. CORDELL, Dir., Pub. Health & Safety, National Restaurant Assn., Chicago, Ill.

Midwest Region Chairman—ROBERT COUSAR, Safety Dir., Jewel Food Stores, Melrose Park, Ill.

Eastern Region Chairman—RAYMOND C. ELLIS, JR., Dir., Safety Services, Hotel Safety Trade Group, New York, N. Y.

Food Services Division—*VERNON E. CORDELL (Co-Chairman), Dir., Public Health & Safety, National Restaurant Assn., Chicago, Ill.; EDWARD L. KENNEDY (Co-Chairman), Chief Dining Service Supvr., American Telephone and Telegraph Co., New York, N. Y.; LORIN A. BENSON, Admin. Engr. Dept., CNA Insurance, Chicago, Ill.; DANIEL R. KIFNER, Dir. Saf. & Security, Restaurant Associates, Inc., New York, N. Y.; WM. C. LEYPOLDT, Safety & Security Manager, Gino's Inc., King of Prussia, Pa.; JOHN D. LINEBERGER, JR., Food Service Div., Eckerd Drug Stores, Charlotte, N. C.; ANDREW J. O'LEARY, Safety Rep., Frank G. Shattuck Co., New York, N. Y.; GEORGE N. STICH, General Manager, Self Insurers Management, Inc., Mobile, Ala.; JACK E. UHLER, Assoc. Dir., Housing, University of Missouri, Johnston Hall, Columbia, Mo.

Food Retailers Division—THOMAS P. DOLAN (Co-Chairman), Personnel Director, Scot Lad Foods, Inc., Bradley, Ill.; A. GEORGE GROVES (Co-Chairman), Safety Dir., Food Fair Stores, Inc., Philadelphia, Pa.; G. O. CUNNINGHAM, Loss Control Supervisor,

Allstate Insurance Co., Northbrook, Ill.; JAMES A. DEVINE, Personnel Dir., National Food Stores, Inc., Milwaukee, Wis.; RUSSELL A. PUTNEY, Sr. Fire/Loss Prevention Specialist, Nationwide Insurance, Columbus, Ohio; CURT TAYLOR, Safety Supvr., Grand Union Co., East Paterson, N. J.; CHARLES THALER, Safety Director, Supermarkets General Corp.; Woodbridge, N. J.; LEA P. WARNER, Jr., Fred S. James & Co., Inc., Philadelphia, Pa.

Hotel and Motel Division—ARNOLD F. KARR (Co-Chairman), Secretary, Greater Chicago Hotel/Motel Assn., Chicago, Ill.; MEL SANDLER (Co-Chairman), Director, Employee Relations, American Hotel & Motel Assn., New York, N. Y.; CHARLES L. O'CONNOR, Gen. Mgr., The Westbury, New York, N. Y.; A. L. DOWELL, Director of Safety, Holiday Inns of America, Inc., Memphis, Tenn.; PATRICK F. GARRETT, Safety Director & Claims Manager, New York, N. Y.; CHESTER STICKROD, Safety Dir., New York Hilton at Rockefeller Center, New York, N. Y.

Mercantile and Warehouse Division—WM. R. GAYNOR (Co-Chairman), Safety Engineer, Sears, Roebuck & Co., Chicago, Ill.; MICHAEL F. CLIFFORD (Co-Chairman), National Safety Director, Allied Stores Corp., New York, N. Y.; JACK GREEN, Safety Dir., B. Altman & Co., New York, N. Y.; HOWARD HAIMOWITZ, Operations Services Group, National Retail Merchants Assn., New York, N. Y.; GEORGE MATWES, Safety and Medical Services Dir., Bamberger's New Jersey, Newark, N. J.; ROBERT H. NEAL, Labor Relations Mgr. & Saf. Dir., Joseph Horne Co., Pittsburgh, Pa.; MURRY M. PAULL, M.D., Safety & Medical Consultant, Carson, Pirie Scott & Co., and Sears, Roebuck & Co., Chicago, Ill.; WM. SCHEFFLER, Safety Dir., Carson, Pirie Scott & Co., Chicago, Ill.; CHESTER W. SCHIRMER, President, Schirmer Engineering Corp., Niles, Ill.; ALLEN D. WALTERS, Secretary, American Warehousemen's Assn., Chicago, Ill.

Buildings and Offices Division—HENRY H. BROCHHAGEN (Chairman), Safety Engr., Port of New York Authority, New York, N. Y.; RAYMOND GNESIN, Esq., Accident Prevention & Safety League, Inc., New York, N. Y.; DOMINICK MASUCCI, Supvr., Construction Services, Consolidated Mutual Ins. Co., Brooklyn, N. Y.; JOHN P. MURPHY, Asst. Mgr., Engr. Dept., Firemen's Fund American, New York, N. Y.; EDW. D. TAYLOR, JR., Chief Safety Engr., New York Office, Central Mutual Insurance Co., New York, N. Y.

Members-at-Large—ROBERT H. BLUNDRED, Executive Secy., International Association of Amusement Parks, Chicago, Ill.; JOHN REINECKE, Mgr. of Administration, Linen Supply Association of America, Miami Beach, Fla.; STANLEY L. STERN, Senior Vice-President, Wometco Enterprises, Inc., Miami, Fla.

Nominating Committee—*ELLIOTT TANZ (Chairman), Asst. Vice President, Loss Prevention, Consolidated Mutual Insurance Co., Brooklyn, N. Y.; *VERNON E. CORDELL, Dir., Public Health & Safety, National Restaurant Assn., Chicago, Ill.; *JAMES WHITENER, Training Manager, Pope's Cafeterias, St. Louis, Mo.

Staff Representative—A. M. BALTZER, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

*Past General Chairmen

PB-3375-143-SB

75-69T

C

B/T

PLAN NOW TO ATTEND THE

1971 NATIONAL SAFETY CONGRESS OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

1972 The Congress is always a big week, a worthwhile week for the 13,000 safety people who attend.

1973 At the '71 Congress you can meet other safety people, with the same problems and responsibilities as yourself. You can exchange views and ideas on accident prevention, health, hygiene, and fire prevention . . . on safety in industry, traffic, school, at home and on the farm.

1974 You can see the largest of all safety equipment exhibits at the Congress . . . an opportunity for you to make well-informed buying decisions for your company.

This four-day educational program, planned and presented by the National Safety Council, can be your most thought-provoking, most worthwhile safety experience in 1971.

Make plans early to attend the 1971 Congress and bring the other people in your organization who have safety responsibilities.

FUTURE CONGRESS DATES

1971	October	25-28
1972	Oct. 30 - Nov. 2	
1973	Oct. 29 - Nov. 1	
1974	Sept. 30 - Oct. 3	

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

1970

NA677

VOLUME 1

National Safety Council.

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**GENERAL
SESSIONS**

ANNUAL MEETING OF MEMBERS
CONGRESS BANQUET
LIST OF EXHIBITORS



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

OFFICERS—1970-71

Chairman, Board of Directors—J. H. TYLER McCONNELL, President, Delaware Trust Company, Wilmington, Del.

Vice Chairman, Board of Directors—DR. DEWEY F. BARICH, President, Detroit Institute of Technology, Detroit, Mich.

President—HOWARD PYLE, President, National Safety Council, 425 North Michigan Avenue, Chicago, Ill. 60611

Vice President for Farms—NORMAN C. MINDRUM, Director, National 4-H Service Committee, Inc., Chicago, Ill.

Vice President for Finance—H. S. McFARLAND, Director of Personnel Relations, General Motors Corporation, Detroit, Mich.

Vice President for Homes—MISS JANICE R. WESTABY, M.P.H., Associate Professor, School of Public Health, The University of North Carolina, Chapel Hill, N. C.

Vice President for Industry—COLE A. ALLEN, Vice President, American Mutual Liability Insurance Company, Wakefield, Mass.

Vice President for Labor—ARTHUR P. GILDEA, Secretary-Treasurer, United Brewery Workers, Cincinnati, Ohio

Vice President for Membership—W. C. HEWITT, Chairman of the Executive Committee, Phillips Petroleum Company, Bartlesville, Okla.

Vice President for Motor Transportation—W. L. FAYLE, President, Transportation Division, Burlington Industries, Inc., Burlington, N. C.

Vice President for Production—HUGH CURTIS, Professor, Magazine and Book Journalism, Drake University, Des Moines, Iowa

Vice President for Public Information—HAROLD BURSON, President, Burson-Marsteller, New York, N. Y.

Vice President for Public Safety—ROBERT A. OLEN, Executive Vice President, Crane Carrier Canada Ltd., Rexdale, Ontario, Canada

Vice President for Religious Leaders—REV. ROBERT A. GRUNOW, Director of Seminary Relations, Concordia Seminary, St. Louis, Mo.

Vice President for Research—B. J. CAMPBELL, Ph.D. Director, Highway Safety Research Center, University of North Carolina, Chapel Hill, N. C.

Vice President for Schools and Colleges—DR. JAMES D. LOGSDON, Professor of Education, Florida Atlantic University, Boca Raton, Fla.

Vice President for State and Local Safety Organizations—F. R. BARNAKO, Manager of Safety and Workmen's Compensation, Bethlehem Steel Corporation, Bethlehem, Pa.

Vice President for Traffic—JAMES P. ECONOMOS, Director, Traffic Court Program, American Bar Association, Chicago, Ill.

Vice President for Women—MRS. CHARLOTTE MONTGOMERY, Contributing Editor, Good Housekeeping Magazine, Westfield, N. J.

Vice President for Youth Activities—ALEX A. MALESKI, Director, National Special Services, Boys' Clubs of America, New York, N. Y.

Executive Vice President—JOHN D. LAWLOR, Executive Vice President, National Safety Council, 425 North Michigan Avenue, Chicago, Ill. 60611

Secretary and Treasurer—H. W. CHAMPLIN, Secretary and Treasurer, National Safety Council, 425 North Michigan Avenue, Chicago, Ill. 60611

Assistant Treasurer—J. D. FULFORD, Director, Treasury Division, National Safety Council, 425 North Michigan Avenue, Chicago, Ill. 60611

Assistant Secretary—JEAN SROOR, Assistant Secretary, National Safety Council, 425 North Michigan Avenue, Chicago, Ill. 60611

National Safety Council

TRUSTEES—1970-71

Chairman of the Trustees—HOWARD PYLE, President, National Safety Council, 425 North Michigan Avenue, Chicago, Ill. 60611

Vice Chairman of the Trustees—A. E. PERLMAN, Chairman, Eastern Railroad Presidents Conference, New York, N. Y.

Members

E. H. BAILEY, President, Union Pacific Railroad Company, Omaha, Neb.

R. F. BARKER, Chairman, PPG Industries, Inc., Pittsburgh, Pa.

EDWARD J. BOCK, President, Monsanto Company, St. Louis, Mo.

WALTER J. BURKE, Secretary-Treasurer, United Steelworkers of America, Pittsburgh, Pa.

WALTER F. CAREY, President, Automobile Carriers Inc., Flint, Mich.

W. G. CLAYTOR, JR., President, Southern Railway System, Washington, D. C.

STEWART S. CORT, President, Bethlehem Steel Corporation, Bethlehem, Pa.

J. DOYLE DEWITT, Chairman, The Travelers, Hartford, Conn.

RUSSELL DEYOUNG, Chairman, Goodyear Tire & Rubber Company, Akron, Ohio

EMILE F. DU PONT, Director, E. I. du Pont de Nemours & Company, Inc., Wilmington, Del.

COY G. EKLUND, Executive Vice President, Equitable Life Assurance Society of the United States, New York, N. Y.

T. M. EVANS, Chairman, Crane Company, New York, N. Y.

National Safety Council

(Trustees, continued)

HENRY W. GADSDEN, President, Merck & Company, Inc., Rahway, N. J.

EDWIN H. GOTT, Chairman, United States Steel Corporation, Pittsburgh, Pa.

WILLIAM E. GRACE, President, Fruehauf Corporation, Detroit, Mich.

THE REVEREND BILLY GRAHAM, Montreat, N. C.

JOHN D. HARPER, Chairman, Aluminum Company of America, Pittsburgh, Pa.

E. ROLAND HARRIMAN, Brown Brothers Harriman and Company, New York, N. Y.,

WILLIAM A. HEWITT, Chairman, Deere & Company, Moline, Ill.

JAMES R. KERR, President, Avco Corporation, New York, N. Y.

JOSEPH L. LANIER, Chairman, West Point-Pepperell, Inc., West Point, Ga.

BIRNY MASON, JR., Chairman, Union Carbide Corporation, New York, N. Y.

J. H. TYLER McCONNELL, President, Delaware Trust Company, Wilmington, Del. (Ex-Officio)

BROOKS McCORMICK, President, International Harvester Company, 401 North Michigan Avenue, Chicago, Ill. 60611

NEIL McELROY, Chairman, The Procter & Gamble Company, Cincinnati, Ohio

ROBERT S. OELMAN Chairman, The National Cash Register Company, Dayton, Ohio

A. E. PERLMAN, Chairman, Eastern Railroad Presidents Conference, New York, N. Y.

HOWARD PYLE, President, National Safety Council, 425 North Michigan Avenue, Chicago, Ill. 60611 (Ex-Officio)

National Safety Council

(Trustees, continued)

- J. M. ROCHE, Chairman of the Board, General Motors Corporation, New York, N. Y.
- H. I. ROMNES, Chairman, American Telephone and Telegraph Company, New York, N. Y.
- THOMAS W. RUSSELL JR., President, Abex Corporation, New York, N. Y.
- PHILIP W. SCOTT, President, The Budd Company, Philadelphia, Pa.
- LYNN A. TOWNSEND, Chairman, Chrysler Corporation, Detroit, Mich.
- M. J. WARNOCK, Chairman, Armstrong Cork Company Lancaster, Pa.
- JOHN L. WEINBERG, Partner, Goldman, Sachs & Company, New York, N. Y.
- HUNTER P. WHARTON, General President, International Union of Operating Engineers, Washington, D. C.
- ROBERT W. WOODRUFF, Chairman, Finance Committee, The Coca-Cola Company, Atlanta, Ga.
- M. A. WRIGHT, Chairman of the Board, Humble Oil & Refining Company, Houston, Tex.

National Safety Council

BOARD OF DIRECTORS 1970-71

Chairman of the Board of Directors—J. H. TYLER McCONNELL, President, Delaware Trust Company, Wilmington, Del.

Vice Chairman of the Board of Directors—DR. DEWEY F. BARICH, President, Detroit Institute of Technology, Detroit, Mich.

Members

- ROBERT H. ALBISSER, Safety Coordinator, Corporate Personnel Relations, Merck & Co., Inc., Rahway, N. J.
- COLE A. ALLEN, Vice President, American Mutual Liability Insurance Company, Wakefield, Mass.
- T. C. ALLEN, Vice President-Industrial Relations, National Association of Manufacturers, New York, N. Y.
- A. S. ALSTON, President, Southwestern Bell Telephone Company, St. Louis, Mo.
- DUDLEY ANDRY, Executive Director, Metropolitan New Orleans Safety Council, Inc., New Orleans, La.
- RICHARD K. AYERS Managing Director, Colorado Safety Association, Denver, Colo.
- HOWARD M. BAKER, Director-Security Department, Montreal Urban Community Transit Commission, Montreal, Quebec, Can.
- T. E. BARBER, M.D., Medical Director, Geo A. Hormel & Company, Austin, Minn.
- DR. DEWEY F. BARICH, President, Detroit Institute of Technology, Detroit, Mich.
- F. R. BARNAKO, Manager of Safety and Workmen's Compensation, Bethlehem Steel Corporation, Bethlehem, Pa.
- KENNETH N. BEADLE, Vice President, Safety, Pacific Intermountain Express, Oakland, Calif.
- HARRY W. BECKER, Director of Safety, American Water Works Association, New York, N. Y.
- DR. FRANK BENNETT, Supervisor, Safety Education, Baltimore City Public Schools, Baltimore, Md.
- M. F. BIANCARDI, Director, Product Safety, Employers Insurance of Wausau, Wis.
- GORDON C. BILL Vice President and General Manager, Bellcomm, Inc., Washington, D. C.

National Safety Council

(Board of Directors, continued)

LEO BOGART, Executive Vice President and General Manager, Bureau of Advertising, American Newspaper Publishers Association, New York, N. Y.

ROBERT F. BOWERS, Director of Personnel Relations, Chrysler Corporation, Detroit, Mich.

WILLIAM P. BOWLING, Director of Safety and Claims, Continental Trailways, Washington, D. C.

CARROLL W. BOYCE, Director, Motor Truck Manufacturers Division, Automobile Manufacturers Association, Inc., Washington, D. C.

CAESAR BRANCHINI, Director, Division of Publishing Services, The Equitable Life Assurance Society of the United States, New York, N. Y.

CLAUDE R. BROWN, Vice President, National Bank of Commerce, Seattle, Wash.

ALAN F. BURCH, Safety Director, International Union of Operating Engineers, Washington, D. C.

NORMAN R. BURKE, Senior Vice President, Burke Rubber Company, San Jose, Calif.

JAMES BURPO, President, James Burpo Insurance, Inc., Sacramento, Calif.

HAROLD BURSON, President, Burson-Marsteller, New York, N. Y.

CLAYTON D. CALKINS, Manager Safety & Personnel Pacific Motor Trucking Company San Francisco Calif.

B. J. CAMPBELL, Ph.D., Director, Highway Safety Research Center, The University of North Carolina, Chapel Hill, N. C.

WALTER F. CAREY, President, Automobile Carriers, Inc., Flint, Mich.

W. N. CAREY, JR., Executive Director, Highway Research Board, Washington, D. C.

JOHN B. CARNAHAN, Vice President, Armour & Company, Chicago, Ill.

KEN CHEATHAM, Assistant Director, Program Development Division, American Farm Bureau Federation, Chicago, Ill.

A. H. CHRISTIAN, Division Safety Engineer, American Viscose & Chemical Divisions, FMC Corporation, Philadelphia, Pa.

ALLEN L. COBB, Corporate Safety Coordinator, Eastman Kodak Company, Rochester, N. Y.

JOHN T. COLLIER, Director, Special Projects, Social and Rehabilitation Service, U. S. Department of Health, Education and Welfare, Washington D. C.

National Safety Council

(Board of Directors, continued)

PAUL H. CONNELLEY, United Brotherhood of Carpenters and Joiners of America, Washington, D. C.

JOHN M. COURIC, Vice President for Public Relations, National Association of Broadcasters, Washington, D. C.

ERNEST G. COX, Coordinator, Safety Committee on Review and Education, American Trucking Association, Inc., Washington, D. C.

JAMES M. CRAWFORD Vice President, INA Foundation, Insurance Company of North America, Philadelphia, Pa.

HUGH E. CURTIS, Professor, Magazine and Book Journalism, Drake University, Des Moines, Iowa

M. R. DARLINGTON, JR., Director, Automotive Industries Division, Highway Users Federation for Safety and Mobility, Washington, D. C.

H. C. DAULTON, Director of Safety, Louisville & Nashville Railroad Company, Louisville, Ky.

HON. MATTIE BELLE DAVIS, Judge, Metropolitan Court of Dade County, Miami, Fla.

MISS NETTIE L. DAY, Chief, Accident Prevention Section, North Carolina State Board of Health, Raleigh, N. C.

EDWARD N. DECK, Consultant, Safety and Plant Protection, General Electric Company, New York, N. Y.

CLAUDE DE ST. PAER, Assistant Director, Program Development Division, American Farm Bureau Federation, Chicago, Ill.

FRANK DICKEY, Vice President, Deere & Company, Moline, Ill.

THOMAS A. DILLON, Business Representative-District 55, International Association of Machinists, Joliet, Ill.

WM. C. DOUCE, Senior Vice President, Phillips Petroleum Company, Bartlesville, Okla.

JOHN L. DOWLING, Director, Safety and Health (Canada), United Steelworkers of America, Toronto, Ontario, Can.

DONALD D. DOYLE Senior Vice President, Marsh & McLennan, Inc., San Francisco, Calif.

EMILE F. DU PONT, Director, E. I. du Pont de Nemours & Company, Inc., Wilmington, Del.

JAMES P. ECONOMOS, Director, Traffic Court Program, American Bar Association, Chicago, Ill.

MRS. LEWIS EDMUNDSON, Walsenburg, Colo.

National Safety Council

(Board of Directors, continued)

IVAN L. ELAND, Director of Safety Education, Department of Education, University of Northern Iowa, Cedar Falls, Iowa

W. L. FAYLE, President, Transportation Division, Burlington Industries, Inc., Burlington, N. C.

D. M. FERGUSON, Director of Safety Services, Nationwide Insurance Company, Columbus, Ohio

A. C. FIELD, JR., Vice President, Manager, Public Affairs, WGN Group Stations, WGN Continental Broadcasting Company Chicago, Ill.

MAURICE FISCHER, Chicago, Ill.

WELBY M. FRANTZ, President, Eastern Express, Inc., Terre Haute, Ind.

ROBERT G. FRAZIER, M.D., Executive Director, American Academy of Pediatrics, Evanston, Ill.

DR. JOHN V. FRIDLUND, Director of Business Affairs, School District 97, Oak Park, Ill.

JOHN W. GIBBONS, Director of Public Relations, Highway Users Federation for Safety and Mobility, Washington, D. C.

ARTHUR P. GILDEA, Secretary-Treasurer, United Brewery Workers, Cincinnati, Ohio

MRS. LIONEL C. GILMOUR, Bellevue, Wash.

ROBERT E. GOCKE, Vice President, Industrial Relations and Personnel, The Greyhound Corporation, Chicago, Ill.

GEORGE L. GORBELL, Manager, Personnel Safety, Monsanto Company, St. Louis, Mo.

WM. PAUL GRAY, National Executive Secretary, Future Farmers of America, National FFA Center, Alexandria, Va.

CHARLES T. GREENE, Director, D. C. Industrial Safety Division, Minimum Wage and Industrial Safety Board, Washington, D. C.

GERARD O. GRIFFIN, Manager, Hazard Control, Dravo Corporation, Pittsburgh, Pa.

DR. JOHN V. GRIMALDI, Director, The Center for Safety, New York University, New York, N. Y.

REV. ROBERT A. GRUNOW, Director of Seminary Relations, Concordia Seminary, St. Louis, Mo.

SAMUEL R. GUARD, Director, Metropolitan Studies Center, Illinois Institute of Technology, Chicago, Ill.

National Safety Council

(Board of Directors, continued)

GEORGE C. GUENTHER, Director, Bureau of Labor Standards, U. S. Department of Labor, Washington, D. C.

ROY HAEUSLER, Chief Engineer, Automotive Safety and Security Chrysler Corporation, Detroit, Mich.

W. J. HARRISON, JR., Manufacturing Representative, Getty Oil Company, Delaware City, Del.

R. M. HARTMAN, Assistant Manager of Safety and Workmen's Compensation, Bethlehem Steel Corporation, Bethlehem, Pa.

ALBERT L. HAUCK, Vice President, Director of Public Relations and Marketing, Transportation Underwriters, Inc., Indianapolis, Ind.

HARRY HELTZER, President, 3M Company, St. Paul, Minn.

W. C. HEWITT, Chairman of the Executive Committee, Phillips Petroleum Company, Bartlesville, Okla.

DR. KENNETH HILDEBRAND, Minister, The Central Church of Chicago, Chicago, Ill.

JOSEPH R. HOGSETT, Attorney at Law, Hogsett, Shaffer & Gibson, Kansas City, Mo.

E. E. HOISINGTON, Assistant Director, Health & Safety Service, National Council, Boy Scouts of America, North Brunswick, N. J.

PAUL J. HOOVER, Vice President-Civic Relations, The Halle Bros. Company, Cleveland, Ohio

KENNETH A. HOUSMAN, Assistant Postmaster General, Bureau of Personnel, Post Office Department, Washington, D. C.

H. M. HUNTINGTON, General Supervisor of Safety, International Harvester Company, Manufacturing Services, Hinsdale, Ill.

DR. WALTER JACOBY, Vice President, Youth Education, American Institute of Cooperation, Washington, D. C.

T. LAWRENCE JONES, President, American Insurance Association, New York, N. Y.

JAMES L. KARNs, Administrator, Division of Motor Vehicles, Wisconsin Motor Vehicle Department, Madison, Wis.

JAMES E. KENNEY, Vice President and General Manager, Pacific Telephone & Telegraph Company, Los Angeles, Calif.

NORVIN C. KIEFER, M.D., Bronx, N. Y.

ALAN L. KLING, Loss Prevention Consultant, Baldwin, N. Y.

L. W. KNAPP, JR., Chief, Accident Prevention Section, Institute of Agricultural Medicine, The University of Iowa, Oakdale Iowa

National Safety Council

(Board of Directors, continued)

WERNER C. KNOPP, President, The Baldwin Company, Little Rock, Ark.

MRS. HIDEO KODANI, Pacific Palisades, Calif.

DR. DALIBOR W. KRALOVEC, Director, Division of Safety Education, The School District of Philadelphia, Philadelphia, Pa.

MRS. JOHN E. KRUEGER, Milwaukee, Wis.

FRANK E. LADERER, Director of Policyholder and Employee Safety, Nationwide Insurance Company, Columbus, Ohio

E. L. LANGLEY, Vice President-Operations, General Telephone Company of Florida, Tampa, Fla.

JOHN D. LAWLOR, Executive Vice President, National Safety Council, 425 North Michigan Avenue, Chicago, Ill. 60611

IVAN F. LEFORE, Safety Director, Portland Cement Association, Skokie, Ill.

C. B. LEMON, Director of School Transportation, New Mexico State Department of Education, Santa Fe, N. M.

EDWIN B. LOCKE, Vice President, Texas Employers Insurance Association, Dallas, Tex.

NILS A. LOFGREN, Vice President, Insurance Institute for Highway Safety, Washington, D. C.

DR. JAMES D. LOGSDON, Professor of Education, Florida Atlantic University, Boca Raton, Fla.

LOUIS F. LUCAS, Executive Director and Treasurer, National Rifle Association of America, Washington, D. C.

REV. M. P. LUTNESS, Assistant Executive Secretary, Division of Service to Military Personnel, Lutheran Council in the U.S.A., Washington, D. C.

RAYMOND M. LYONS, Vice President for Industrial Relations, Fruehauf Corporation, Detroit, Mich.

RUSSELL E. MACCLEERY, Administrative Vice President, Automobile Manufacturers Association, Detroit, Mich.

ALEX A. MALESKI, Director, National Special Services, Boys' Clubs of America, New York, N. Y.

VICTOR J. MARI, Executive Director, Safety Council of Western Massachusetts, Springfield, Mass.

RICHARD E. MARLAND, Ph.D., Assistant Commissioner, Office of Program Development, Environmental Control Administration, Rockville, Md.

National Safety Council

(Board of Directors, continued)

MISS MARION E. MARTIN, Commissioner of Labor and Industry, State of Maine, Augusta, Me.

STANLEY A. MATE, Director, Competitions, Training & Facilities Division, National Rifle Association of America, Washington, D. C.

J. H. TYLER MCCONNELL, President, Delaware Trust Company, Wilmington, Del.

HAROLD S. MCFARLAND, Director of Personnel Relations, General Motors Corporation, Detroit, Mich.

DR. ROSS A. MCFARLAND, Guggenheim Professor of Aerospace Health and Safety, Harvard School of Public Health, Boston, Mass.

JOHN J. MCKENNA, Manager, Security and Safety Department, Mobil Oil Corporation, New York, N. Y.

EUGENE W. MERRY, President, Mine Safety Appliances Company, Pittsburgh, Pa.

VIRGIL L. MEYERS, Company Safety Director, Western Electric Company, New York, N. Y.

MARVIN D. MILLS, Associate Professor, Safety Education, Physical Education Department-Men, Marshall University, Huntington, W. Va.

NORMAN C. MINDRUM, Director, National 4-H Service Committee, Inc., Chicago, Ill.

EDMOND J. MONGEON, National Director, Water Safety, The American National Red Cross, Washington, D. C.

MRS. CHARLOTTE MONTGOMERY, Contributing Editor, Good Housekeeping Magazine, Westfield, N. J.

JOHN MONTGOMERY, Second Vice President, Casualty-Property Department, The Travelers, Hartford, Conn.

JOSEPH E. MOODY, President, Bituminous Coal Operators' Association, Washington, D. C.

GEORGE A. MOORE, Geo. A. Moore & Associates, Inc., Portland, Ore.

R. L. MOORE, Manager, Safety Services Division, National Loss Control Service Corporation, Chicago, Ill.

MRS. BERL M. MORRILL, Vice President and Treasurer, A. D. Pease Grain Company, Inc., Burlington, Ver.

THOMAS C. MORRILL, Vice President, State Farm Mutual Automobile Insurance Company, Bloomington, Ill.

EDWARD C. MYERS, Vice President and Assistant to President, United States Steel Corporation, Pittsburgh, Pa.

National Safety Council

(Board of Directors, continued)

W. E. NAUMANN, Chairman of the Board, M. M. Sundt Construction Company, Tucson, Ariz.

LOGAN B. NEB, Manager, Louisville Enamel Plant, American Standard, Louisville, Ky.

AMOS E. NEYHART, Director Emeritus & Consultant, Institute of Public Safety, University Park, Pa.

ROBERT A. OLEN, Executive Vice President, Crane Carrier Canada, Ltd., Rexdale, Ontario, Can.

CAPTAIN DAVID OLIVER, USCG, General Manager, American Boat & Yacht Council, Inc., New York, N. Y.

STANLEY A. OSSMAN, Vice President-Safety, Greyhound Lines-West, San Francisco, Calif.

DAVID A. PADDEN, Industrial Hygienist, United Automobile Workers, Detroit, Mich.

J. U. PARKER, John U. Parker & Associates, Houston, Tex.

DR. ORVILLE G. PARRISH, Director of Pupil Transportation, New Jersey State Department of Education, Trenton, N. J.

R. G. PEARSON, Manager, Information & Media Department, Public Relations, Shell Oil Company, New York, N. Y.

ARTHUR G. PETRY, Administrator, Information and Development, The National Society for Crippled Children and Adults, Chicago, Ill.

JOHN L. PICKENS, Secretary, The Hartford Insurance Group, Hartford, Conn.

FLETCHER N. PLATT, Manager, Traffic Safety and Highway Improvement Department, Ford Motor Company, Dearborn, Mich.

GEORGE H. POPE, Managing Engineer, Casualty & Chemical Hazards Department, Underwriters' Laboratories, Inc., Northbrook, Ill.

LORNE F. PURVES Superintendent of Transportation and Safety, Toronto Star Limited, Toronto, Ontario, Can.

HOWARD PYLE, President, National Safety Council, 425 North Michigan Avenue, Chicago, Ill. 60611

J. S. QUEENER, Manager, Safety and Fire Protection Division, E. I. du Pont de Nemours & Company, Inc., Wilmington, Del.

J. C. RADCLIFFE Supervisor, Environmental Health, Ford Motor Company, Dearborn, Mich.

L. W. RANDT, Farm and Industrial Equipment Institute, Chicago, Ill.

HOWARD REBHOLZ, Safety Director, The Rath Packing Company, Waterloo, Iowa

National Safety Council

(Board of Directors, continued)

J. G. REDLINE President, Weirton Steel Division, National Steel Corporation, Weirton, W. Va.

JOHN S. REED, President, The Atchinson Topeka and Santa Fe Railway System, Chicago, Ill.

R. L. RICKENBAUGH, President, Rickenbaugh Cadillac Company, Denver, Colo.

MARK D. ROBESON, Executive Vice President, Yellow Freight System, Inc., Kansas City, Mo.

FRANK H. ROGERS Division Vice President, Central Telephone Company, Las Vegas, Nev.

MRS. RUTH C. ROOS, Corporate Secretary, Edw. H. Walters & Co., Inc., Chicago, Ill.

E. M. ROWLEY, President, Southern Specialty Sales Company, Inc., New Orleans, La.

ROBERT RUPP, Editor, The Farmer, St. Paul, Minn.

E. H. RYDHOLM, Vice President-Civic Affairs, Chrysler Corporation, Detroit, Mich.

RICHARD L. SANDERSON, Executive Director, Building Officials & Code Administrators International, Inc., Chicago, Ill.

C. F. SCHLUETER, President, Employers Insurance of Wausau, Wausau, Wis.

KARL SCHULZE, Chief, Vehicle Support Division, Federal Highway Administration, U. S. Department of Transportation, Washington, D. C.

JOHN H. SCHWARTEN, Schwarten Corporation, State National Bank Building, Suite 1375, Evanston, Ill.

W. T. SEWELL, Vice President, Manufacturing, Westminster Corporation, Westminster, Md.

O. D. SHACKELFORD, President, Binyon O'Keefe Storage Company, Fort Worth, Tex.

GORDON H. SHEEHE, Director, Traffic Highway Safety Center, Michigan State University, East Lansing, Mich.

DR. W. HENRY SHILLINGTON, Field Secretary, General Board of Pensions of the Methodist Church, Evanston, Ill.

I. W. SHUTT, Safety Director, Joseph E. Seagram & Sons, Inc., New York, N. Y.

MATTHEW C. SIELSKI, Vice President, Safety and Traffic Engineering, Chicago Motor Club, Chicago, Ill.

National Safety Council

(Board of Directors, continued)

P. L. SIEMILLER, Washington, D. C.

JAMES M. SLAVIN, Director, Traffic Institute, Northwestern University, Evanston, Ill.

LOUIS J. SLAVIN, President, Hawthorne Paper Company, Kalamazoo, Mich.

JUSTIN B. SNYDER, Manager, Activities Department, Lions International, Chicago, Ill.

S. F. SPENCE, Director, Safety and Loss-Prevention, American Cyanamid Company, Wayne, N. J.

LOUIS P. SPITZ, Executive Director, American Association of Motor Vehicle Administrators, Washington, D. C.

HERMAN J. SPOERER, Youngstown, Ohio

WINSLOW A. STAHL, Resident Manager, Liberty Mutual Insurance Company, Springfield, Mass.

STANFORD C. STODDARD, President, Michigan Bank, National Association, Detroit, Mich.

W. E. STUCKEY, Leader, Safety & Emergency Preparedness, Cooperative Extension Service, The Ohio State University, Columbus, Ohio

W. E. STUFFING, Director of Safety, Carrier Corporation, Syracuse, N. Y.

R. K. TIMOTHY, President, Mountain Bell, Denver, Colo.

VINCENT L. TOFANY, Commissioner, Department of Motor Vehicles, State of New York, Albany, N. Y.

C. A. TOLIN, St. Louis, Mo.

N. A. TROMBLEY, Manager, Industrial Health Services, Chrysler Corporation, Detroit, Mich.

QUINCY V. TUMA, Chief Safety Engineer, Texaco, Inc., Houston, Tex.

J. W. TYSSE, Manager of Safety, Republic Steel Corporation, Cleveland, Ohio

LLOYD D. UTTER, Safety Director, United Automobile Workers, Headquarters Office, Detroit, Mich.

JAMES F. VAN NAMEE, Administrator, Accident Prevention, Westinghouse Electric Corporation, Pittsburgh, Pa.

Mrs. J. S. VAN WERT, Hampton, Iowa

PRESTON A. WADE, M.D., The New York Hospital, New York, N. Y.

MRS. LAURA WATSON, Montgomery, Ala.

National Safety Council

(Board of Directors, continued)

T. K. WEBB, Regional Vice President, Union Carbide Corporation, Charleston, W. Va.

MISS MARY M. WEEKS, Program Specialist, Health and Safety Education, Girl Scouts of the United States of America, New York, N. Y.

WILLIAM C. WEEKS, Manager of Trade Relations, Willson Products Division, ESB Incorporated, Reading, Pa.

MISS JANICE R. WESTABY, M.P.H., Associate Professor, School of Public Health, The University of North Carolina, Chapel Hill, N. C.

HUNTER P. WHARTON, General President, International Union of Operating Engineers, Washington, D. C.

GEORGE M. WHEATLEY, M.D., Vice President and Chief Medical Director, Metropolitan Life Insurance Company, New York, N. Y.

WILLIAM V. WHITE, Executive Director, National Commission on Product Safety, Washington, D. C.

T. H. WILKINSON, Director of Safety, Department of the Army, Washington, D. C.

HOWARD L. WILLETT, Chairman, The Willett Company, Chicago, Ill.

S. L. WILLIAMS, Safety & Fire Protection Engineer, E. I. du Pont de Nemours & Company, Inc., Wilmington, Del.

DORWIN L. WILLIAMSON, Superintendent, Training and Safety, Cleveland Transit System, Cleveland, Ohio

PAUL S. WISE, President, American Mutual Insurance Alliance, Chicago, Ill.

MACK M. WORDEN, Vice President, General Motors Corporation, Detroit, Mich.

REV. DAVID A. WORKS, Executive Vice President, North Conway Institute, Boston, Mass.

JAMES F. YOUNG, Vice President-Engineering, General Electric Company, New York, N. Y.

JOHN ZICH, Manager, Technical Data & Standards Department, Ford Motor Company, Tractor & Implement Division, Bloomfield Hills, Mich.

1970

NA677

VOLUME 2

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**AEROSPACE and
AIR TRANSPORT
INDUSTRIES**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

... airline should be without it. . . . Even though we know our responsibility in leading others to the promised land, we don't know which road to follow." We think we are on the right road.

We dig a little deeper in our investigations.

We increase our values concerning people.

We recognize the importance of communication.

We increase the frequency of our monitoring.

We increase the administrative pressure on those who should be doing the job.

OFFICERS OF THE

AEROSPACE SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—W. C. APPLGATE, Corporate Director of Safety and Industrial Hygiene, The Boeing Co., Seattle, Wash.

Vice Chairman—E. G. TROUTMAN, Accident Prevention Administrator, Westinghouse Electric Corp., Astronuclear Laboratory, Pittsburgh, Pa.

Secretary—ROBERT S. RAINEY, Chief, Health and Safety, The Boeing Co., New Orleans, La.

Newsletter Co-Editors—R. W. KENNEY, Supervisor, Industrial Safety, Vought Aeronautics Co., LTV Aerospace Corp., Dallas, Tex.; J. W. RICHARDSON, Safety Supervisor, Missiles and Space Div., LTV Aerospace Corp., Dallas, Texas

Engineering Committee—J. J. MOLLOY (Chairman), Group Director, Industrial Hygiene and Safety, North American Rockwell Corp., Aerospace & Systems Group, El Segundo, Calif.; COLONEL WILLIAM CAMERON, III, Armed Services Explosives Safety Board, Department of Defense, Washington, D. C.; E. B. CASSLER, Mgr. of Safety, Hercules Incorporated, Bacchus Works, Magna, Utah; JOSEPH W. DEEVER, Safety Engineer, Trans World Airlines, Inc., KSC, Fla.; RICHARD W. GOTT, Division Manager of Safety, Hercules, Inc., Wilmington, Del.; RICHARD K. JOHNSON, Manager, Industrial Safety, North American Rockwell, Downey, Calif.; ERNEST LEVENS, Corporate Director of Safety, H464, McDonnell Douglas Corp., Santa Monica, Calif.; GEORGE E. SLIGHT, Safety Officer, U. S. Naval Ammunition Depot, Crane, Indiana

Membership Committee—JAMES D. PARMITER (Chairman), Manager, Safety and Industrial Hygiene, The Vertol Div., The Boeing Co., Philadelphia, Pa.

Education & Training Committee—C. W. BATES (Chairman), Administrator, Fire and Accident Prevention, Westinghouse Electric Corp., Cheswick, Pa.; W. J. REITTER, Director of Safety, Delco Electronics Div., General Motors Corp., Milwaukee, Wis.

Industrial Hygiene Committee—H. M. DONALDSON (Chairman), Director of Industrial Hygiene, The Brush Beryllium Co., Elmore, Ohio; J. M. RICHARDSON, Safety Director, Sperry Rand Corp., Shreveport, La.

Program Committee—DONALD C. ROBERTSON (Chairman), Manager, Industrial Safety, General Electric Co., Cincinnati, Ohio; E. M. SCAGGS, Safety Dir., Semiconductor Products Div., Motorola, Inc., Phoenix, Ariz; HOWARD GROSVENOR, Personnel Services Manager, Rohr Corp., Chula Vista, Calif.

Off-The-Job Safety Committee—AL HEESEMAN (Chairman), Manager of Safety, Wyle Laboratories, Norco, Calif.; PETE PENA, Chief Safety Engineer, Lockheed Missiles and Space Co., Vandenberg AFB, Calif.

Military and Government Agency Representatives—COLONEL WILLIAM CAMERON, III (Chairman), Armed Services Explosives Safety Board, Department of Defense, Washington,

D. C.; A. R. EVANS, JR., General Safety Officer, Naval Air Systems Command, Navy Department, Washington, D. C.; E. S. HOWARTH, Chief, Ground Safety Branch, Hq. AFSC, Andrews Air Force Base, Washington, D. C.; J. E. POWELL, NASA Safety Office, Manned Spacecraft Center, Houston, Texas; H. M. ROYLANCE, Division Director of Safety, Code ORD-048, Naval Ordnance Systems Command, Washington, D. C.; DONALD KEIGHER, Chief, Industrial Safety Branch, NASA Headquarters-Code DY, Washington, D. C.

Long Range Planning Committee—*J. M. DURHAM (Chairman), Safety Director, Martin Marietta Corp., New York, N. Y.; D. A. FRASIER, Supervisor, Accident Prevention, Westinghouse Electric Co., Marine Division, Sunnyvale, Calif.; ERNEST LEVENS, Corporate Dir. of Safety, H464, McDonnell Douglas Corp., Santa Monica, Calif.

Nominating Committee—*J. M. DURHAM (Chairman), Director of Safety, Martin Marietta Corp., New York, N. Y.; W. C. APPLGATE, Corporate Director of Safety and Industrial Hygiene, The Boeing Co., Seattle, Wash.; E. G. TROUTMAN, Administrator of Accident Prevention, Westinghouse Electric Corp., Astronuclear Laboratory, Pittsburgh, Pa.

Members At Large—W. W. ALLISON, Safety Consultant, Sandia Corp., Albuquerque, New Mexico; QUAY COX, Chief, Safety and Security, Gates Learjet Corp., Wichita, Kan.; *H. JACK STONE, Chief, Safety and Industrial Hygiene, Lockheed Missiles and Space Co., Sunnyvale, Calif.; E. V. SISUL, Supervisor, Safety & Medical Departments, McDonnell Douglas Corp., Lambert Field, St. Louis, Mo.

Staff Representative—THEODORE J. WORHOL, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

*Past General Chairman

OFFICERS OF THE

AIR TRANSPORT SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—WM. M. GERAGHTY, Staff Mgr., Base Safety, United Air Lines, Inc., Maintenance Base, San Francisco International Airport, Calif.

Vice Chairman—W. L. DALLEN, Supervisor, Prop. & Insurance, Air Canada, Montreal, Que., Can.

Secretary—B. M. KIPIKAS, Aviation Ground Safety Consultant, Hartford Accident & Indemnity Co., Chicago, Ill.

Newsletter Editor—R. B. MARSHALL, Aviation Supervisor, Insurance Co. of North America, Woodstock, Ill.

Research & Engineering Division—O. R. WILLINGHAM (Chairman), System Dir. of Industrial Safety, National Air Lines, Inc., Miami International Airport, Fla.; WILLIAM H. COOPER, Director of Safety, Marriott In-Flight Services, Washington, D. C.; ROBERT J. FERRIS, Mgr., Industrial Safety, Maint. & Eng. Dept., Eastern Airlines, Inc., Miami International Airport, Fla.; RICHARD E. GLAZE, Mgr., Ground Safety, United Air Lines, Inc., O'Hare International Airport, Chicago, Ill.; J. J. KOECHER, Casualty Loss Control Adm., Alexander & Alexander, Inc., New York, N. Y.; CHARLES S. MORRIS, Engr., Parker & Co. Int'l, Inc., New York, N. Y.; J. J. MULCAHY, Maintenance Support & Safety Engineer, Air Lingus, Dublin Airport, Ireland; JAMES H. SKITT, Mgr., Safety, Western Airlines, Inc., Los Angeles, Calif.

Industry Relations Division—*RALPH J. DEE, Ground Safety Engr., United Air Lines, Inc., Chicago, Ill.

Education & Training Division—STANLEY P. OCHMANSKI (Chairman), Customer Services, Safety Services-MIAPS, Eastern Airlines, Inc., Miami International Airport, Fla.; ROBERT BATE, Supvr. Ground Support, Air Canada, Montreal, Canada; R. E. BREILING, Mgr. Engineering Dept. & Chief Pilot, Associated Aviation Underwriters, New York, N. Y.; R. B. MARSHALL, Aviation Supervisor, Insurance Co. of North America, Woodstock, Ill.; DONALD A. WILSON, Vice-President, Rollins Burdick Hunter Co., Chicago, Ill.

Air Force Representative—LAMAR RENFRO, Chief, Ground & Explosive Safety Branch, Hq., MAC (MAIIGSC), Scott AFB, Illinois

Airline Pilots Association Representative—CAPT. DON HEINE, Airline Pilots Assn., Washington, D. C.

Navy Representative—Vacant

Membership Committee—PETER ANDERSON (Chairman), Ground Safety Officer, British Overseas Airways Corp., London Airport, Hounslow, England; ROBERT F. FARRELL, U. S. Aviation Underwriters, Inc., New York, N. Y.

Nominating Committee—*G. T. MURRAY (Chairman), Supervisor, Ground Safety Dept., American Airlines, Inc., LaGuardia Airport, Flushing, N. Y.; *RALPH J. DEE, Ground

Safety Engr., United Air Lines, Inc., Chicago, Ill.; *LEONARD J. KOWALSKI, Safety Engr., Trans World Airlines, Inc., J. F. K. International Airport, Jamaica, N. Y.

Program Committee—*G. T. MURRAY (Chairman), Supervisor, Ground Safety Dept., American Airlines, Inc., LaGuardia Airport, Flushing, N. Y.; WM. M. GERAGHTY, Staff Mgr., Base Safety, United Air Lines, Inc., Maintenance Base, San Francisco International Airport, Calif.; *LEONARD J. KOWALSKI, Safety Engr., Trans World Airlines, Inc., J. F. K. International Airport, Jamaica, N. Y.

Statistics Committee—*DALE ESTELL (Chairman), Safety Engr., Trans World Airlines, Inc., Los Angeles International Airport, Calif.; JACK MCCARTHY, Manager, Loss Control, Universal Airlines, Detroit-Willow Run Airport, Mich.; OTTO PAVELCIK, Mgr., Loss Prevention Dept., Liberty Mutual Insurance Co., Kansas City, Mo.

Maintenance & Servicing Committee—J. D. MILLER (Chairman), Gen. Foreman, Trans World Airlines, Inc., J. F. K. International Airport, Jamaica, N. Y.

Long Range Planning Committee—*HOWARD H. WARZYN (Chairman), Mgr., Safety Engineering, Trans World Airlines, Inc., Kansas City, Mo.; JOHN ANGELOCCI, Ground Safety Dir., Universal Airlines, Inc., Willow Run Airport, Ypsilanti, Mich.; *WM. A. BEIRNE, JR., Asst. Vice-President, Alexander & Alexander, Inc., New York, N. Y.; WILLIAM C. BOGANE, Director of Safety, Continental Airlines, International Airport, Los Angeles, Calif.; *LEONARD J. KOWALSKI, Safety Engr., Trans World Airlines, Inc., J. F. K. International Airport, Jamaica, N. Y. 11430

Overhaul Base Committee—*N. L. CHRISTOFFEL (Chairman), Safety Representative, United Air Lines, Inc., San Francisco International Airport, Calif.; *HUGH H. BUTLER, Safety Administrator, Eastern Air Lines, Inc., Miami International Airport, Fla.; WM. M. GERAGHTY, Staff Mgr., Base Safety, United Airlines, Inc., San Francisco International Airport, Calif.; MACK D. HAY, Specialist-Industrial Safety, American Airlines, Inc., Maintenance & Engineering Center, Tulsa, Okla.; *R. L. POTTER, Mgr., Ind. Safety Maintenance & Engineering Center, American Airlines, Tulsa International Airport, Tulsa, Okla.; M. CHAIN ROBBINS, Manager, Safety & Industrial Hygiene, The Boeing Co., Seattle, Wash.

Airport Operators Committee—J. P. DUNNE (Chairman), First Deputy Comm. of Aviation, Dept. of Aviation, O'Hare International Airport, Chicago, Ill.; LEO F. DUGGAN, Vice President, Technical Affairs, Airport Operators Council International, Inc., Washington, D. C.; HENRY L. MOELLER, Safety Supervisor-Aviation, The Port of New York Authority, New York, N. Y.

Members at Large—*H. A. KUSHMANN (Chairman), Staff Asst. Comp. & Claims, Base Safety, United Air Lines, Inc., Maintenance Base, San Francisco International Airport, Calif.; *DALE ESTELL, Safety Engr., Trans World Airlines, Inc., Los Angeles International Airport, Calif.; *R. L. POTTER, Mgr., Ind. Safety Maintenance & Engineering Center, American Airlines, Inc., Tulsa International Airport, Okla.

Staff Representative—JOSEPH H. VANSICKLE, Industrial Dept., National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

*Past General Chairmen

FB-3375-143-SB

75-691

C

B/P

PLAN NOW TO ATTEND THE

1971 NATIONAL SAFETY CONGRESS OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

The Congress is always a big week, a worthwhile week for the 13,000 safety people who attend.

At the '71 Congress you can meet other safety people, with the same problems and responsibilities as yourself. You can exchange views and ideas on accident prevention, health, hygiene, and fire prevention . . . on safety in industry, traffic, school, at home and on the farm.

You can see the largest of all safety equipment exhibits at the Congress . . . an opportunity for you to make well-informed buying decisions for your company.

This four-day educational program, planned and presented by the National Safety Council, can be your most thought-provoking, most worthwhile safety experience in 1971.

Make plans early to attend the 1971 Congress and bring the other people in your organization who have safety responsibilities.

FUTURE CONGRESS DATES

1971	October	25-28
1972	Oct. 30 - Nov. 2	
1973	Oct. 29 - Nov. 1	
1974	Sept. 30 - Oct. 3	

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

2

NA677

1970

VOLUME 5

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**CHEMICAL;
FERTILIZER
INDUSTRIES;
RESEARCH and
DEVELOPMENT**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

MEMBERS OF THE CHEMICAL SECTION NATIONAL SAFETY COUNCIL 1970-71

General Chairman—W. H. LAUDERBACK, Safety Director, Texas Eastman Co., Div. of Eastman Kodak Co., Longview, Tex.

Vice Chairman in Charge of Program—J. S. SNYDER, Rahway Safety Mgr., Merck & Company, Inc., Rahway, N. J.

Secretary—MIKE KRIKORIAN, Corporate Mgr. of Saf. & Medical, Brunswick Corp., Chicago, Ill.

Newsletter Committee—L. D. STROHL, Corporate Regional Safety Mgr., National Distillers and Chemical Corp., Cincinnati, Ohio; A. MIMS, Saf. Eng., Procter & Gamble Co., Ivorydale Plant, Cincinnati, Ohio

Engineering Committee—H. A. PARTLOW (Chairman), Principal Safety Specialist, Monsanto Co., St. Louis Mo.; J. O. HALLBERG (Vice-Chairman), Superintendent, Saf. Div., Plastics Dept., E. I. duPont de Nemours & Co., Inc., Sabine River Works, Orange, Tex.; F. LINDEMANN, Asst. Mgr., Safety & Loss Prevention, Allied Chemical Corp., Morristown, N. J.; E. JEFFERSON, Property Conservation Engineer, Uniroyal, Inc., Naugatuck, Conn.; W. P. PAULSEN, Mgr., Loss Prevention, Chemicals Group, Olin Corporation, Stamford, Conn.; D. G. WINDSOR, Mgr., Engineering Section, Safety & Fire Protection Div., E. I. duPont de Nemours & Co., Inc., Wilmington, Del.

Health Committee—E. L. ALPAUGH (Chairman), Supervisor, Industrial Hygiene Service, International Harvester Company, Chicago, Ill.; R. E. HAWKINSON, Mgr. Environmental Health Eng., Employers Insurance of Wausau, Wausau, Wis.; D. J. KILLIAN, M.D., Industrial Medicine & Toxicology, Texas Div., Dow Chemical Co., Freeport, Tex.; F. A. VAN ATTA, Supervising Industrial Hygienist, Bureau of Labor Standards, Workplace Standards Adm., U. S. Dept. of Labor, Washington, D. C.; MARY J. HAWKE, R.N., Amoco Chemicals Corp., New Castle, Del.; K. L. McQUILLEN, Employee Benefits, Plant Safety & Security Administrator, Eli Lilly & Co., Tippecanoe Laboratories, Lafayette, Ind.

Safety Awards & Contests Committee—J. E. MORRISON (Chairman), Safety Dir., Houston Chemical Company, Div. of PPG Industries, Inc., Beaumont, Tex.; F. E. MACAULAY (Vice Chairman), Safety Supervisor, Wyandotte Chemical Corp., Wyandotte, Mich.; R. M. NEARY, Senior Engineer, Union Carbide Corp., Tarrytown, N. Y.

Off-the-Job Committee—W. T. CROUSE (Chairman), Saf. Dir. Rohm & Haas Co., Deer Park, Tex.; C. W. COX (Vice Chairman), Saf. Supvr., Mobil Chemical Co., Petrochemicals Div., Beaumont, Tex.; F. S. HILL, Director of Safety, Petrolite Corp., St. Louis, Mo.

Technical Publication Committee—W. G. M5(45) (Chairman), Director, Environmental Sciences, Hartford Insurance Group, Hartford, Conn.; F. W. WISCHMEYER (Vice Chairman), Supv., Accident Prevention Section, Industrial Safety Dept., Eastman Kodak Co., Rochester, N. Y.; B. G. BONNER, Safety & Accident Prevention, Tenneco Chemicals, Inc., New York, N. Y.; D. L. DOWELL, Safety Supervisor, B. F. Goodrich Chemical

Co., Cleveland, Ohio; DR. C. J. GRELECKI, President & Chief Scientist, Hazards Research Corp., Denville, N. J.; M. J. PISTEK, Asst. Mgr., Corporate Safety & Loss Prevention, Atlas Chemical Industries, Inc., Wilmington, Del.

Training Committee—L. P. WILLIAMS (Chairman), Safety Dir., Jefferson Chemical Co., Inc., Port Neches, Tex.; GEORGE L. BAKER (Vice Chairman), Supervisor, Training and Public Relations, Hercules, Inc., Cumberland, Md.; R. T. BRADLEY, Saf. Dir., Employee Relations Dept., Union Carbide Corp., New York, N. Y.; D. H. GUILBAULT, Safety Adm., General Electric Co., Pittsfield, Mass.; L. A. BAKER, JR., Manager, Safety Services, Brookhaven National Lab'y, Associated Universities, Inc., Upton, L. I., N. Y.; E. T. DRILL, Corporate Mgr., Safety & Security, Hooker Chemical Corp., Stamford, Conn.; R. S. SECKINGER, Safety Supervisor, American Cyanamid Co., Pigments Div., Savannah, Ga.

Training Aids Committee—G. F. SCANNELL (Chairman), Safety Dir., Bristol Works, Rohm & Haas Co., Bristol, Pa.; *J. E. NICHOLS, Director of Safety, Reynolds Metals Co., Richmond, Va.; H. C. MCGINNIS, Safety Dir., Union Carbide Corp., Chemicals & Plastics, Institute Plant, Charleston, W. Va.; D. E. MILLER, Safety Programs Coordinator, Corporate Security & Safety Dept., Mobil Oil Corp., New York, N. Y.

Public Relations Committee—A. P. OSTI (Chairman), Corporate Safety Engineer, Chas. Pfizer & Co., Inc., New York, N. Y.; *J. R. BOLLMAN (Vice Chairman), Head of Saf., Procter & Gamble Co., Ivorydale Technical Center, Cincinnati, Ohio; H. J. KOLODNER, Dir., Corp. Safety Security & Plant Protection, Celanese Corp., Charlotte, N. C.

Associations Committee

American Chemical Society—*H. H. FAWCETT (Chairman), Technical Secretary, National Academy of Sciences, National Research Council, Washington, D. C.

American Association of Industrial Nurses—MRS. M. E. SEAVER, R.N., Charge Nurse, Mobile Oil Corporation, Trenton, Mich.

American Inst. of Chemical Engineers—S. S. GROSSEL, Senior Chemical Eng., Chem. Eng. Dept., Hoffman-La Roche, Inc., Nutley, N. J.

American Society of Safety Engineers—A. H. CHRISTIAN, Division Safety Engineer, American Viscose & Chemical Divisions, FMC Corporation, Philadelphia, Pa.

Manufacturing Chemists Assn—F. O. KUBIAS, Director, Health & Safety, Mallinckrodt Chemical Works, St. Louis, Mo.

National Fire Protection Assn.—C. I. BABCOCK, Staff Chemist, NFPA, Boston, Mass.

NSC Research Section—*JOHN N. ROMINE, Mgr. Safety and Security, R&D Dept., Phillips Petroleum Co., Bartlesville, Okla.

Federal Government Liaison—F. A. VAN ATTA, Supervising Industrial Hygienist, Bureau of Labor Standards, Workplace Standards Administration, U. S. Dept. of Labor, Washington, D. C.

Membership Committee—G. H. MENTER (Chairman), Safety Engineer, Bristol Laboratories, Division of Bristol-Myers Co., East Syracuse, N. Y.; J. M. ALLOVIO, President,

Allovio, Service Corp., Skokie, Ill.; *E. R. WALLACE, Senior Safety Engineer, Kodak Park Safety Section, Eastman-Kodak Co., Rochester, N. Y.; W. W. SEARS, Mgr., Safety Administration, Olin Corp., Stamford, Conn.

Research Committee—*H. W. RAPP, JR. (Chairman), Supt., Casualty-Property Dept. Commercial Lines Marketing Div., The Travelers Insurance Co., Hartford, Conn.; *S. F. SPENCE, Dir., Safety and Loss-Prevention, American Cyanamid Company, Wayne, N. J.; T. A. YODER, Asst. Mgr., Safety & Environmental Health, Eli Lilly & Co., Indianapolis, Ind.; F. O. KUBIAS, Dir., Health & Safety, Mallinckrodt Chemical Works, St. Louis, Mo.

Nominating Committee—*W. S. WOOD (Chairman), Safety Coordinator, Research and Development Division, Sun Oil Co., Marcus Hook, Pa.; *C. M. OLSON, Safety Consultant, Niagara Falls, N. Y.; *D. T. SMITH, Supt., Protection Div., Employee Relations Dept., E. I. duPont de Nemours & Co., Inc., Deepwater, N. J.

Advisory Committee—*G. L. GORBELL (Chairman), Mgr., Personnel Safety, Monsanto Co., St. Louis, Mo.; *S. M. MACCUTCHEON, Director, Corporate Safety and Loss Prevention, Dow Chemical Company, Midland, Mich.; *R. H. ALBISSER, Coordinator, Corporate Safety, Merck & Co., Inc., Rahway, N. J. *A. L. COBB, Corporate Safety Coordinator, Eastman Kodak Co., Rochester, N. Y.; *J. J. PRABULOS, Safety Dir., National Distillers & Chemical Corp., New York, N. Y.

Staff Representative—JOHN MARK, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

*Past General Chairman

MEMBERS OF THE FERTILIZER SECTION NATIONAL SAFETY COUNCIL 1970-71

General Chairman—GENE HARLAN, Mgr., Employee Services, Indiana Farm Bureau Cooperative Assn., Inc., Indianapolis, Ind.

First Vice-Chairman and Program Chairman—W. A. STONE, Gen. Supt., Prod. & Safety, Wilson & Toomer Fertilizer Co., Jacksonville, Fla.

Second Vice-Chairman and Membership Chairman—DAVID W. BIXBY, Dir. Fertilizer Tech. Research, The Sulphur Institute, Washington, D. C.

Secretary—W. A. WILSON, Saf. Dir., Minerals & Chemicals Div., J. R. Simplot Co., Pocatello, Idaho

Newsletter Committee—QUENTIN J. DAVIS, Editor, Mgr., Safety & Loss Control, Occidental Chemical Co., Houston, Tex.; HAROLD GREEN, Mgr., Plant Food Production, CPA, Goldkist, Atlanta, Ga.; MIKE C. ELLISON, Plant Protection & Safety Dir., Mississippi Chemical Corp., Yazoo City, Miss.; MAURICE L. GREINER, Safety/Security Coordinator Simplot Chemical Co., Ltd., Brandon, Manitoba, Canada

Goals Committee—*JERRY C. BROOKS (Chairman), Dir. of Safety and Security, CPA, Goldkist, Atlanta, Ga.; *J. A. WILLIS, Dir. of Safety, Coastal Chemical Corp., Pascagoula, Miss.; *GEORGE H. MUELLER, Safety Director, Agrico Chemical Co., Div. of Continental Oil Co., Memphis, Tenn.; *RAY ENGEL, Safety Director, Marketing, Arco Chemical Co., Fort Madison, Iowa; *W. C. CREEL, Safety Dir., North Carolina Dept. of Labor, Raleigh, N. C.

Technical Publications Committee—HAROLD GREEN (Chairman), Mgr., Plant Food Production, CPA-Goldkist, Atlanta, Ga.; CASMER SMITH, Dir., Industrial Relations & Safety, U.S.S. Agri-Chemicals Div., Atlanta, Ga.; DAVID W. BIXBY, Dir. Fertilizer Tech. Research, The Sulphur Institute, Washington, D. C.; BEN F. DAY, Mgr. Technical Services, The Fertilizer Institute, Washington, D. C.; GERALD W. WILSON, Safety Supvr., Farmland Industries, Inc., Dodge City, Kan.

Supervisory Training Committee—*W. C. CREEL (Chairman), Safety Dir., North Carolina Dept. of Labor, Raleigh, N. C.; D. W. BRUFFY, Mgr., Loss Prevention, Olin Corp., Ag. Div., Little Rock, Ark.; ROGER W. HOFFMANN, Mgr. Safety and Coordinator, Pollution Control, American Potash and Chemical Corp., Kerr-McGee Corp., Oklahoma City, Okla.; GENE HARLAN, Mgr., Employee Services, Indiana Farm Bureau Cooperative Assn., Inc., Indianapolis, Ind.; BEN F. DAY, Mgr., Technical Services, The Fertilizer Institute, Washington, D. C.; J. A. WILLIS, Dir. of Safety, Coastal Chemical Corp., Pasagoula, Miss.

Research Committee—L. E. GIFFORD (Chairman), Safety Supvr., Agway, Inc., Nitrogen Div., Olean, N. Y.; THOMAS P. CHRISTEN, Mgr. Retail Employee Relations and Training, Vistron Corp., Lima, Ohio; *GEORGE H. MUELLER, Saf. Dir., Agrico Chemical Co., Div. of Continental Oil Co., Memphis, Tenn.; P. C. EHRENFRIED, Allovio Service Corp., Skokie, Ill.; JOSEPH O. FISHER, Safety Supvr., Monsanto Co., Luling, La.; W. D. MITTERLEHNER, Safety Advisor, Nitrogen Plant, Mobil Chemical Co., Beaumont, Tex.

Visual Aids Committee—JOHN SILAZ (Chairman), Mgr., Safety and Compensation, U.S.S. Agri-Chemicals Div., Atlanta, Ga.; ROGER W. HOFFMANN, Mgr. Safety and Coordinator, Pollution Control, American Potash and Chemical Corp., Kerr-McGee Corp., Oklahoma City, Okla.; *RAY ENGEL, Safety Director, Marketing, Arco Chemical Co., Fort Madison, Iowa; RALPH D. CHAMBERLIN, Saf. Supv., Cooperative Farm Chemical Assn., Lawrence, Kan.; WENDELL R. RIDINGS, Safety Dir., ARCO Chemical Co., Ft. Madison, Iowa; GERALD W. WILSON, Safety Supvr., Farmland Industries, Inc., Dodge City, Kan.

Public Relations Committee—W. A. WILSON (Chairman) Safety Dir., Minerals & Chemicals Div., J. R. Simplot Co., Pocatello, Idaho; CHARLOTTE SINE, Managing Editor, Farm Chemicals, Meister Publishing Co., Willoughby, Ohio; HAROLD GREEN, Mgr., Plant Food Production, CPA, Goldkist, Atlanta, Ga.; QUINT DAVIS, Mgr. of Safety and Loss Prevention, Occidental Chemical Co., Houston, Tex.

Membership Committee—W. A. STONE (Chairman), Gen. Supt., Production & Safety, Wilson & Toomer Fertilizer Co., Jacksonville, Fla.; DAVID W. BIXBY, Dir. Fertilizer Tech. Research, The Sulphur Institute, Washington, D. C.; *GAITHER T. NEWMAN, Insurance & Loss Prevention Coordinator, The Borden Chemical Co., New York, N. Y.; RALPH D. CHAMBERLIN, Saf. Supv., Cooperative Farm Chemical Assn., Lawrence, Kan.; L. E. GIFFORD, Safety Supvr., Agway, Inc., Nitrogen Div., Olean, N. Y.; OTTO A. LOGUE, Operations Supt., Southwest Potash Corp., Vicksburg, Miss.

Congress Program—W. A. STONE (Chairman), Gen. Supt., Production and Safety, Wilson & Toomer Fertilizer Co., Jacksonville, Fla.; D. W. BRUFFY, Mgr., Loss Prevention, Olin Corp., Ag. Div., Little Rock, Ark.

Statistics & Contest Committee—D. W. BRUFFY (Chairman), Mgr., Loss Prevention, Olin Corp., Ag. Div., Little Rock, Ark.; P. C. EHRENFRIED, Allovio Service Corp., Skokie, Ill.; THOMAS P. CHRISTEN, Mgr., Retail Employee Relations and Training, Vistron Corp., Lima, Ohio; C. J. GRIGSBY, Asst. Mgr. Insurance Dept., Southern States Cooperative, Inc., Richmond, Va.

Insurance & Legislative Committee—*E. O. BURROUGHS, JR. (Chairman), Mgr., Insurance Dept., Royster Co., Norfolk, Va.; *GAITHER T. NEWMAN, Insurance & Loss Prevention Coordinator, The Borden Chemical Co., New York, N. Y.; P. C. EHRENFRIED, Allovio Service Corp., Skokie, Ill.; MARVIN O. SCHEUNEMANN, Division Safety & Protection Service Mgr., Kaiser Agricultural Chemicals, Savannah, Ga.; JOHN SILAZ, Mgr., Safety & Compensation, U.S.S. Agri-Chemicals Div., Atlanta, Ga.

Off-the-Job Safety Committee—OTTO A. LOGUE (Chairman), Operations Supt., Southwest Potash Corp., Vicksburg, Miss.; WENDELL R. RIDINGS, Safety Dir., ARCO Chemical Co., Ft. Madison, Iowa; MARVIN O. SCHEUNEMANN, Division Safety & Protection Service Mgr., Kaiser Agricultural Chemicals, Savannah, Ga.; JOHN H. LITZELMAN, Mgr. of Production, Fertilizer Div., Agway, Inc., Syracuse, N. Y.

Industrial Hygiene Committee—W. T. SHELTON (Chairman), Personnel Mgr., Farmers Chemical Assn., Inc., Harrison, Tenn.; JOHN H. LITZELMAN, Mgr. of Production, Fertilizer Div., Agway, Inc., Syracuse, N. Y.; JOSEPH O. FISHER, Safety Supvr., Monsanto Co., Luling, La.; W. D. MITTERLEHNER, Safety Advisor, Nitrogen Plant, Mobil Chemical Co., Beaumont, Tex.

House and Reception Committee—*J. A. WILLIS (Chairman), Dir. of Safety, Coastal Chemical Corp., Pascagoula, Miss.; W. T. SHELTON, Personnel Mgr., Farmers Chemical Assn., Inc., Harrison, Tenn.; C. J. GRIGSBY, Asst. Mgr. Insurance Dept., Southern States Cooperative, Inc., Richmond, Va.

Fire Protection Committee—MARSHALL E. PETERSEN (Chairman), Fire Protection Engineer, American Mutual Insurance Alliance, Chicago, Ill.; MIKE C. ELLISON, Plant Protection & Safety Dir., Mississippi Chemical Corp., Yazoo City, Miss.; MAURICE L. GREINER, Safety/Security Coordinator, Simplot Chemical Co., Ltd., Brandon, Manitoba, Canada; CASMER SMITH, Dir., Industrial Relations & Safety, U.S.S. Agri-Chemicals Div., Atlanta, Ga.

Trade Association Committee—BEN F. DAY (Chairman), Mgr. Technical Services, The Fertilizer Institute, Washington, D. C.; DAVID W. BIXBY, Dir. Fertilizer Tech. Research, The Sulphur Institute, Washington, D. C.; CHARLOTTE SINE, Managing Editor, Farm Chemicals, Meister Publishing Co., Willoughby, Ohio

Coordinating Committee—*JERRY C. BROOKS (Chairman), Dir. of Safety and Security, CPA, Goldkist, Atlanta, Ga.; *W. C. CREEL, Safety Dir., North Carolina Dept. of Labor, Raleigh, N. C.; DAVID W. BIXBY, Dir. Fertilizer Tech. Research, The Sulphur Institute, Washington, D. C.; *GEORGE H. MUELLER, Saf. Dir., Agrico Chemical Co., Div. of Continental Oil Co., Memphis, Tenn.; *J. A. WILLIS, Dir. of Safety, Coastal Chemical Corp., Pascagoula, Miss.; W. A. STONE, Gen. Supt., Production & Safety, Wilson & Toomer Fertilizer Co., Jacksonville, Fla.

Historical Committee—*J. A. WILLIS (Chairman), Dir. of Safety, Coastal Chemical Corp., Pascagoula, Miss.; MIKE C. ELLISON, Plant Protection & Safety Dir., Mississippi Chemical Corp., Yazoo City, Miss.; *E. O. BURROUGHS, JR., Mgr., Insurance Dept., Royster Co., Norfolk, Va.

Chaplain—MINE C. ELLISON, Plant Protection & Safety Dir., Mississippi Chemical Corp., Yazoo City, Miss.

Staff Representative—*JOHN MARK, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

*Past General Chairman

MEMBERS OF THE

RESEARCH AND DEVELOPMENT SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—DONALD L. PETERSON, Supervisor, Honeywell, Inc., Corporate Research Center, Hopkins, Minn.

General Chairman-Elect—D. A. PINYAN, Chief of Safety Engineering, Lawrence Radiation Laboratory, Hazards Control Department, Livermore, Calif.

Newsletter—MAURICE GOLDEN, Safety Consultant, Kodak Research Laboratories, Rochester, N. Y.; PAUL E. VAN DE MARK, Safety Specialist, U. C. Lawrence Radiation Laboratories, Berkeley, Calif.

Secretary—ARTHUR E. EDWARDS, Supervisor, Exp. Services, Deere & Co., Technical Center, Moline, Ill.

Membership—J. W. POLLIO (Chairman), Supervisor, Safety Administration, Bell Telephone Laboratories, Murray Hill, N. J.; H. S. BRASTED, Safety & Security Coordinator, Merck, Sharp & Dohme, Research Laboratories Div., Merck & Co., Inc., Rahway, N. J.; GILBERT RHODES & ASSOCIATES, Safety Consultants, Oakland, Calif.

Vice-Chairman—Standing Committees—WM. O. BORDEN, Health and Safety Director, Stanford Research Institute, Menlo Park, Calif.

Standing Committees

Audio Visual Aids—ROBERT L. RICHARDSON (Chairman), Saf. Specialist, Xerox Corp., Webster, N. Y.; HERBERT M. NOLEN, Jefferson Chemical Co., Inc., Austin, Tex.

Training—JACK D. YOUNG (Chairman), Saf. & Loss Prevention Specialist, Dow Chemical Co., Midland, Mich.; C. H. MOLINE, Public Health Advisor, Training Proc., E.C.A., USPHS, Cincinnati, Ohio; J. E. GOLD, Safety Engineer, Bethlehem Steel Corp., Research Laboratories, Bethlehem, Penn.; PETER A. BREYSSE, Res. Asst. Prof., Dept. of Prev. Med., University of Washington, Seattle, Wash.

Technical Publications—JAMES A. PHOENIX (Chairman), Environmental Health & Safety, University of Minnesota, Student Health Service, Minneapolis, Minn.; G. I. ABBOTT, Dir., Safety Services, Pennwalt Corp., King of Prussia, Penn.; R. D. POIRIER, Phoenix, Ariz.; DOUGLAS M. PROVOW, Safety Associate & Safety Chairman, Ames Laboratory, USAEC, ISU, Ames, Iowa; H. E. WEBB, JR., Safety Manager, Central Research Department, Monsanto Co., St. Louis, Missouri

Public Relations—WARREN S. FARRALL (Chairman), Safety Engineer, Smith, Kline & French Laboratories, Philadelphia, Pa.; WM. J. LARSON, Safety Engineering Coordinator, Argonne National Laboratory, Argonne, Ill.

3375-143-SB

Standards & Special Projects—JOHN N. ROMINE (Chairman), Manager, Safety & Security, Phillips Petroleum Co., Phillips Research Center, Bartlesville, Okla.; JOHN

C
B/I

M. FRESINA, Assistant Safety Engineer, Massachusetts Institute of Technology, Cambridge, Mass.; H. S. MAHLEY, Supervisor, Safety & Security, Mobil Research & Dev. Corp., Research Department, Paulsboro, N. J.; SIDNEY LEVIN, Chief, Industrial Health & Safety Branch, Army Materials and Mechanics Research Center, Watertown, Mass.; S. W. ROWLAND, JR., Manager, Safety & Accident Prevention, Gulf General Atomic, Inc., San Diego, Calif.; N. R. CRAIG, JR., FDA Safety Officer, Food & Drug Administration, Rockville, Md.

Associations & Special Representatives

Manufacturing Chemists' Association—W. S. WOOD (Chairman), Safety Coordinator, Res. & Dev. Div., Sun Oil Company, Marcus Hook, Pa.

American Chemical Society—H. H. FAWCETT, Technical Society, National Academy of Sciences, National Research Council, Washington, D. C.

A. I. Ch. E.—R. W. PRUGH, Safety & Fire Protection Division, Employee Relations Department, E. I. duPont de Nemours & Company, Wilmington, Del.

National Fire Protection Association—R. H. SCOTT, Manager, Industrial Safety, Battelle-Northwest, Richland, Wash.

Academy of Pharmaceutical Sciences—WILLIAM SCHMITT, Alberto-Culver Company, Melrose Park, Ill.

Contests and Awards—JOHN R. LEACH (Chairman), Chief, Safety & Fire Protection Section, Protection and Safety Management Branch, National Institutes of Health, Bethesda, Md.

Off-the-Job—GEORGE W. MONCRIEF (Chairman), Safety Engineer, E. I. duPont de Nemours & Company, Jackson Laboratory, Wilmington, Del.

Vice-Chairman—Divisions—GARI T. GATWOOD, Manager, Safety, Cambridge Electron Accelerator, Harvard University (Safety Engineer), Cambridge, Mass.

Engineering Sciences—M. (JOE) SHERKAT (Chairman), Project Engineer, Materials Engineering Branch, American Airlines, Inc., Maintenance & Engineering Center, Tulsa, Okla.; F. L. MANGANARO, Mgr., Environmental Control, Penn Central Transportation Company, New York, N. Y.; L. E. PEVEY, JR., Chief, Safety & Fire Protection, National Bureau of Standards, Washington, D. C.; CARL WEBER, Safety Engineer, Hydrocarbon Research, Inc., Trenton, N. J.

Physical Sciences—C. L. SELANDER (Chairman), Safety Supervisor, Battelle Columbus Laboratories, Columbus, Ohio; DR. ERNEST BINDSCHADLER, Safety Administrator, Westinghouse Electric Corp., Research and Development Center, Pittsburgh, Pa.; ROY REIDER, Safety Director, University of California, Los Alamos Scientific Lab., Los Alamos, N. Mex.; JOSEPH M. DALTON, JR., Health & Safety Engr., Health and Safety Eng. Office, Greenbelt, Md.; JOHN F. EGE, Director, Industrial Hygiene & Safety, Argonne National Laboratory, Argonne, Ill.; DR. M. M. CHAMBERLAIN, President, Glassboro State Coll., Glassboro, N. J.; DR. W. ROBERT LOWSTUTER, Assistant Head of Chemistry Department, University of Illinois, Champaign, Ill.

Life Sciences—ANDRIS ZERVINS (Chairman), Westinghouse Electric Corp., Research Laboratories, Pittsburgh, Pa.; WM. W. JOY, Director, Environmental Health Dept., Uni-

versity of Michigan, University Health Service, Ann Arbor, Mich.; DR. ROBERT D. GAFFORD, Corporate Staff Scientist, Beckman Instruments, Inc., Fullerton, Calif.; GEORGE A. BODMER, Environmental Control Administration, Cincinnati, Ohio; CHARLES EASLEY, Safety Engineer, TRW Systems Group, Redondo Beach, Calif.; F. W. McCLELLAND, Head, Research Services, Lilly Research Laboratories, Eli-Lilly & Co., Indianapolis, Ind.

Applied Sciences—H. C. HOY (Chairman), Head, Facilities Engineering Section, Union Carbide Corp., Oak Ridge, Tenn.; R. H. KINSLOW, Texas Instruments, Inc., Dallas, Texas; FRANK W. WENTINK, Safety Engineer, Watervliet Arsenal, Watervliet, N. Y.; E. J. GRATZ, Safety Engineer, Chevron Research Company, Richmond, Calif.; DR. LEON HIBBS, President, Southeastern State College, Durant, Okla.; J. W. HILL, Insurance & Safety Director, Texas A & M University System, College Station, Tex.; ROBERT M. RYAN, Health Physicist, Rennsylear Poly Institute, Director of Nuclear Science Engrg., Troy, N. Y.; RICHARD F. ANDREE, SR., Safety Engineers, U.S. Atomic Energy Comm., New York, N. Y.; MELVIN L. WILLIAMS, Manager, Safety & Industrial Hygiene, The Boeing Company, Seattle, Wash.

Advisory and Nominating—JOHN R. LEACH (Chairman), Chief, Safety & Fire Protection Section, Protection & Safety Management Branch, National Institutes of Health, Bethesda, Md.; JOHN N. ROMINE, Manager, Safety & Security, Phillips Petroleum Co., Bartlesville, Okla.; D. A. PINYAN, Chief of Safety Engineering, Lawrence Radiation Laboratory, Hazards Control Department, Livermore, Calif.; DONALD L. PETERSON, Supervisor, Honeywell, Inc., Corporate Research Center, Hopkins, Minn.

Staff Representative—JOHN MARK, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

PLAN NOW TO ATTEND THE

1971 NATIONAL SAFETY CONGRESS OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

1972 The Congress is always a big week, a worthwhile week for the 13,000 safety people who attend.

1973 At the '71 Congress you can meet other safety people, with the same problems and responsibilities as yourself. You can exchange views and ideas on accident prevention, health, hygiene, and fire prevention . . . on safety in industry, traffic, school, at home and on the farm.

1974 You can see the largest of all safety equipment exhibits at the Congress . . . an opportunity for you to make well-informed buying decisions for your company.

This four-day educational program, planned and presented by the National Safety Council, can be your most thought-provoking, most worthwhile safety experience in 1971.

Make plans early to attend the 1971 Congress and bring the other people in your organization who have safety responsibilities.

FUTURE CONGRESS DATES

1971	October	25-28
1972	Oct. 30 - Nov. 2	
1973	Oct. 29 - Nov. 1	
1974	Sept. 30 - Oct. 3	

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

NA677

1970

VOLUME 3

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**AUTOMOTIVE and
MACHINE SHOP;
POWER PRESS and
FORGING**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

Back injuries can occur when the set-up man tries to get the tooling into or out of the poorly designed storage racks.

Adequate and safe parts, material, or tooling storage room is vital to operator safety.

Operator training. Without question, it is the responsibility of the press brake owner or user to properly and completely train his operating personnel. To prevent accidents on press brake machines we should:

1. Select physically and mentally qualified people. Some people are afraid to run press brakes or punch presses. If they are, we should not put them on the machine. If we do, we set up a very highly probable situation where an accident is likely to happen. A nervous or emotionally upset person is a top candidate for an accident.

2. Orient the person to the plant people around him and then his job. By orienting the person to the plant and people around him, you are more assured of his attention when you explain his job and the machine to him. Make sure he understands what you are communicating to him.

3. Impress upon him that you are interested and concerned about his safety. Explain that you will be insisting that he perform his work in a safe manner. These first-day discussions are important ones.

4. On every new job you assign to your press brake operator, be sure to point out the safety points that you expect him to follow. This will reinforce in his mind your concern for his safety. He will soon get the message that you want to run a safe operation.

5. Follow up from time to time to be sure the operator is following your instruction. Discipline if you have to, but be sure to compliment good safe practices when and where you see them.

Maintenance. Regular maintenance is good practice both from the standpoint of protecting your investment and in your accident prevention efforts. Without good regular maintenance, parts vital to the safe operation of your machine will be allowed to deteriorate to the failure point. When they fail, accidents can and will happen. Some points to check are: clutch and brake lining; air lines and pressure gages; electrical wiring and hook up; hand or foot control switches; loading and unloading devices and tooling. Make sure they are in place. Make sure the manuals and safety instructions are available to the press brake operator.

At times, warning signs become oil covered, scratched, and unreadable. This creates the impression in the operator's mind that safety is not really very important. When you see poorly maintained safety signs, have them cleaned or replaced, but make sure they are readable.

The safe use of press brake machinery requires more than an operator and common sense. It requires that you plan, design, build, and install safe tooling, and it requires that you establish safe operating objectives and exercise your management control to see that safe methods are followed. When you do these things you will be performing true management leadership. Management is a people problem but accidents can and must be prevented.

OFFICERS OF THE

AUTOMOTIVE and MACHINE SHOP SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—RALPH E. HUSTON, P-2, Safety & Plant Protection Engr., The Maytag Company, Newton, Iowa

Vice Chairman—THOMAS L. KOPKE, Div. Safety Engineer, General Parts Div., Ford Motor Co., Ypsilanti, Mich.

Secretary—DONALD WELTER, Safety Director, Guide Lamp Div., General Motors Corp., Anderson, Ind.

Program Committee—R. E. HALSTEAD, Safety Director, Allison Div., General Motors Corp., Indianapolis, Ind.

Newsletter Committee—JOHN E. HYER, Safety Engineer, Cummins Engine Co., Inc., Columbus, Ind.

Engineering Methods and Procedures Committee—CLIFTON E. BLANKENSHIP (Chairman), Safety & Training Supervisor, A. O. Smith, Granite City, Ill.; RALPH BATTEN, Safety Administrator, Trenton Division, Chrysler Corporation, Trenton, Mich.; J. S. SCRUTO, Dir. Safety, Missouri Boiler & Tank Co., St. Louis, Mo.; B. J. CIESLIK, Safety Dir., General Motors Corp., Detroit, Mich.; F. J. "BUD" DERY, Safety Director, Industrial Safety Section, Ford Motor Co., Dearborn, Mich.; F. WILLIAM FELDEN, JR., Mgr., Safety & Security, Clark Equip. Co., Buchanan, Mich.; GUY HOPPE, Superintendent, Employment & Safety, Chrysler Outboard Corp., Hartford, Wis.; GEORGE MUELLER, Safety Director, Cincinnati Milling Machine Co., Cincinnati, Ohio; D. L. SMITH, Safety Supervisor, International Harvester Company, Memphis Works, Memphis, Tenn.; EDWARD A. SMITH, Safety Supervisor, J. I. Case Company, Racine, Wis.; WILLIAM NEVINS, Safety Supervisor, Bendix Corp., South Bend Div., South Bend, Ind.

Education and Training Committee—A. S. THANNUM (Chairman), Mfg. Accident Prevention & Plant Protection Services, Westinghouse Air Brake Co., Construction Equipment Div., Peoria, Ill.; HOWARD A. FROST, Safety Administrator, Kokomo Casting Plant, Chrysler Corp., Kokomo, Ind.; *HOWARD HUNTINGTON, General Supt. of Safety, International Harvester Co., Manufacturing Service, Hinsdale, Ill.; R. A. JONES, Safety Supervisor, International Harvester Co., Farm Equipment Div., East Moline, Ill.; R. W. LEMKE, Safety Supervisor, International Harvester Co., Construction Equipment Div., Melrose Park, Ill.; MILTON A. RATHERT, Personnel & Safety Director, C. Hager and Sons Hinge Manufacturing Co., St. Louis, Mo.; JOSEPH E. BURNS, Safety Supervisor, Aluminum Co. of America, Newburgh, Ind.; MURRAY G. MCCLUSKY, Supv. of Safety & Security, Babcock & Wilcox Co., Mt. Vernon, Ind.

Fire Prevention Committee—JAMES S. DOYLE (Chairman), Director Plant Protection and Security Officer, Delco-Remy Division, General Motors Corporation, Anderson, Ind.; V. J. HASSELL (Vice Chairman), Technical Advisor, Alexander & Co., Chicago, Ill.; R. A. HEASTON, Dir., Safety & Security, Superior Coach Corp., Lima, Ohio; *LEO A. JOHNSON, Safety Director, John Deere Harvester Works of Deere & Co., East Moline, Ill.; IRA C.

ODLE, President, The Safety Corporation, Indianapolis, Ind.; *LOWELL C. HILDEBRAND*, Safety Supv., Bryant Air Conditioning Co., Div. of Carrier Corp., Indianapolis, Ind.; *FRED J. SCHROETER*, Safety Engr., Ethyl Corp., Ferndale, Mich.

Membership Committee—*EUGENE C. PUGH*, Manager, Underwriting Field Service Dept., Iowa National Mutual Insurance Co., Cedar Rapids, Iowa

Associations Committee—*CLAUDE A. LOESCH*, Adm. V. P., Employee Benefits, Indiana Mfgs. Assn., Indianapolis, Ind.

Product Safety Committee—*PAUL KRAMOS* (Chairman), Manager, Safety Services, Allis-Chalmers Manufacturing Company, Independence, Mo.; *A. E. FRAZHO* (Vice Chairman), Industrial Safety Unit Mgr., Safety Dept., Michigan Mutual Liability Ins. Co., Detroit, Mich.; *CONRAD C. CONTI*, Manager, Casualty Engineering Dept., Detroit Insurance Agency, Detroit, Mich.; *FRED COOK*, Chief Engineer, Bituminous Casualty Corp., Rock Island, Ill.; *M. J. GALLAGHER*, Superintendent, The Continental Insurance Cos., San Francisco, Calif.; *LEWIS R. MORRISON*, Corporation Manager-Safety, ACF Industries, Inc., New York, N. Y.; *WILLIAM R. RETZER*, Industrial Hygienist, Medical Division, Caterpillar Tractor Company, Peoria, Ill.

Long Range Planning Committee—**KENNETH L. LEWIS* (Chairman), Dir. of Safety, Delco-Remy Div., General Motors Corp., Anderson, Ind.; **LEO A. JOHNSON* (Vice Chairman), Safety Dir., John Deere Harvester Works of Deere & Co., East Moline, Ill.; **ROBERT H. CROSS*, Supervisor of Safety, Fisher Div., General Motors Corp., Flint, Mich.; **HOWARD HUNTINGTON*, General Supt. of Safety, International Harvester Co., Manufacturing Service, Hinsdale, Ill.; **OLLIE J. PICKEL*, Safety Director, Olin Mathieson, Chemical Corp., East Alton, Ill.

Staff Representative—*THEODORE J. WORHOL*, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

Past General Chairman

OFFICERS OF THE POWER PRESS AND FORGING SECTION NATIONAL SAFETY COUNCIL 1970-71

General Chairman—*HAROLD D. DAVEY*, Safety Supvr., Fisher Body Div., GMC, Grand Rapids, Mich.

Engineering and Technical Publications Committee Chairmen

Metal Stamping—Chairman—*ROBERT D. JORDAN*, Chief Electrical Engr., The Minster Machine Co., Minster, Ohio

Metal Stamping—Vice Chairman—*CHRISTOPHER ZEILENGA*, Mgr., Prod. Reliability, Verson Allsteel Press Co., Chicago, Ill.

Forging—Chairman—*GIDEON I. MEACHAM*, Corp. Safety Dir., Brewer-Titchener Corp., Cortland, N. Y.

Forging—Vice Chairman—*FRED J. SALMON*, Dir. of Safety, Cameron Iron Works, Inc., Houston, Texas

Education and Training Committee Chairman—*ALFRED B. AUERHAAN*, Corp. Safety Dir., The Stanley Works, New Britain, Conn.

Vice Chairman—*P. D. ALLING*, Supvr. of Safety, Mfg. Development, GMC, G. M. Technical Center, Warren, Mich.

Secretary—*JAY E. MCKINLEY*, Safety Dir., Tappan Co., Mansfield, Ohio

Membership Committee Chairman—*ORD L. CAMPBELL*, Mgr. of Training & Safety, Continental Can Co., Chicago, Ill.

Associations Committee Chairman—*WILLIAM ATKINSON, JR.*, Safety Dir., National Machine Tool Builders Assoc., Washington, D. C.

Newsletter-Editor—*TED KUMLER*, Mgr., Safety Health & Workmen's Compensation, TRW Inc., Cleveland, Ohio

Newsletter—Assoc. Editor—*CARL N. CHAPMAN*, Safety Supv., Chevrolet Metal Fabricating, Flint, Mich.

Program Chairmen

Forging—Chairman—*GIDEON I. MEACHAM*, Safety Dir., Brewer-Titchener Corp., Cortland, N. Y.

Forging—Vice Chairman—*DALE R. BOS*, Safety Supvr., Chevrolet-Detroit Forge, Detroit, Mich.

Metal Stamping—Chairman—ALFRED B. AUERHAAN, Corp. Safety Dir., The Stanley Works,
New Britain, Conn.

Metal Stamping—Vice Chairman—CARL N. CHAPMAN, Safety Supvr., Chevrolet Metal Fab-
ricating, Flint, Mich.

Off-The-Job and Public Relations Chairman—*THOMAS H. BULLARD, Senior Safety Engr.,
U. S. Dept. of Labor, Bureau of Labor Standards, Philadelphia, Pa.

Staff Representative—CHARLES H. PRICE, National Safety Council, 425 N. Michigan Ave.,
Chicago, Ill. 60611

Members—ROBERT M. ALLEN, Safety Admin., A. O. Smith Corp., Milwaukee, Wis.; E. A.
BELL, Electrical Engr., Niagara Machine & Tool Works, Buffalo, N. Y.; CHARLES D.
BRAINERD, Dir. of Safety, Oldsmobile Div., General Motors Corp., Lansing, Mich.; H. T.
BURKE, Mgr., Product Eng., E. W. Bliss Co., Hastings, Mich.; HUGH N. CAMPBELL,
Safety Supv., New Departure Hyatt Div., General Motors Corp., Bristol, Conn.; CHARLES
A. CARLSSON, Mgr., Safety & Health, Barber-Colman, Co., Rockford, Ill.; *J. A. CHURCHILL,
Supvr. of Employee Rels., Allis Chalmers, Milwaukee, Wis.; CLYDE W. CURRY, Admin.,
Safety & Industrial Hygiene, American Can Co., Greenwich, Conn.; *WILLARD A. DUDLEY,
Senior Safety Engr., Eastman Kodak Co., Kodak Park Div., Rochester, N. Y.; THOMAS
J. FOLEY, Supvr. of Forgings, International Harvester Co., Melrose Park, Ill.; JOSEPH
W. HART, Technical Consultant, Liberty Mutual Insurance Co., Boston, Mass.; L. F.
HNYDA, Safety Engr., Eastman Kodak Co., Kodak Park, Rochester, N. Y.; *FRANK H.
HOLLAND, Marketing Mgr., Press Control Products, A. O. Smith Corp., Clak Control
Div., Cleveland, Ohio; DON JAHNKE, Mgr., Safety and Security, Carter Carburetor Div.,
A. C. F. Industries, Inc., St. Louis, Mo.; WILLIAM J. KIRSCH, Supvr. of Safety &
Training, Westinghouse Electric Corp., Tuscarawas Rd., Beaver, Pa.; ROBERT D. MAHON,
Asst. Regional Safety Engr., Chicago Region, U. S. Postal Service, Chicago, Ill.; EM-
METT W. MCCARTHY, V. P. of Mfg., Dreis & Krump Mfg. Co., Chicago, Ill.; B. G.
MOXLEY, Safety Specialist, Chrysler Corp., Detroit, Mich.; NED B. PLEKAS, Mgr. Engrg.,
Erie Foundry Co., Erie, Pa.; VINCENT POLLINA, Corporate Dir. of Safety, A. O. Smith
Corp., Milwaukee, Wis.; GERARD A. RITTLING, Senior Safety Engr., Ford Motor Co.,
Buffalo, N. Y.; NICK M. ROSS, Safety Supvr., Fisher Body Div., General Motors Corp.,
Hamilton, Ohio; *ELGIN D. SALLEE, Dir., Corp. Environmental Control, American Can
Co., Greenwich, Conn.; L. J. SCHIMECK, Safety Engr., The Budd Co., Detroit, Mich.; *DALE
E. WINGER, Supt. Production, Chevrolet Motor Div., GMC, Brookpark & Stumpf Rds.,
Cleveland, Ohio; T. M. WIRE, Mgr., Occupational Safety, Deere Co., Moline, Ill.; WIL-
LIAM H. ZIEFEL, Mgr., Accident Prev., E. Pittsburgh Divs., Westinghouse Electric Corp.,
E. Pittsburgh, Pa.

Advisory Committee—C. O. ENOCHS, Safety Consultant, Flint Mich.; FRANK HAUSMAN,
Jr., Punch Press Specialist, Employers Insurance of Wausau, Hot Springs, Ark.; *T. A.
KRAKLOW, Safety Consultant, Moline, Ill.; WILLIAM SLAGER, Safety Consultant, Honey-
vine Park, Largo, Fla.; *DON STITT, Safety Consultant, Belmont, Calif.

Former General Chairmen

PB-3375-143-SB

75-697

C

B/T

PLAN NOW TO ATTEND THE

1971 NATIONAL SAFETY CONGRESS OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

1972 The Congress is always a big week, a worthwhile week
for the 13,000 safety people who attend.

1973 At the '71 Congress you can meet other safety people,
with the same problems and responsibilities as yourself.
You can exchange views and ideas on accident preven-
tion, health, hygiene, and fire prevention . . . on safety
in industry, traffic, school, at home and on the farm.

1974 You can see the largest of all safety equipment exhibits
at the Congress . . . an opportunity for you to make well-
informed buying decisions for your company.

This four-day educational program, planned and pre-
sented by the National Safety Council, can be your
most thought-provoking, most worthwhile safety expe-
rience in 1971.

Make plans early to attend the 1971 Congress and bring
the other people in your organization who have safety
responsibilities.

FUTURE CONGRESS DATES

1971	October	25-28
1972	Oct. 30 - Nov. 2	
1973	Oct. 29 - Nov. 1	
1974	Sept. 30 - Oct. 3	

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

1970

VOLUME 4

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**CEMENT, QUARRY
and
MINERAL
AGGREGATES**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

OFFICERS OF THE

CEMENT, QUARRY AND MINERAL AGGREGATES SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—P. J. JUDGE, Vice President, Mgr. of Operational Serv., Houdaille Construction Materials, Inc., Morristown, N. J.

First Vice-Chairman—ROBERT M. HOLDERIED, Assoc. Dir. of Safety, Martin-Marietta Corp., New York, N. Y.

Second Vice-Chairman—FRED J. ROGERS, Manager, Administrative Services, Gypsum Association, Chicago, Ill.

Secretary—GUY MOULDS, Safety Director, Huron Cement Div., National Gypsum Co., Alpena, Mich.

Newsletter Editor—CARL R. METZGAR, Reg. Safety Mgr., Lone Star Cement Corp., Richmond, Va.

Associate Newsletter Editor—LYMAN CUNNINGHAM, Safety Director, The Georgia Marble Co., Tate, Ga.

Program Committee—R. M. HOLDERIED (Chairman), Assoc. Director of Safety, Martin-Marietta Corp., New York, N. Y.; *HOWARD F. JOHNSTON, Personnel Mgr., Mineral Products Plants, GAF Corp., Ind. Products Div., Bound Brook, N. J.; F. J. ROGERS, Manager, Administrative Services, Gypsum Association, Chicago, Ill.; CHARLES G. SHELTON, Safety Engineer, Vulcan Materials Co., Mid-East Div., Winston-Salem, N. C.

Membership Committee—*DORSE O. SEIPLE (Chairman), Mgr. Safety and Personnel, The Standard Slag Co., Youngstown, Ohio; D. W. WARD, Mgr. Engr. & Loss Control, Harris-Moore & Assoc. Inc., Dallas, Tex.; SIDNEY A. QUIN, Regional Mgr., Loss Prevention & Engineering Dept., Royal Globe Insurance Co., Dallas, Tex.; FLOYD M. PATTERSON, Mgr., Safety & Claims, Vulcan Materials Co., S. E. Div., Birmingham, Ala.; JOSEPH H. WALTON, Director of Safety, Kaiser Cement & Gypsum Corp., Permanente, Calif.; G. E. WILLIAMS, Saf. Dir., American Aggregates Corp., Greenville, Ohio; BOBBY M. WILLIAMS, Corp. Safety Administrator, Texas Industries, Arlington, Tex.

Statistics and Contests Committee—FORREST MOYER (Chairman), Chief, Office of Accident Analysis, U. S. Bureau of Mines, Washington, D. C.; E. W. BAUMAN, Consulting Director, Silver Spring, Md.; STEPHEN C. ROYER, Director of Govt. Relations, National Sand & Gravel Assn., National Ready Mix Concrete Assn., Silver Spring, Md.

Engineering Committee—DAVID E. VISNAW (Chairman), Loss Control Consultant, Loss Control Systems Inc., Madison, Wis.; LYMAN CUNNINGHAM, Safety Director, The Georgia Marble Co., Tate, Ga.; RALPH B. WRAY, Dist. Engineering Mgr., American Mutual Liability Ins. Co., Baltimore, Md.; J. MILTON DURHAM, Corp. Director of Safety & Industrial Hygiene, Martin-Marietta Corp., New York, N. Y.; W. M. HOXIE, Safety Director, U. S. Army Corps of Engineers, New England Div., Waltham, Mass.; GERHARDT R. KRUG, Safety Director, United States Gypsum Co., Chicago, Ill.; KENNETH A. GUTSCHICK, Mgr., Technical Service, National Lime Association, Washington, D. C.; HOWARD RIEFENSTAHL, Manager of Training and Safety, Alpha Portland Cement Co., Easton, Pa.; ROY G. STOTT, Chief, Safety Div. Metal & Non-Metal Mine Health & Safety, U. S. Bureau of Mines, Washington, D. C.; JOHN J. SWEENEY, Safety Engineer, Bethlehem Mines Corp., McCoy Quarry, King of Prussia, Pa.; *ARVID TIENSON, Director of Insurance and Safety, Material Service Sub. of General Dynamics Corp., Chicago, Ill.

Visual Aids Committee—CHARLES G. SHELTON (Chairman), Safety Engineer, Vulcan Materials Co., Mid-East Div., Winston-Salem, N. C.; *HOWARD F. JOHNSTON, Personnel Mgr., Mineral Products Plants, GAF Corp., Ind. Products Div., Bound Brook, N. J.; *LESLIE S. VOLTZ, Safety Consultant, The Voltz Enterprises, Logansport, Ind.; JAMES

W. WOODLEY, Mgr., Safety & Industrial Hygiene, Dresser Industries, Inc., Petroleum & Minerals Group, Houston, Tex.; LEA P. WARNER, Jr., Dir. Risk Management Service, Fred S. James Co., Philadelphia, Pa.

Off-the-Job Safety Committee—*FRANCIS W. BUSH (Chairman), Director of Safety, M. J. Grove Lime Div., The Flintkote Co., Lime Kiln, Md.; C. RUSSELL MATTSON, Manager of Accident Prevention, Dravo Corp., Pittsburgh, Pa.; J. MILTON DURHAM, Corp. Director of Safety & Industrial Hygiene, Martin-Marietta Corp., New York, N. Y.; WALTER N. KNORR, Asst. Ins. Mgr. & Safety Mgr., The Flintkote Co., White Plains, N. Y.

Publicity Committee—E. W. BAUMAN (Chairman), Consulting Dir., Silver Spring, Md.; J. W. CHESHIRE, Jr., Safety Engineer, Superior Stone Co., Div. Martin-Marietta Corp., Greensboro, N. C.; CHARLES E. HAWKINS, III, Dir. of Membership Services, National Crushed Stone Assn., Washington, D. C.; H. BRADLEY JOHNSON, Dir. of Safety & Health, American Mining Congress, Washington, D. C.; ROBERT M. KOCH, President, National Lime Stone Institute Inc., Washington, D. C.

Legislative Committee—CHARLES E. HAWKINS, III (Chairman), Dir. of Membership Services, National Crushed Stone Assn., Washington, D. C.; E. W. BAUMAN, Consulting Dir., Silver Spring, Md.; *FRANCIS W. BUSH, Sr., Mgr., Industrial Relations, M. J. Grove Lime Div., The Flintkote Co., Lime Kiln, Md.; WM. E. GARLITZ, Jr., Industrial Relations Mgr., Dravo Corp., Ohio Gravel Div., Cincinnati, Ohio; H. BRADLEY JOHNSON, Dir. of Safety & Health, American Mining Congress, Washington, D. C.; E. J. WARING, Jr., Asst. Vice President, Laverack and Haines, Inc., Buffalo, N. Y.

Training Committee—*HOWARD RIEFENSTAHL (Chairman), Mgr., of Training and Saf., Alpha Portland Cement Co., Easton, Pa.; EDWARD P. BLAZEWICZ, Mgr., Industrial Relations, Houdaille Construction Materials, Inc., Morristown, N. J.; J. MILTON DURHAM, Corp. Dir. of Safety & Industrial Hygiene, Martin-Marietta Corp., New York, N. Y.; JAMES A. HICKEY, Asst. Safety Dir., Portland Cement Assn., Skokie, Ill.; EDWARD H. BULL, Supervisor of Mine Safety, Dept. of Industry, Labor & Human Relations, State of Wisconsin, Madison, Wis.; IVAH F. LEGORE, Safety Dir., Portland Cement Assn., Skokie, Ill.

Cameron Award Committee—FRED J. ROGERS (Chairman), Mgr. Administrative Services, Gypsum Association, Chicago, Ill.; EDWIN P. BLAZEWICZ, Mgr., Industrial Relations, Houdaille Construction Materials, Morristown, N. J.; GUY MOULDS, Safety Dir., National Gypsum Co., Huron Cement Div., Alpena, Mich.

Long Range Planning Committee—*P. C. HATLER, Asst. Labor Relations Mgr., Ideal Cement Co., Denver, Colo.; *FRANCIS W. BUSH, Sr., Mgr., Industrial Relations, M. J. Grove Lime Div., The Flintkote Co., Lime Kiln, Md.; *HOWARD J. JOHNSTON, Personnel Mgr., Mineral Products Plants, GAF Corp., Ind. Products Div., Bound Brook, N. J.; *GARLAND MIDYETTE, Safety Dir., Martin-Marietta Corp., Superior Stone Co. Div., Raleigh, N. C.; *HOWARD RIEFENSTAHL, Manager of Training and Safety, Alpha Portland Cement Company, Easton, Pa.; *ARVID TIENSON, Director of Insurance & Safety, Material Service Sub. of General Dynamics Corp., Chicago, Ill.; *DORSE O. SEIPLE, Mgr., Safety & Personnel, The Standard Slag Co., Youngstown, Ohio; *J. R. TREADAWAY, Mgr., Corp. Safety Administration, Vulcan Materials Co., Birmingham, Ala.; *LESLIE S. VOLTZ, Safety Consultant, The Voltz Enterprises, Logansport, Ind.

Hospitality Committee—EDWIN P. BLAZEWICZ (Chairman), Mgr., Industrial Relations, Houdaille Construction Materials, Inc., Morristown, N. J.; CHARLES E. HAWKINS, III, Dir. of Membership Services, National Crushed Stone Assn., Washington, D. C.; GUY MOULDS, Safety Dir., Huron Cement Div., National Gypsum Co., Alpena, Mich.; CARL R. METZGAR, Regional Safety Mgr., Lone Star Cement Corp., Richmond, Va.

Nominating Committee—*P. C. HATLER (Chairman), Asst. Labor Relations Mgr., Ideal Cement Co., Denver, Colo.; *J. R. TREADAWAY, Mgr., Corp. Safety Administration, Vulcan Materials Co., Birmingham, Ala.

Staff Representative—EDWARD J. SEDLACEK, National Safety Council, 425 N. Michigan Ave., Chicago, Illinois 60611

*Past General Chairman

1970

VOLUME 6

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**CIVIC
LEADERSHIP**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

aves, microwaves, infra-red heat, and visible light. This type of radiation does not damage cells under normal conditions of exposure and it does not accumulate.

Microwave ovens do not emit ionizing radiation. Dr. James A. Van Allen, the discoverer of the Van Allen belt which surrounds the earth, once said your chance of getting injured by a microwave oven is as likely as getting a tan from moonlight.

Microwave ovens, like all appliances, contain numerous safety controls. Therefore, the amount of leakage from a microwave oven is small, if it is present at all. Like the heat from the sun, the heat produced by microwaves can usually be felt long before harm can occur.

You can be safely exposed to intense heat for a brief period of time. You can also be exposed to heat for a longer period if you remain far enough away from it so most of its harmful energy is dissipated or cooled.

Exposure to microwave leakage is also brief in normal use. And, because of the extreme shortness of the rays, microwave heat decreases in a space of only a few inches.

Tomorrow's home—the home in which you will live—probably will contain a microwave oven. It will make today's methods of cooking as old-fashioned and funny as the coal and wood stoves appear to us today. It's important for you to know about new

developments like these in the appliances you will use tomorrow. Be respectful of their potential dangers, of course; but be assured that they represent important steps being taken by the innovative, energetic, yet intensely safety-minded home appliance manufacturing industry to provide exciting new uses of power to you.

Today's and tomorrow's products for the home represent new developments in the use of power. As the father of three sons I am keenly aware, also, of the importance of another kind of power—youth power.

It is the power you have for leadership in safety and, what is perhaps even more important, for leadership in many other fields of activity that are worthwhile in your homes, your schools, your churches, your communities, and in the nation.

The amazing machines we have been talking about have been developed under a political, economic, and industrial system that is the greatest ever developed in the history of mankind.

Don't let anyone tell you otherwise. There are those—and many of them are youths—who would destroy this system and the things in it that we cherish. Your power as leaders for the good things in which you believe can protect, preserve, and improve this system which makes life happier, healthier, safer, and more productive for all of us here in America today and which will continue to do so under your leadership here in America tomorrow.

MEMBERS OF THE

FARM CONFERENCE

NATIONAL SAFETY COUNCIL 1970-71

Honorary Life Members chosen for their outstanding personal contribution to the Farm Conference program of the National Safety Council: MRS. VIOLA ARMSTRONG, Greenwood, Ind.; THEO BROWN, Rock Island, Ill.; HARRY L. BRYSON, Columbia, Mo.; E. W. LEHMANN, Urbana, Ill.; BRUCE LOURIE, Moline, Ill.; SAMUEL P. LYLE, Huntingdon, Tenn.; EARL D. MERRILL, DeBary, Fla.; HARRY M. PONTIUS, Columbus, Ohio; HARRY L. POWELL, Orange Park, Fla.; MARTIN RONNING, West Fork, Ark.; A. J. SCHWANTES, St. Paul, Minn.; ARTHUR F. STAPEL, Menasha, Wis.

The Liaison Vice President-elect for the Farm Conference made the following appointments to the Conference for the year 1970-71. They were approved by the Board of Directors at the Board Meeting October 27, 1970. EDWARD S. ADAMS, Director of Safety, Iowa Farm Bureau Federation, Des Moines, Iowa; MRS. DONNA AGNESS, Indiana Farm Safety Council, Bunker Hill, Ind.; CHARLES BAILEY, Associate Editor, The Farm Quarterly, Cincinnati, Ohio; PAGE L. BELLINGER, Product Safety Department, Deere & Company, Moline, Ill.; DR. BOND BIBLE, Council on Rural Health, American Medical Association, Chicago, Ill.; W. J. BRAKE, Lecturer, National Grange Lecturer's Office, Haslett, Mich.; DR. B. K. BRISTOL, Illinois State University, Department of Agriculture, Normal, Ill.; NORMAN CAVENDER, Managing Editor, TOP OPERATOR, Philadelphia, Pa.; DR. JOHN B. CLAAR, Director of State Extension Service, University of Illinois, Urbana, Ill.; MAYNARD COE, Agricultural Consultant, Des Plaines, Ill.; A. B. CORDES, State FFA Executive Secretary, State Dept. of Public Instruction, Madison, Wis.; WILLIAM COX, Extension Specialist, Extension Service, U. S. Dept. of Agriculture, Washington, D. C.; WARD CROSS, Texas Farm Bureau, Waco, Tex.; CLAUDE DE ST. PAER, Assistant Director, Program Development Division, American Farm Bureau Federation, Chicago, Ill.; HOMER E. EDWARDS, VTE Program Officer, Agricultural Education, Office of Education, DHEW, Chicago, Ill.; ROGER FLEMING, Public Relations Staff, General Motors Corporation, Detroit, Mich.; CHARLES FREDERICK, Executive Secretary, National Farm & Power Equipment Dealers Association, St. Louis, Mo.; DALTON E. GANDY, National Cottonseed Products Association, Inc., Memphis, Tenn.; HAROLD HALTER, Managing Director, Farm Equipment Manufacturers Assn., St. Louis, Mo.; MARION E. HART, Manager of Administration, Division Engineering, Farm Equipment Division, Allis-Chalmers, Milwaukee, Wis.; DENIS HAYLEY, Secretary-Treasurer, National Agricultural Chemicals Assn., Washington, D. C.; JOHN P. HEIN, Director of Engineering, Grinnell Mutual Reinsurance Co., Grinnell, Iowa; GERHARD HEUTZENROEDER, Production Manager, National Farmers Union, Jamestown, N. D.; DOUGLAS HEWITT, Executive Secretary, Farm & Industrial Equipment Institute, Chicago, Ill.; DR. R. J. HILDRETH, Managing Director, Farm Foundation, Chicago, Ill.; GREGORY HOLLAND, General Product Manager, Massey-Ferguson, Inc., Des Moines, Iowa; JOHN HOVE, Chief, Field Services & Field Operations, Injury Control Program, U. S. Public Health Service, Cincinnati, Ohio; DR. A. H. ISMAIL, Director of Research, Department of Physical Education for Men, Purdue University, Lafayette, Ind.; L. W. KNAPP, JR., Chief, Accident Prevention Laboratory, University of Iowa, Oakdale, Iowa; WILLIAM KUHFUSS, President, Illinois Agricultural Assn.; Bloomington, Ill.; FRANK LADERER, Director of Safety, Nationwide Insurance Company, Columbus, Ohio; DR. FRANK LANHAM, Head, Agricultural Engineering Dept., Agricultural Engineering Bldg., University of Illinois, Urbana, Ill.; FRED LARK, KVOW Radio, Riverton, Wyo.; T. DAVID MCFARLAND, Assistant Secretary for Membership Activities, American Society of Agricultural Engineers, St. Joseph, Mich.; C. W. McMILLAN,

Executive Secretary, American National Cattlemen's Assn., Denver, Colo.; NORMAN C. MINDRUM, Director, National 4-H Service Committee, Chicago, Ill.; E. D. PATRICK, Vice President, National Grange Mutual Ins. Co., Syracuse, N. Y.; MRS. ALTA PECK, Litchfield, Conn.; V. S. PETERSON, Atlanta, Ga.; DR. RICHARD PFISTER, Extension Safety Engineer, Agricultural Engineering Dept., Michigan State University, East Lansing, Mich.; RUSSELL POYNOR, General Supervisor, Product Planning Research, Farm Equipment Division, International Harvester Co., Chicago, Ill.; L. W. RANDT, Farm & Industrial Equipment Institute, Chicago, Ill.; D. E. ROSEN, Supervisor, Product Registration, I & B's Labels, Registration and Toxicity Section, E. I. du Pont de Nemours & Company, Wilmington, Del.; LOUISE ROSENFELD, Assistant Director-Home Economics, Cooperative Extension Service, Iowa State University, Ames, Iowa; ROBERT RUPP, Editor, The Farmer, 1999 Shepard Road, St. Paul, Minn.; ROLLIN SCHNIEDER, Extension Specialist, Safety, University of Nebraska, Lincoln, Neb.; JOHN SCOTT, Master, National Grange, Washington, D. C.; CHARLES B. SHUMAN, President, American Farm Bureau Federation, Chicago, Ill.; MRS. LLOYD SPENCER, South Haven, Mich.; W. E. STUCKEY, Leader, Safety & Emergency Preparedness, State Extension Service, The Ohio State University, Columbus, Ohio; BECKY SURFACE, The Hoosier Farmer, Indianapolis, Ind.; RANDALL C. SWANSON, Sunnyside Seed Farms, Inc., Middleton, Wis.; EDWIN W. TANQUARY, Elmhurst, Ill.; ROBERT E. TAYLOR, Director of Agricultural Relations, Market Development Division, Republic Steel, Cleveland, Ohio; JAMES C. THOMSON, Editor, Prairie Farmer, Chicago, Ill.; JAMES WALL, Executive Secretary, National Vocational Agricultural Teachers' Association, Inc., Lincoln, Neb.; DALE WATLEY, Ag-Tronic, Inc., Hastings, Neb.; MRS. LEOTA M. WESTFALL, Traffic Specialist, Highway Traffic Safety Center, Michigan State University, East Lansing, Mich.; DR. F. R. WILLSEY, Extension Safety Specialist, Purdue University, Lafayette, Ind.; CHARLES WILSON, Safety Officer, Bureau of Labor Standards, U. S. Department of Labor, Washington, D. C.; JOHN H. ZICH, Mgr., Tech. Data & Standards Dept., Ford Motor Co., Tractor and Implement Division, Bloomfield Hills, Mich.; CARLTON L. ZINK, Moline, Ill.

MEMBERS OF THE CONFERENCE FOR RELIGIOUS LEADERS NATIONAL SAFETY COUNCIL 1970-71

REV. EDGAR H. ALBERS, Emmanuel Lutheran Church, Mokena, Ill.; MR. GEORGE C. BUBOLZ, The Am. Lutheran Church, East Lansing, Mich.; BISHOP EDWARD L. CHOATE, The Presiding Bishopric, Re-Organized Church of Jesus Christ of Latter Day Saints, World Headquarters, Independence, Mo.; MR. ARTHUR DORE, Director, Office of Interchurch Relations and Communications, Greek Orthodox Archdiocese of N. & S. America, New York, N. Y.; MR. JAMES P. ECONOMOS, Director, Traffic Court Programs, American Bar Association, Chicago, Ill.; REV. PATRICK J. FARRELL, Assistant Superintendent of Schools of the Archdiocese of Chicago, Chicago, Ill.; REV. RAYFORD G. FEATHER, Executive Director, American Council on Alcohol Problems, Inc., Washington, D. C.; REV. ROBERT A. GRUNOW, Director of Seminary Relations, Concordia Seminary, St. Louis, Mo.; MR. SAMUEL HEPBURN, Commissioner, The Salvation Army, New York, N. Y.; RT. REV. MSGR. GEORGE HIGGINS, Director, Social Action Department, U. S. Catholic Conference, Washington, D. C.; DR. KENNETH HILDEBRAND, The Central Church of Chicago, Chicago, Ill.; REV. EVERETT J. JENSEN, General Secretary, Washington-Mo. Idaho Cnc. of Churches, Seattle, Wash.; MR. CHARLES H. KELLSTADT (Past Chairman of the Religious Leaders Conference), Chicago, Ill.; MRS. HIDEO KODAN, Pacific Palisades, Calif.; REV. MAGNUS P. LUTNESS, Director of Service to Military Personnel, Lutheran Council in the U.S.A., Washington, D. C. (Rep. The Am. Lutheran Church); MR. HOWARD C. MAXWELL, Office of Church and Society, Board of Christian Education, The United Presbyterian Church in the U.S.A., Philadelphia, Pa.; MAJOR ERNEST A. MILLER, Public Relations Secretary, The Salvation Army, Chicago, Ill.; MR. JOHN McDOWELL, Social Justice Department, National Council of Churches, New York, N. Y.; MISS MARGARET MEALEY, Executive Director, National Council of Catholic Women, Washington, D. C.; MR. A. H. MERKLE, Loveland, Ohio; ELDER W. A. NELSON, President, Illinois Conference of Seventh-Day Adventists, Brookfield, Ill.; THE HONORABLE THOMAS A. POWERS, Judge, Akron, Ohio; DR. THOMAS E. PRICE, Director, Department of Alcohol & Drug Abuse, Board of Christian Social Concern The United Methodist Church, Washington, D. C.; MR. EARL J. PRIGNITZ, Executive Secretary, Board of Christian Education, Friends United Meeting, Richmond, Ind.; DR. CARL F. REUSS, Director Research and Social Action, The American Lutheran Church, Minneapolis, Minn.; DR. LAWRENCE E. SCHWARZ, The Winnetka Congregational Church, Winnetka, Ill.; DR. W. HENRY SHILLINGTON, Field Secretary, General Board of Pensions of the Methodist Church, Evanston, Ill.; DR. ALBERT F. TUCKER, Executive Director, Texas Alcohol Narcotics Education, Inc., Dallas, Tex.; MR. ERNEST VILLAS, Director Department of Laity, Greek Orthodox Archdiocese of N. & S. America, New York, N. Y.; REV. CLYDE E. WEAVER, Parish Ministries Staff, General Brotherhood Board, Church of the Brethren, Elgin, Ill.; DR. LESLIE WEBER, Executive Secretary, Board for Social Welfare, Lutheran Church-Missouri Synod, St. Louis, Mo.; DR. CYNTHIA WEDEL, President, National Council of Churches, Washington, D. C.; REV. DAVID A. WORKS, Executive Vice President, The North Conway Institute, Boston, Mass.

MEMBERS OF THE WOMEN'S CONFERENCE NATIONAL SAFETY COUNCIL 1970-71

MRS. RICHARD AGNESS, Bunker Hill, Ind. (Member-at-large); MRS. LUCILE S. ALEXANDER, Jacksonville, Fla. (Member-at-large); MRS. LEONE G. ALLEN, Portland, Me. (Member-at-large); MRS. GEORGE BERENS, National President, Ladies Auxiliary to the National Rural Letter Carriers' Association, Bolivar, Ohio; *MISS JEANNETTE BARNETT, Chairman, Community Service Committee, Altrusa International, Amarillo, Tex.; MRS. WILLIAM H. BARTON, President, National Council of State Garden Clubs, East Lansing, Mich.; MRS. PHYLLIS BAUER, President, The National Secretaries Association, Davenport, Iowa; *MRS. MARTHA BAUMBERGER, Executive Director, Zonta International, Chicago, Ill.; MRS. AGNES D. BEATON, Director, Women's Division, Allstate Insurance Company, Washington, D. C. (Member-at-large); MRS. MARCELLA BEATTY, Executive Director, AFL-CIO National Auxiliaries, Washington, D. C.; MRS. MARGARET L. BELCHER, President, The National Association of Negro Business & Professional Women's Clubs, Inc., Columbus, Ga.; MRS. KEITH BLACKNER, President, National Extension Homemakers Council, Lyman, Wyo.; MRS. SUE BOE, Director, Consumer Services, Pharmaceutical Mfg. Assn., Washington, D. C. (Member-at-large); MRS. EARLE A. BROWN, President, General Federation of Women's Clubs, Washington, D. C.; *MRS. DORIS BURDINE, Jr. Vice President, Amvets Auxiliary, Decatur, Ga.; MRS. THOMAS J. BURKE, President, National Council of Catholic Women, Washington, D. C.; *MISS HELEN BURKIN, The National Secretaries Association, Chicago, Ill.; MRS. JOELLA T. BUTLER, President, Altrusa International, Wichita Falls, Tex.; MISS BARBARA CALHOUN, President, Pilot Club International, Macon, Ga.; MRS. ROBERT W. CLAYTOR, President, Young Women's Christian Association of the U.S.A., National Board YWCA, New York, N. Y.; MRS. NORMA H. COBURN, 3600 James Street, Apt. 9, Syracuse, N. Y. (Member-at-large); MRS. MARY COTONE, President, Ladies Auxiliary to the Veterans of Foreign Wars of the U.S. Kansas City, Mo.; MISS LORETTA COWDEN, Administrator, Division of Home Economics Programs, U.S.D.A. Extension Service, Washington, D. C.; MRS. WILLIAM DAMASKOS, Grand President, Daughters of Penelope, Gary, Ind.; *MRS. DOROTHY DARLING, M.D., American Medical Women's Association, Gary, Ind.; JUDGE MATTIE BELLE DAVIS, Metropolitan Court of Dade County, Miami, Fla. (Member-at-large); HONORABLE FRANCES L. DAWSON, Member, Illinois State Legislature, Evanston, Ill. (Member-at-large); MRS. RUTH MOSS EASTERLING, President, The National Federation of Business and Professional Women's Clubs, Inc., Washington, D. C.; MRS. LEWIS EDMUNDSON, P.O. Box 128, Walsenburg, Colo. (Member-at-large); MRS. MAHALA EVANS, Chicago, Ill. (Member-at-large); MRS. JACOB FESSLER, Sheboygan, Wis. (Member-at-large); *MRS. ELVERA FISCHER, Safety Chairman, American Association of Medical Assistants, Chicago, Ill.; MRS. JOHN G. FOWLER, National Vice Chairman of Volunteers, American National Red Cross, Washington, D. C.; MISS ELEANOR FREEMAN, Evanston, Ill. (Member-at-large); HONORABLE EDITH B. GARDNER, President, National Order of Women Legislators, Laconia, N. H.; MRS. F. G. GARRISON, President, Woman's National Farm and Garden Association, Detroit, Mich.; MRS. LIONEL C. GILMOUR, Bellevue, Wash. (Member-at-large); MISS MAMIE HARDY, Associate Editor, Education Services Division, Changing Times, Washington, D. C. (Member-at-large); MRS. HELEN HAWLEY, Vice President, Women's Conference, Toledo-Lucas County Safety Council, Toledo, Ohio; MRS. DORA LEE HAYNES, Executive Secretary, Quota International, Inc., Washington, D. C.; MRS. JEANNETTE B. HEALEY, President, Quota International, Inc., Waterbury, Conn.; *MRS. LUCILE HECHT, Director, Public Relations, Altrusa International, Chicago, Ill.; MISS DOROTHY HEIGHT, President, National Council of Negro Women, Washington, D. C.; MRS. IRVIN HENDRYSON, Albuquerque, N. M. (Member-at-large); *MRS. EDWIN

S. HEWITT, National Council of State Garden Clubs, Libertyville, Ill.; DR. IRMAGENE N. HOLLOWAY, Arlington, Va. (Member-at-large); *MRS. L. A. IDINGS, Woman's National Farm and Garden Association, Haslett, Mich.; MRS. BARBARA IRETTON, Falls Church, Va. (Member-at-large); *MRS. MARJORIE KAYES, The National Secretaries Association, Chicago, Ill.; MRS. WILLIAM R. KIDD, Chairman, National Association of Women Highway Safety Leaders, Inc., Ocala, Fla.; MRS. ELIZABETH D. KOONTZ, Director of Women's Bureau, U.S. Department of Labor, Washington, D. C.; MRS. CATHERINE KRIMM, President, National Association of Railway Business Women, Baltimore, Md.; MRS. JOHN E. KRUEGER, Milwaukee, Wis. (Member-at-large); MRS. HELEN K. LESLIE, St. Petersburg, Fla. (Member-at-large); MRS. GERTRUDE F. LOGAN, Sarasota, Fla. (Member-at-large); MRS. WARREN G. MAGNUSON, Washington, D. C. (Member-at-large); MISS MARY KAY MALES, President, National Association of Insurance Women, Indianapolis, Ind.; *MISS MARY MANNING, U.S. Department of Labor, Chicago, Ill.; MISS MARION E. MARTIN, Commissioner of Labor and Industry, Augusta, Me. (Member-at-large); MISS PATRICIA L. MCBREEN, New England Telephone Company, Boston, Mass. (Member-at-large); DR. GWENDOLINE McDONALD, President, National League for Nursing, Inc., New York, N. Y.; *MRS. CHARLES O. MIDDLEKAUF, Safety Chairman, General Federation of Women's Clubs, Hyattsville, Md.; Administrative Assistant, National Congress of Parents & Teachers, Chicago, Ill. (Observer); *MRS. MARIET M. MONROSE, National Public Safety Chairman, National Association of Insurance Women, St. Petersburg, Fla.; MRS. CHARLOTTE MONTGOMERY, Contributing Editor, Good Housekeeping Magazine, Westfield, N. J. (Member-at-large) Vice President for Women); *MRS. MARTIN MUCHOW, Vice President, National Extension Homemakers Council, Sioux Falls, S. D.; MRS. FREDERICK MURPHY, Vice President, Eastbay Chapter, National Safety Council, Oakland, Calif.; *MRS. DENE MURRAY, Executive Director, American Association of Medical Assistants, Chicago, Ill.; MRS. CLAYTON T. NOONAN, Chairman, Women's Division, Evergreen Safety Council, Seattle, Wash.; MRS. GORDON OATES, Little Rock, Ark. (Member-at-large); MRS. MYRTLE OLLISON, President, National Association of Colored Women's Clubs, Oklahoma City, Okla.; MRS. WILLIAM H. OSLER, President, Association of the Junior Leagues of America, Inc., New York, N. Y.; MISS VIRGINIA F. PATE, President, American Women in Radio and Television, Inc., Havre de Grace, Md.; MISS LEOTA F. PEKUL, President, Zonta International, University of Colorado, Denver, Colo.; *MRS. DARLA R. PHILLIPS, Safety Chairman, National Association of Legal Secretaries, Salt Lake City, Utah; MRS. JOHN D. PLEPEL, Cicero, Ill. (Member-at-large); MISS VERA POSTON, Safety Secretary, Western Region Office, National Parks Service, San Francisco, Calif. (Member-at-large); *MISS JEANNE PRIESTER, Program Leader, North Central States, Division of Home Economics Programs, U.S.D.A. Extension Service, Washington, D. C.; MRS. VICTOR E. REIMANN, President, Woman's Auxiliary to the United Federation of Postal Clerks, Evansville, Ind.; JOSEPHINE E. RENSHAW, M.D., President, American Medical Women's Association, Chevy Chase, Md.; *MISS WILDA RICHARDSON, Executive Director, Pilot Club International, Macon, Ga.; MRS. R. C. L. ROBERTSON, President, Woman's Auxiliary to the American Medical Association, Inc., Houston, Tex.; MRS. MARY ROBINSON, Beverly, Mass. (Member-at-large); MRS. RUTH C. ROOS, Chicago, Ill. (Member-at-large) (Conference Chairman); MRS. OLIVE SALEMBIER, President, Society of Women Engineers, Phoenix, Ariz.; MRS. MAX SCHENK, President, Hadassah, New York, N. Y.; MISS MARTY SCHIFF, President, National Association of Legal Secretaries, Webster Groves, Mo.; MRS. MICHAEL SHAPIRO, International President, B'nai B'rith Women, Washington, D. C.; MRS. CHARLES SHAW, President, The American Legion Auxiliary, Indianapolis, Ind.; DR. VILDA SHUMAN, Waycross, Ga. (Member-at-large); MRS. HAVEN SMITH, Chairman, American Farm Bureau Women's Committee, Chicago, Ill.; *MRS. HELEN SMITH, National Americanism Chairman, The American Legion Auxiliary, Albert Lea, Minn.; MRS. CARL STEVENSON, President, American National Cowbelles, Red Rock, Ariz.; *MRS. BARNETT STEIN, Safety Trustee, Auxiliary to the American Optometric Association, Baltimore, Md.; MISS KATHERINE STINSON, President, Soroptimist Federation of the Americas, Arlington, Va.; *MRS. FLORENCE THOMAS, Assistant Director, Program Development, American Farm Bureau Federation, Chi-

ago, Ill.; MRS. JEAN THUROW, Madison Safety Council, Madison, Wis. (Member-at-large); MRS. B. V. TODD, Coordinator, Women's Activities, Highway Users Federation for Safety & Mobility, Washington, D. C. (Member-at-large); MRS. FRED J. FOOZE, President, National Women's Christian Temperance Union, Evanston, Ill.; MRS. ALFRED TODT, Chairman, Women's Division, Eastbay Chapter, National Safety Council; Oakland, Calif.; MRS. BETTY TURNER, President, Amvets Auxiliary, Cedar Falls, Ia.; MRS. BERNICE T. VAN DER VRIES, Member, Chicago Transit Board, Chicago Transit Authority, Evanston, Ill. (Member-at-large); MISS CAROL VAN SICKLE, Editor, The Bulletin, Continental Insurance Companies, New York, N. Y. (Member-at-large); MRS. J. S. VAN WERT, Hampton, Iowa (Member-at-large); MISS JEAN VELDWEYK, Seattle, Wash. (Member-at-large); MRS. CATHERINE VOLLMER, Sacramento, Calif. (Member-at-large); *MRS. ROBERT WALLACE, National Council of Catholic Women, Chicago, Ill.; MISS PEGGY WALTON, Manager, Consumer Information, Manufacturing Chemists Association, Washington, D. C. (Member-at-large); MRS. JOANNE J. WARREN, Bangor, Me. (Member-at-large); MRS. LAURA WATTS, Montgomery, Ala. (Member-at-large); MRS. ADELE T. WEAVER, President, National Association of Women Lawyers, Miami, Fla.; MRS. SIDNEY L. WEINTRAUB, President, Dade County Citizens Safety Council, Miami, Fla.; MRS. BETTY ROSS WEST, Associate Manager of Public Affairs, WMAQ-TV, Chicago, Ill. (Member-at-large); MRS. LAUREL JO WETZEL, Madison Heights, Mich. (Member-at-large); *MRS. ERLE E. WILKINSON, Safety Chairman, Woman's Auxiliary to the American Medical Association, Nashville, Tenn.; MRS. HANEN H. WILLIAMS, President, Reserve Officers Association Ladies Clubs of America; Phoenix, Ariz.; DR. ELLEN WINSTON, President, National Council for Homemaker Services, Inc., Raleigh, N. C.; MRS. HOWARD WINTON, President, Auxiliary to the American Optometric Association, Melbourne, Fla.; *MISS MARGARET N. WOLFE, Executive Secretary, Woman's Auxiliary to the American Medical Association, Chicago, Ill.; MRS. HARRIET YOUNG, Chairman, Women's Division, Safety Council of Greater Lansing, Lansing, Mich.; MRS. MARIE YOUNG, President, American Association of Medical Assistants, Inc., Indianapolis, Ind.; MRS. CAROLYN F. YUKNUS, President, National Association of Extension Home Economists, Westfield, N. J.

Alternate delegates

MEMBERS OF THE

YOUTH ACTIVITIES CONFERENCE

NATIONAL SAFETY COUNCIL 1970-71

Vice President—MR. ALEX A. MALESKI

American Farm Bureau Federation, KEN CHEATHAM, Assistant Director, Program Development Division, American Farm Bureau Federation, Chicago, Ill.; American Institute of Cooperation, DR. WALTER JACOBY, Vice President, Youth Education, American Institute of Cooperation, Washington, D. C.; American National Red Cross, JOHN MANTHEI, National Director, Red Cross Youth, American National Red Cross, Washington, D. C.; Alternate, GEORGE W. GUYETTE, Assistant National Director, Safety Programs, Red Cross Youth, American National Red Cross, Washington, D. C.; B'Nai B'Rith Youth Organization, SEYMOUR S. COHEN, Director, Programs and Publications, B'Nai B'Rith Youth Organization, Washington, D. C.; Boy Scouts of America, E. E. HOISINGTON, Assistant Director, Health and Safety Service, National Council, Boy Scouts of America, North Brunswick, N. J.; Boys' Clubs of America, CARL R. ANDREWS, Assistant Director, National Program Service, Boys' Clubs of America, New York, N. Y.; CNA/Insurance, RICHARD P. SHEA, National Brochure Sales Manager, Commercial Special Risks Division, CNA/Insurance, Chicago, Ill.; Camp Fire Girls, Inc., GWEN HARPER, Director, Program Development Department, Camp Fire Girls, Inc., New York, N. Y.; Chrysler Corporation, ROY HAEUSLER, Chief Engineer, Chrysler Corporation, Detroit, Mich.; Distributive Education Clubs of America, HARRY APPLEGATE, Executive Secretary, DECA, Falls Church, Va.; Extension Service, USDA, DR. KEMP SWINEY, Program Leader, 4-H and Youth Development, Extension Service, U. S. Department of Agriculture, Washington, D. C.; Future Business Leaders of America-Phi Beta Lambda, Inc., EDWARD D. MILLER, National Director, Leadership Development, Future Business Leaders of America-Phi Beta Lambda, Inc., Washington, D. C.; Future Farmers of America, WM. PAUL GRAY, National Executive Secretary, Future Farmers of America, National FFA Center, Alexandria, Va.; Future Homemakers of America, LOUISA LIDDELL, Associate National Adviser, Future Homemakers of America, Washington, D. C.; General Motors Corporation, ROGER C. FLEMING, Public Relations Staff, General Motors Corporation, Detroit, Mich.; Girl Scouts of the USA; MARY WEEKS, Program Specialist, Health and Safety Education, Program Department, Girl Scouts of the USA, New York, N. Y.; Girls Clubs of America, Inc., MRS. ELINOR B. BUCHHOLZ, Administrative Assistant, Girls Clubs of America, Inc., New York, N. Y.; Highway Users Federation for Safety and Mobility, FRANK P. LOWREY, Assistant Director, Automotive Industries Division, Highway Users Federation for Safety and Mobility, Washington, D. C.; ARTHUR A. OFFER, Director, Highway Safety Division, Highway Users Federation for Safety and Mobility, Washington, D. C.; Junior Achievement, Inc., HUGH B. SWEENEY, JR., Program Director, Junior Achievement, Inc., New York, N. Y.; Kiwanis International, PERCY H. SHUE, Assistant Secretary, Program Development, Kiwanis International, Chicago, Ill.; Lions International, JUSTIN B. SNYDER, Supervisor, Activities Department, Lions International, Chicago, Ill.; National 4-H Service Committee, Inc., KENNETH H. ANDERSON, Associate Director, National 4-H Service Committee, Inc., Chicago, Ill.; National Grange, WILLIAM A. STEEL, Director of Youth Activities, National Grange, Washington, D. C.; National Jewish Welfare Board, MICHAEL RAND, National Consultant, Health and Physical Education, National Jewish Welfare Board, New York, N. Y.; National Rural Electric Cooperative Association, ARTHUR L. MITCHELL, Youth and Young Adult Activities, National Rural Electric Cooperative Association, Washington, D. C.; Nationwide Insurance Company, FRANK E. LADERER, Director of Safety, Nationwide Insurance Company, Columbus, Ohio; Optimist International, LOUIS C. JURINICH, Boys' Work Director, Optimist

International, St. Louis, Mo.; Pilot Club International, WILDA RICHARDSON, Executive Director, Pilot Club International, Macon, Ga.; Science Clubs of America, HOWARD WEISBROD, Executive Secretary, Science Clubs of America, Washington, D. C.; United Christian Youth Movement, JOHN S. WOOD, Associate Executive Secretary, United Christian Youth Movement, New York, N. Y.; United States Catholic Conference, PHILOMENA K. KERWIN, Executive Secretary, National CYO Federation, United States Catholic Conference, Washington, D. C.; U. S. Junior Chamber of Commerce, GARY R. McNAUGHT, Program Manager, U. S. Junior Chamber of Commerce, Tulsa, Okla.; Veterans of Foreign Wars of the United States, EDWARD L. BURNHAM, National Director, Youth Activities, V.F.W., Kansas City, Mo.; Vocational Industrial Clubs of America, LARRY W. JOHNSON, Executive Secretary, VICA, Falls Church, Va.; Young Men's Christian Association, JOHN P. FISHER, Director, Community Affairs, National Council, YMCA, New York, N. Y.; Zonta International, MRS. MARTHA BAUMBERGER, Executive Director, Zonta International, Chicago, Ill.; Vice President for Youth, ALEX A. MALESKI Director, National Special Services, Boys' Club of America, New York, N. Y.; Secretary, National Safety Council, HAROLD E. HELDRETH, Manager, Youth Activities Department, National Safety Council, 425 North Michigan Avenue, Chicago, Ill. 60611

PLAN NOW TO ATTEND THE

1971 NATIONAL SAFETY CONGRESS OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

1972 The Congress is always a big week, a worthwhile week for the 13,000 safety people who attend.

1973 At the '71 Congress you can meet other safety people, with the same problems and responsibilities as yourself. You can exchange views and ideas on accident prevention, health, hygiene, and fire prevention . . . on safety in industry, traffic, school, at home and on the farm.

1974 You can see the largest of all safety equipment exhibits at the Congress . . . an opportunity for you to make well-informed buying decisions for your company.

This four-day educational program, planned and presented by the National Safety Council, can be your most thought-provoking, most worthwhile safety experience in 1971.

Make plans early to attend the 1971 Congress and bring the other people in your organization who have safety responsibilities.

FUTURE CONGRESS DATES

1971	October	25-28
1972	Oct. 30 - Nov. 2	
1973	Oct. 29 - Nov. 1	
1974	Sept. 30 - Oct. 3	

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

PB-3375-143-SB

75-69T

C

B/P

2

3

1970

VOLUME 7

NATIONAL SAFETY CONGRESS TRANSACTIONS

COAL MINING



NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611

increases, respectively. The longwall was completed at the end of the midnight shift on the 14th day after instrumentation. At this time, the maximum pressures recorded at test sites 3 and 4 were 6,000 and 4,500 psig, respectively. Maximum pressures at test sites 3 and 4 after four months following completion of the longwall were 6,400 and 5,400 psig, respectively, and the pressures seemed stabilized. These two test sites are to remain in operation until after completion of the next inby panel, No. 3.

Conclusions

1. Adequate caving seemed to have occurred in favorable sequence with minimum overhang soon after the longwall advanced from the area affected by the bump, and fracturing of the immediate roof near the middle of the longwall stopped.

2. Adequate caving continued in the void, and apparently improved compaction minimized the length of the arch of the retreating longwall during the final stages of mining.

3. Data transmitted by the hydraulic-pressure cells indicated that the high-pressure point of the front abutment zone was contained relatively close to the advancing longwall face.

4. Pressures versus time-and-distance monitoring of the optimum load of the front abutment, as well as the load distribution (pressure waves) on the unmined portion of the panel, was important in the decision to continue the longwall to the projected "stop distance" line.

5. Pressure increases were recorded immediately following instrumentation, especially at test sites 1, 2, and 3, revealing that the coal panel was stressed in excess of static loads by the abutment from the goaf flanking the panel on left and possibly from mining stresses. Pressure increases accelerated as the longwall face approached the respective test sites.

6. Pressure increases were slight during weekend idle periods. During the process of completing the longwall, two coal disruptions, of more than ordinary consequence, occurred on the longwall; on each occasion, coal was expelled from the longwall face for a distance of about 15 feet inby the tail entry and from the tail-entry side of the coal panel, for a distance of 30 feet outby the longwall face. Intense discoloration of the coal was observed on numerous occasions near the roof line. This characteristic discoloration of the coal on the longwall face appeared usually 50 to 75 feet inby the tail-entry side of the wall.

It is believed that use of the hydraulic-pressure cells to monitor and transmit data relative to pressure changes and the pressure pattern (rate and direction) proved important from the bump aspect during the final stages in longwalling the most vulnerable portion of the coal panel. Results obtained indicate that the encapsulated hydraulic cell could be advantageous in the starting phases, first weight and caving, and in completing a longwall, or when the pressure wave pattern is abnormally intense and lingering.

OFFICERS OF THE

COAL MINING SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—ROBERT L. VINES, Bituminous Coal Operators Assn., Washington, D. C.

First Vice-Chairman—EDWARD ONUSCHECK, Rochester & Pittsburgh Coal Co., Indiana, Pa.

Second Vice-Chairman—ALEX KELEMAN, Armco Steel Corp., Coal Div., Montcoal, W. Va.

Secretary—HERSCHEL H. POTTER, U. S. Bureau of Mines, Washington, D. C.

Newsletter Editor—RAYBURN H. FRALEY, Consolidation Coal Co., Inc., Morgantown, W. Va.

Associate Newsletter Editor—RICHARD SNYDER, Staff Representative, Coal Mining and Mining Sections, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

Entertainment Committee—EVERETT M. WHITE (Chairman), Mine Safety Appliances Co., Pittsburgh, Pa.; PAUL C. LINCO, Monterey Coal Co., Carlinville, Ill.

U. S. Bureau of Mines Representatives—*JAMES WESTFIELD, U. S. Bureau of Mines, Washington, D. C.; HENRY P. WHEELER, JR., U. S. Bureau of Mines, Washington, D. C.

Labor Representatives—LEWIS E. EVANS, United Mine Workers of America, Washington, D. C.; REX LAUCK, United Mine Workers of America, Washington, D. C.

State Mine Inspectors' Representatives—ARNOLD SNOWDEN, Ohio Div. of Mines, Columbus, Ohio; JOHN ASHCRAFT, West Virginia Dept. of Mines, Charleston, W. Va.; LEON RUFF, Illinois Department of Mines and Minerals, Springfield, Ill.; DENNIS J. KEENAN, Pennsylvania Department of Mines and Mineral Industries, Ebensburg, Pa.; HARRELD KIRKPATRICK, Kentucky Department of Mines and Minerals, Lexington, Ky.; CHARLES PURCELL, Indiana Bureau of Mines, Terre Haute, Ind.; DON DAVIS, Division of Mine Inspection, Dept. of Labor & Industrial Relations, Jefferson City, Mo.; WARD PADGETT, Oklahoma Department of Mines and Mining, Oklahoma City, Okla.; H. T. WILLIAMS, Alabama Div. of Safety and Inspection, Birmingham, Ala.; W. DEAN AUBREY, Iowa Dept. of Mines & Minerals, Des Moines, Iowa; DONALD HASKE, Colorado Coal Mine Inspection Dept., Denver, Colo.; W. FOSTER MULLINS, Div. of Mines, State of Virginia, Big Stone Gap, Va.; CARLYSLE F. GRONNING, The Industrial Commission of Utah, Salt Lake City, Utah

Mine Inspectors' Institute of America Representatives—†W. FOSTER MULLINS; FARRELL WHITLOW, Illinois Dept. of Mines & Minerals, Springfield, Ill.; †W. DEAN AUBREY

Bituminous Coal Representatives—JOHN REEVES, Mid-Continent Coal & Coke Co., Carbon-dale, Colo.; COY SOUTH, Bell & Zoller Coal Co., Johnston City, Ill.; JAMES CLEM, Peabody Coal Co., St. Louis, Mo.; MAURICE E. FOWLER, Duquesne Light Co., Greensboro, Pa.

Coal Associations' Representatives—QUINN MORTON III, Southern Coal Producers Assn., Charleston, W. Va.; FORD SAMPSON, Ohio Coal Assn., St. Clairsville, Ohio; S. W.

ZANOLLI, Bituminous Coal Operators Assn., Washington, D. C.; CHESTER TRUAX, American Mining Congress, Washington, D. C.

Engineering Committee—DONALD MITCHELL (Chairman), U. S. Bureau of Mines, Pittsburgh, Pa.; JOE G. IVY, WABCO, Mining Equipment Div., Chicago, Ill.; RAYMOND H. MARLOW, Jeffrey Manufacturing Co., Columbus, Ohio; C. A. BAILEY, Applied Research Laboratory, U. S. Steel Corp., Monroeville, Pa.; JAMES ELKIN, Duquesne Light Co., Coal Dept., Pittsburgh, Pa.; HARRY LEONARD, Joy Manufacturing Co., Franklin, Pa.; LEWIS S. McNICKLE, Hanna Coal Co., Div. of Consolidation Coal Co., Inc., Cadiz, Ohio; CLARENCE JESSE, Semet-Solvay Div., Allied Chemical Corp., Bluefield, W. Va.; E. J. HARRIS, U. S. Bureau of Mines, Pittsburgh, Pa.; ARTHUR L. HAWTHORNE, Hanna Coal Co., Division of Consolidation Coal Co., Inc., Cadiz, Ohio; THOMAS E. KOBRICK, Bethlehem Mines Corp., Bethlehem, Pa.; RALPH KREK, U. S. Bureau of Mines, Pittsburgh, Pa.; JAMES V. BURGESS, Madison, W. Va.; JOHN E. KATLIC, Allied Chemical Corp., Morristown, N. J.; DONALD S. KINGERY, U. S. Bureau of Mines, Pittsburgh, Pa.; MAX FLORJANCIC, Mathies Coal Co., Finleyville, Pa.; R. P. HIGHTOWER, Wisconsin Steel Coal Mines, International Harvester Co., Benham, Ky.

Research and Planning Committee—*RALPH BANKS (Chairman), Inland Steel Co., Sesser, Ill.; †*JAMES WESTFIELD; *C. WILLIAM PARISI, Pittsburgh Coal Co., Div. of Consolidation Coal Co., Inc., Library, Pa.; *WOODS G. TALMAN, U. S. Steel Corp., Pittsburgh, Pa.; *JOSHUA SMITH, Beckley, W. Va.; *ANDREW HYSLOP, JR., Hanna Coal Co., Div. of Consolidation Coal Co., Inc., Cadiz, Ohio; *HARRY GANDY, JR., Mayo, Md.; *C. E. LINKOUS, Island Creek Coal Co., Holden, W. Va.; *JAMES D. REILLY, Hanna Coal Co., Div. of Consolidation Coal Co., Inc., Cadiz, Ohio

Roof Control Committee—FRANCIS R. BOYLE (Chairman), Frick District, U. S. Steel Corp., Uniontown, Pa.; PAUL BUDZAK, Freeman Coal Mining Corp., W. Frankfort, Ill.; JOHN MCCORMICK, U. S. Bureau of Mines, Pittsburgh, Pa.; JAMES R. VILSECK, U. S. Steel Corp., Coal Div., Gary Dist., Gary, W. Va.; EMERY OLSEN, Western District, Coal Div., U. S. Steel Corp., Dragerton, Utah; DONALD C. JONES, MacLean-Hunter Publishing Corp., Chicago, Ill.; CHARLES T. HOLLAND, West Virginia University, School of Mines, Morgantown, W. Va.; †*JOSHUA SMITH; A. M. SHAFFER, Republic Steel Corp., Uniontown, Pa.; G. R. HAWORTH, Continental Oil Co., Ponca City, Okla.; J. L. KNIGHT, Union Carbide Corp., South Charleston, W. Va.; LAWRENCE ADLER, Virginia Polytechnic Institute, Blacksburg, Va.; GORDEN ROBERTS, Monterey Coal Co., Carlinville, Ill.

Environmental Health Committee—†THOMAS E. KOBRICK (Chairman); †EDWARD ONUSCHECK; †*C. WILLIAM PARISI; †PAUL C. LINGO; †LEWIS E. EVANS; WILLIAM SMITH, National Steel Corp., Weirton, W. Va.; JERIMIAH R. LYNCH, Dept. of Health, Education & Welfare (HEW), Cincinnati, Ohio; KENNETH M. MORSE, U. S. Steel Corp., Pittsburgh, Pa.; DAVID MANEVAL, Pennsylvania Dept. of Mines & Mineral Industries, Harrisburg, Pa.; DONALD P. SCHLICK, U. S. Bureau of Mines, Washington, D. C.

Off-The-Job Safety Committee—DON F. METHENY (Chairman), Bethlehem Mines Corp., Bethlehem, Pa.; W. R. PARK, U. S. Bureau of Mines, Mt. Hope, W. Va.; W. A. KISER, Virginia Div. of Mines, Drawer V, Big Stone Gap, Va.; CARSON HIBBITTS, District 28, United Mine Workers of America, Norton, Va.; THOMAS LIDDLE, Westmoreland Coal Co., Big Stone Gap, Va.; WILLIAM MUNCIE, Bituminous Casualty Corp., Rock Island, Ill.; EDWARD W. LEWIS, North American Coal Corp., Ohio Div., Powhatan Point, Ohio

Training and Visual Aids Committee—†PAUL BUDZAK (Chairman); STANLEY H. MOONEY, Woodward Co., Div. of Mead Corp., Woodward, Ala.; †MAURICE E. FOWLER; WALTER FLEMING, U. S. Steel Corp., Fairfield, Ala.; JULIUS OLZER, Ohio Valley Div., Consolidation Coal Co., Moundsville, W. Va.; BENNIE MORGAN, Monterey Coal Co., Carlinville,

Ill.; WAYNE GRAMES, U. S. Bureau of Mines, New York, N. Y.; WILLIAM HOOVER, U. S. Bureau of Mines, Johnstown, Pa.; C. M. DOVIDAS, U. S. Bureau of Mines, Vincennes, Ind.

Membership Committee—JAMES H. HURLEY (Chairman), Helen and Florence Mining Companies, Seward, Pa.; MELVIN TRILO, Logan Coal Operators' Assoc., Logan, W. Va.; †*C. E. LINKOUS; †CLARENCE JESSE; DENNIS FRAILEY, Old Ben Coal Corp., Benton, Ill.; †STANLEY H. MOONEY; WILBUR SIMON, Christopher Coal Co., Div. of Consolidation Coal Co., Inc., Osage, W. Va.; JESSE SHEPPERD, Hanna Coal Co., Div. of Consolidation Coal Co., Inc., Cadiz, Ohio; GEORGE P. RESICK, Pennsylvania Department of Mines & Mineral Industries, Ebensburg, Pa.

Program Committee—WARD STAHL (Chairman), U. S. Bureau of Mines, Washington, D. C.; E. L. BAKER, Lynch District, U. S. Steel Corp., Lynch, Ky.; CHARLES D. BOWLING, Semet-Solvay Div., Allied Chemical Corp., Longacre, W. Va.; †PAUL C. LINGO; †JOHN REEVES; JOHN MCCracken, Mine Safety Appliances Co., Pittsburgh, Pa.; LEWIS JESALOVSKY, Hanna Coal Co., Div. of Consolidation Coal Co., Inc., Cadiz, Ohio; †THOMAS E. KOBRICK; DONALD HUNTLEY, U. S. Bureau of Mines, Johnstown, Pa.

Publicity Committee—†REX LAUCK (Chairman); HARRISON GILMER, U. S. Bureau of Mines, Washington, D. C.; HERBERT FOSTER, National Coal Association, Washington, D. C.; A. E. FLOWERS, Coal Age, McGraw-Hill Inc., New York, N. Y.; ROBERT W. VAN EVERA, American Mining Congress, Washington, D. C.; GEORGE C. LINDSAY, MacLean-Hunter Publishing Corp., Chicago, Ill.; LEONARD GROSS, Consolidation Coal Co., Inc., Morgantown, W. Va.

Contest & Awards Committee—†*HARRY GANDY, JR. (Chairman); †ROBERT L. VINES; †REX LAUCK

Nominating Committee—†*RALPH BANKS (Chairman); †*JAMES WESTFIELD; †C. WILLIAM PARISI

Staff Representative—†RICHARD SNYDER

*Past General Chairman

†Address Listed Elsewhere

1970

VOLUME 8

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**CONSTRUCTION
INDUSTRY and
PUBLIC
EMPLOYEE**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

of most programs today) is the suggestion program.

The individual safety engineer must learn to make the best of the level of development of the suggestion program as it exists in his plant, and not seek refuge in the defenses we discussed earlier.

To this point, I may have sounded critical of the individual plant safety engineer. The safety engineer's task is not an easy one. The demands placed upon his time have grown to the point that relief is mandatory. Organized safety is utilizing every available communicating media to impress upon the line supervisor his responsibility for individual employee safety. In theory, when the line supervisor recognizes his responsibilities in this area, the safety engineer then may begin to assume the role that was originally envisioned for him—that of a program administrator. The development of the supervisor's response to job safety responsibility has not been as broad or successful as we thought it might be by this time. I suspect that the suggestion people have found the same to be true in this area. On occasion, a percentage of the suggestion workload being placed on the safety engineer is due to the suggestion people having encountered

difficulty when referring suggestions to individual job supervisors and having to a degree abandoned this aspect of the program and forwarded many of these ideas to the safety engineer. The resulting estrangement does little to advance either of our programs. More complete screening of suggestions before they are referred to the safety activity is an important must. A narrower range of safety engineer responsibility must be envisioned by the suggestion coordinator. The suggestion coordinator must himself become more conversant with general plant safety policy.

In summarizing, permit me to observe that, at the Ford Motor Company, cooperation between safety and suggestion people has saved lives and countless instances of unnecessary suffering, improved working conditions, and created new jobs. It is only when you compare the progress made with the tremendous potential for progress that you become particularly concerned about the need for closer and more effective cooperation. As a safety engineer, let me say that the suggestion people have provided us, particularly in the promotional and imaginative areas, examples that we would do well to follow.

OFFICERS OF THE

CONSTRUCTION SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—*DONALD W. DODSON, Mgr. Engr. Dept., Aetna Life & Casualty Co.

1st Vice-General Chairman—*RALPH W. ARMSTRONG, Supervising Engr., Engineering Div., The Travelers Insurance Co.

2nd Vice-General Chairman—*THOMAS J. LASKOWSKY, Project Safety Eng., Uhl-Hall-Rich

General Secretary—‡*GEORGE E. ARO, Saf. Mgr., United Engineers & Construction, Inc.

Assistant General Secretary—*FRED A. HORNSBY, JR., Product Line Manager, Mine Safety Appliances Co.

Building Division—*A. R. KLASHAK (Chairman), Manager of Safety, Hunkin-Conkey Construction Co.; HENRY V. CARVILL (Vice Chairman), Saf. Dir. & Ins. Mgr., Henry C. Beck Co.; RALPH ADAMS, Safety Engineer, Miller Davis Co.; CHARLES W. BORDEN, JR., Manager of Safety, Ceko Corp.; ‡*WM. G. BRYSON, Saf. Dir., Tidewater Construction Corp.; WILLIAM M. CONNELL, Supvr. of Safety Engineering, Port of New York Authority; PAUL H. CONNELLEY, United Brotherhood of Carpenters & Joiners of America; CLAYTON P. DEANE, Director of Construction Safety, Virginia Department of Labor & Industry; ‡*FREDERICK H. DEEG, Vice President, American Mutual Insurance Alliance; JAMES W. GILKESON, JR., Vice President in Charge of Engineering, Nielsen Construction Co., Inc.; •NORBERT J. HYNK, Safety Director, Associated General Contractors of Greater Milwaukee; FREDERICK M. LIVINGSTON, JR., Safety Director, Turner Construction Company; ROBERT D. MCCALL, Manager of Accident Prevention, Construction Industry Advancement Program; ‡•HUGH J. McRAE, Safety Director, Building Construction Employers' Assn.; GEORGE A. MOORE, Pres., George A. Moore & Associates, Inc.; JOHN F. MURRAY, Manager, Loss Control Department, Firemans Fund American Insurance Co.; RALPH NILES, Safety Engineer, John A. Volpe Construction Co.; FRANCIS L. OTTO, Construction Specialist, Office of Occupational Safety, Bureau of Labor Standards, U. S. Department of Labor; CHARLES R. PETERS, Saf. Dir., Bldg. Trades Employer's Assn.; THOMAS J. REHKEMPER, Director of Safety, Associated General Contractors of St. Louis; RICHARD E. SCHROEDER, Director, Home Office Engineering Services, American Mutual Liability Insurance Co.; •GENE WASSERMAN, Safety Director, Wexler Construction Company, Inc.; ‡*ROBERT A. WENDELL, Chief, Safety Office, U. S. Army Engineer Division, South Atlantic; ALLEN C. WOLF, Supt., Engineering Dept., Aetna Life and Casualty Co.; ROBERT B. WOODWARD, Managing Dir., Steel Joist Institute; ROBERT C. ZIEMKE, General Superintendent, M. G. Electric Service Co., Inc.

Heavy Division—*HOWARD S. LATHAM (Chairman, Chief Saf. Engr., Bur. of Reclamation; WAYNE L. CHRISTENSEN (Vice Chairman), Safety Dir., The Rust Engineering Co.; JOHN BARKER, Safety Supervisor, The Ralph M. Parsons Co.; J. A. BARTON, JR., Asst. Safety Supv., Bechtel Corporation; CARLYLE F. BUNN, Chief, Safety Branch, U. S. Army Engineer District Kansas City; JACK CHAMBERS, Al Johnson Construction Co.; G. M. DUWORS, Safety Supv., Stone & Webster Engineering Corp.; ROY H. ENO, Saf. Dir., H. B. Zachery Co.; ROBERT M. FARRELL, Saf. Dir., International Union of Operating Engineers, Local No. 150; LUTHER U. FLEMING, Chief, Saf. Office, Dept. of the Army, Ohio River Div., Corp. of Engineers; W. E. HARGROVE, Safety Engr., Tennessee Valley Authority; W. M. HOXIE, Chief, Safety Office, U. S. Army Engineer Div., New England; CLAYTON C. KILPATRICK, Safety Engineering Supervisor, Port of New York Authority; CARL H. LEWIS, Construction Div., Loss Prevention & Engineering Dept., Royal-Globe

Insurance Companies; 1. S. MCINTOSH, Senior Accident Prevention Officer, Design & Construction, The Hydro-Electric Power Comm. of Ont.; DALE MARR, Vice Pres., Safety Director, Operating Engrs., Local Union 3; ROBERT J. MASSMAN, Safety Engineer, Massman Construction Co.; C. RUSSELL MATTSO, Manager, Accident Prevention, Dravo Corporation; JAMES R. MILOR, Mr. of Safety, Arthur G. McKee Co.; CHARLES E. MORGAN, Asst. to Safety Director, Tennessee Valley Authority; WILLIAM B. MURPHY, Saf. Office, Office Chief of Engineers, U. S. Army; RICHARD ORT, Safety Director, Process Plants Construction Division, Allied Chemical Corporation; JAMES E. PAKENHAM, Asst. Safety Manager, Ebasco Services, Inc.; ERIC L. PEDLEY, Pedley-Knowles & Co.; CLUFF A. PETERSON, Director of Safety, Vinnell Corp.; ROBERT L. PETERSON, Engineering and Safety Dept., American Insurance Assn.; ALEXANDER PURDY, Jr., Mgr. Labor Rels., Burns & Roe Inc.; W. VERNIE REED, First Vice Pres., Laborers' International Union of North America; ARTHUR L. SCHMUHL, Director, Safety and Training Division, The Associated General Contractors of America, Inc.; VERNON A. STRAHM, Safety Dir., U. S. Army Mobility Equip. Command; LEE D. TRACY, Director, Loss Control, Ingram Corp.; KENNETH A. WHITE, Chief, Safety Office North Central Div., Corps of Engineers; JEROME J. WILLIAMS, Co-ord., Constr. Saf. Task Force, Bur. of Labor Standards, U. S. Dept. of Labor.

Highway Division—*EUGENE W. ROBBINS (Chairman), Mng. Dir., Contrs. Div., American Road Builders Assn.; PHILIP A. HAVEY (Vice-Chairman), Director Construction Services, Loss Control, The Hartford Insurance Group; RALPH ANDERSON, JR., Ralph R. Anderson Co.; ANDREW A. ANTONUCCI, Exec. Secy., The Contractors Assn. of Eastern Pennsylvania; W. C. M. BUTLER, JR., Pres., Central Pennsylvania Quarry, Stripping and Construction Co.; WILLIAM H. CRAIG, JR., Service Director, Virginia Road Builders Association; RAYMOND R. CROWE, Field Representative, Constructors Association of Western Pennsylvania; RUSS ELVEY, Saf. Supvr., Warren Brothers Co.; LEONARD FREED, Mgr. of Safety, Ohio Contractors Assn.; HENRY L. HECK, JR., Field Director, Associated Pennsylvania Constructors; THEODORE C. HILLMAN, Corporation Safety Director, Peter Kiewit Sons; BERNARD P. LANDRY, Dept. of Transportation, Federal Highway Administration, Occupational Safety Branch; H. T. LARMORE, Mgr., Performance Standards Administration, Construction Industry Mfgs. Assn.; JOHN M. LEINENBACH, Asst. Exec. Dir., Kentucky Road Builder's Assn.; DALE R. MEDSKER, Dale Medsker & Associates, Inc.; ROY H. OLSON, Safety Engineering Consultant, Michigan Mutual Liability Co.; J. PAINE, Asst. Exec. Dir., American Concrete Paving Assn.; DONALD D. POWELSON, Exec., Secy., Tenn. Road Builder's Assn.; CHARLES H. SHAW, JR., Vice President, Thompson-Arthur Paving Co.; LEONARD L. SHERTZER, JR., Secy.-Mgr., Ala. Road Builder's Assn.; JOHN S. SPANGLER, Asst. Executive Dir., National Asphalt Pavement Assn.; CARLOS STONE, Asst. Exec. Dir., Fla. Road Builder's Assn.; C. E. WARREN, Safety and Personnel Dir., Nello L. Teer Co.; JOHN P. WIET, Exec. Vice Pres., Illinois Road Builder's Assn.

Home Building Division—*†ROBERT L. MOORE (Chairman), Asst. Vice Pres., Lumbermass Mutual Casualty Co.; NELSON B. NISSEN, (Vice-Chairman), Chief Safety Engineer, Argonaut Insurance; CLEMENT J. LUEPKE, Consultant.

Specialty Division—*†MARTIN F. MULHALL (Chairman), Educ. & Trng., CNA Insurance; VINCENT D. AUBUCHON (Vice Chairman), Director; Field Safety, Nooter Corp.; C. A. BEANE, Asst. Sales Manager, Fibre Metal Products Co.; RAY L. BEELER, Director of Legislative Affairs, The Associated General Contractors of America, Inc.; ALAN F. BURCH, Safety Director, International Union of Operating Engineers, AFL-CIO; MATTHEW BURKHART, Construction Consultant, Insurance Company of North America; ALFRED B. CIESAR, Sales Mgr., Western States, Lehigh Safety Shoe Co.; GEORGE DODGE, E. D. Bullard Co.; †BERNIE M. ENFIELD, Saf. & Trng. Dir., Chicago Bridge & Iron Co.; KARL GEIGES, SR., Vice Pres., Underwriters Laboratories; †GERARD O. GRIFFIN, Manager, Hazard Control, Dravo Corp.; CHARLES J. HART, Secretary, Codes & Standards Comm., National Electrical Contractors' Assn, Inc.; †ROBERT L. JENKINS, Consultant; WARDIE W. KING, Chief, Safety Office, U. S. Army Engineer

Division, Safety, Fabricated Steel Construction—KOSKY, Coordinator Erection Equipment & Safety, Bethlehem Steel Corp.; ROBERT L. MANNERS, President, Loss Control, Inc.; Operation, Bethlehem Steel Corp.; JACK D. MATHEWS, Vice President, Mathews Equipment, Division of U. S. Forgecraft Corp.; JOSEPH C. NELMS, JR., Miller Equipment Division, E. S. B.; DALE NYBERG, Ind. Const. Div., Allied Steel Co.; JOHN V. O'BRIEN, Safety Supvr & Labor Relations Repr., Bechtel Corporation; HENRY T. PEREZ, Editor Construction Methods & Equipment; G. J. SAMSON, General Manager, Construction Safety Associations of Ontario. A. J. SCARDINO, Safety Director, Jahncke Service; JOHN G. SELLERS, Safety Engineer, Combustion Engineering, Inc.; HUNTER P. WHARTON, General President, International Union of Operating Engineers.

Program Committee—RALPH W. ARMSTRONG, Coordinator; Co-Chairman: HENRY V. CARVILL (Building), WAYNE L. CHRISTENSEN (Heavy), PHILIP A. HAVEY (Highway), VINCENT D. AUBUCHON (Specialty).

Membership Committee—KENNETH WHITE (Chairman), L. FREED, N. J. HYNEK, H. J. McRAE A. L. SCHMUHL, G. W. WASSERMAN

Newsletter Committee—ROBERT PETERSON (Editor)

Health Committee—FRANCIS JEWEL PATTON (Chairman), R. N., Tennessee Valley Authority; JANET LARSON, R. N. Construction Nurse, G. K. Newberg Construction Co.; TERESA A. MOFFIT, R. N., Occupational Health Consultant, Liberty Mutual Insurance Co.; PATRICIA B. YANDELL, Regional Saf. Office Asst., U. S. Dept. of the Interior, Bur. of Reclamation, Regional Office, Region I; CLARE B. SCHWARTZ, R. N., Employers Mutuals of Wausau

Research Committee—VERNON A. STRAHM (Chairman)

Public Relations Committee—HUNTER P. WHARTON (Chairman)

Training Committee—W. E. HARGROVE (Chairman)

Visual Aids Committee—THEODORE C. HILLMAN (Chairman)

Standards Committee—FREDERICK M. LIVINGSTON, JR. (Chairman)

Special Projects Committee—WM. B. MURPHY (Chairman)

Off-The-Job Committee—ROBERT D. MCCALL (Chairman)

Association Committee—WILLIAM BRYSON (Chairman)

Task Force—KENNETH WHITE (Chairman)

Nominating Committee—BERNIE M. ENFIELD (Chairman), WILLIAM G. BRYSON, THEODORE E. ARO, FREDERICK H. DEEG, ROBERT L. MOORE, ROBERT A. WENDELL

Honorary Life Members—R. J. BEHLEY, C. M. CAHILL

†—Past General Chairmen

*—Administrative Committee

•—Membership Committee

†—Task Force

PUBLIC EMPLOYEE SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—†WARREN I. HANSON, Safety Engineer II, Milwaukee, Wis.

Vice General Chairman—†MARK MARKSON, Employee Safety Coordinator, Minnesota Department of Highways, St. Paul, Minn.

Training and Awards Committees—†STEVE STAR (Chairman), Safety Director of Public Works, City of Los Angeles, San Pedro, Calif.

Program and Legislation Committees—†MABEL H. JOHNSON, (MRS.) (Chairman), Insurance & Safety Supervisor, Town of Stratford, Stratford, Conn.

Engineering and Off-The-Job Safety Committees—†ALFRED TYROLER (Chairman), Safety Supervisor, Arizona Highway Dept., Phoenix, Ariz.

Membership and Associations Committees—†GERALD VAN BEEK (Chairman), Fleet Safety Services, Wheaton, Ill.

Statistics and Health Committees—†CLIFFORD R. BURKERT (Chairman), Safety Director, Safety and Claims Office, City and County of Denver, Denver, Colo.

Newsletter Editor—†LEROY B. HANSEN, Director of Safety and Civil Defense, The City of Oklahoma City, Oklahoma City, Okla.

Assistant Newsletter Editor—WM. H. RODGERS, Safety Officer, Division of Highways, State of Colorado, Denver, Colo.

Secretary—†HARRY HATCHER, Safety Coordinator, Wisconsin Dept. of Administration, Bureau of Personnel, Madison, Wis.

Advisory Committee (Past General Chairmen)—DAVID I. DARLING (1969-1970) Director of General Safety, Canadian Forces Headquarters, Dept. of National Defence, Ottawa 4, Ontario, Canada; MELVIN G. LYELL (1968-69) Safety Engineer, Va. Dept. of Highways, Richmond, Va.; JOSEPH F. WICKLESS (1967-68), Safety Coordinator, Civil Service Commission, City of Baltimore, Baltimore, Md.; WARREN W. VEREIDE (1966-67), Safety Supervisor, City of Seattle, Seattle, Wash.; ROBERT I. GRIEGO (1965-66), Safety Director, New Mexico State Highway Dept., Santa Fe, N. M.; JOHN H. PHILLIPS (1964-65), District Engineer, Va. Dept. of Highways, Lynchburg, Va.; GEORGE F. KUHN (1963-64), Training & Safety Supervisor, Illinois Division of Highways, Springfield, Ill.; JAMES F. GLEASON (1962-63), Employee Services Officer, City of San Diego, San Diego, Calif.; LOUISE RATNER (MRS.) (1961-62), Safety and Claims Supervisor, Ohio Dept. of Highways, Columbus, Ohio; TAVIA (H. D.) JONES (1956-57), Registered Engineer, Highway Safety and Bituminous Paving, Consultant, Graham, N. C.; JOHN E. PAGNARD (1954-55), Safety Coordinator, Dept. Industrial Relations, Columbus, Ohio; MILTON M. BOWMAN (1950-52), Safety Counselor, Cleveland, Ohio; WARREN D. WILT (1948-50), Safety Engineer, City of Detroit, Detroit, Mich.

Div. of Highways, Springfield, Ill.; WILLIAM A. CAVANAGH, Director Occupational Health & Safety Dept., Cheyenne, Wyo.

Awards Committee—GERALD L. HUGHES (Vice Chairman), Safety Officer, City of Philadelphia Police Dept., Philadelphia, Pa.; C. G. CURTIS, JR., (Committeeman), Director, Insurance Div., Texas Highway Department, Austin, Texas

Program Committee—HARVEY M. KUESTER (Vice Chairman), Safety Supervisor, Washington State Highway Commission, Dept. of Highways, Olympia, Wash.; C. P. FULKERSON (Committeeman), Safety Director, Montana Highway Commission, Helena, Mont.

Legislation Committee—R. BRANDON MARSHALL (Vice Chairman), Safety & Claims Coordinator, Ohio Department of Highways, Columbus, Ohio; WALTER HALLA, Safety Coordinator, Prince George's County, Upper Marlboro, Md.

Engineering Committee—JOHN F. NIMICK (Vice-Chairman), Chief, Safety Engineering and Education, Dept. of Labor and Industry, State of Maryland, Baltimore, Md.; JAMES W. SMIRLES, Sales Manager, National Loss Control Service Corp., Chicago, Ill.

Off-The-Job Safety Committee—MARC BURBRIDGE (Vice Chairman), Safety Office, City of Portland, Portland, Ore.; JOHN STEVENSON (Committeeman), Safety Supervisor, Seattle Water Dept., Seattle, Wash.

Membership Committee—*LOUISE S. RATNER, (MRS.) (Vice-Chairman), *HARRY HATCHER, *GERALD L. HUGHES

Associations Committee—JOHN L. GUILMARTIN (Vice Chairman), Safety Director, State of Connecticut, Dept. of Transportation, Wethersfield, Conn.; HARRY TAYLOR, Marine Transport Lines, Inc., New York, N. Y.; CHARLES J. SETZER, City Safety Coordinator, Dept. of Personnel, City of New York, New York, N. Y.

Statistics Committee—HAROLD M. GORDON (Vice Chairman), Safety Officer, District of Columbia Government, Washington, D. C.; AL S. HAASE (Committeeman), Public Works Business Manager & Claims Admin., Baton Rouge, La.; TRENTON CROW, Director, Safety Management Office, Federal Water Quality Adm., Environmental Protection Agency, Washington, D. C.

Health Committee—ALBERT J. SZIARTO (Vice Chairman), Safety & Training Administrator, City of Miami, Miami, Fla. DONALD N. MOORE, Safety Engineer, Port of Los Angeles, City of Los Angeles, San Pedro, Calif.; RUTH A. BARTLETT, Illinois Bell Telephone Co., Chicago, Ill.

Assistant Secretary-By Laws—GEORGE J. WOLNEZ, Safety and Fire Prevention, State of Oregon, Salem, Ore.

Assistant Secretary-Historian—*AL HAASE

Nominating Committee—*DAVID I. DARLING (Chairman), *MELVIN G. LYELL (Committeeman), *JOSEPH F. WICKLESS (Committeeman)

Division of Police—*GERALD L. HUGHES (Chairman); WALTER T. HAYES, Chicago Police Dept., Dept. Safety Officer, Chicago, Ill.; JOHN J. CARROLL, Safety Officer, Dept. of Public Property, Philadelphia, Pa.; ARTHUR L. GIRARD, Asst. Safety Officer, Chicago Police Dept., Chicago, Ill.

Ordnance Systems Command, Safety School at Indiana University, Bloomington, Ind.; CAPTAIN FRANK MALONEY, Division of Safety, New York, N. Y.; SAMUEL CAHAN, Acting Chief, Region II, Protection Branch, U. S. General Services Administration, Div. of Fire, New York, N. Y.; JOHN R. TRAVELL, Deputy Chief of Dept. City of New York, New York, N. Y.

Refuse Collection & Disposal Division—*GERALD D. VAN BEEK (Chairman); J. PAUL BURKE, Safety Advisor, Civil Service Commission, City of Baltimore, Baltimore, Md.; PERRY GULBRANSEN, Safety Director, Streets and Sanitation Dept., Chicago, Ill.; CARL V. SUMME, State Compensation Insurance Fund, Inglewood, Calif.; *WARREN D. WILT; *HAROLD M. GORDON

Division of Streets and Highways—*TREFT W. SCHULTZ (Chairman); JOHN F. HUZVAR (Co-Chairman), Employee Safety Coordinator, Pennsylvania Dept. of Transportation, Harrisburg, Pa.; JOE C. GARCIA, New Mexico State Highway Dept., Santa Fe, New Mex.; *ALFRED TYROLER (Committeeman); *WILLIAM H. RODGERS

Regional Representatives—Region I—(Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New Brunswick and Quebec); *JOHN L. GUILMARTIN; Region II—(New York, Pennsylvania, New Jersey and Delaware); *JOHN F. HUZVAR; Region III—(Washington, D. C., Maryland, West Virginia, Kentucky, Tennessee, North Carolina and South Carolina); *JOHN F. NIMICK; Region IV—(Georgia, Florida, Alabama, Louisiana, Mississippi and Arkansas); *ALBERT J. SZIARTO; Region V—(Ohio, Indiana, Illinois, Michigan, Wisconsin and Ontario); Lt. COL. ROBERT A. BEAUMONT, Safety Ammunition Officer, 123 U. S. Army Command, Lansing, Mich.; Region VI—(Minnesota, North Dakota, South Dakota, Iowa, Nebraska, Missouri, Kansas and Manitoba); WAYNE WILSON, Safety Coordinator, Iowa State Highway Commission, Ames, Iowa; Region VII—(Oklahoma, Texas, New Mexico and Arizona); A. (MAYO) PACHECO, JR., Director of Safety and Training, County of Los Alamos, Los Alamos, New Mexico; Region VIII—(Nevada, California and Hawaii) J. A. MOORE, Safety Director, Nevada State Highway Dept., Carson City, Nev.; Region IX—(Utah, Colorado, Wyoming, Montana, Idaho, Oregon, Washington, Alaska, Saskatchewan, Alberta and British Columbia) *WILLIAM H. RODGERS

National Safety Council—RAYMOND LASCOE, Staff Representative, 425 N. Michigan Ave., Chicago, Ill. 60611

*—Address listed elsewhere

†—Administrative Committee

PLAN NOW TO ATTEND THE

1971 NATIONAL SAFETY CONGRESS OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

1972 The Congress is always a big week, a worthwhile week for the 13,000 safety people who attend.

1973 At the '71 Congress you can meet other safety people, with the same problems and responsibilities as yourself. You can exchange views and ideas on accident prevention, health, hygiene, and fire prevention . . . on safety in industry, traffic, school, at home and on the farm.

1974 You can see the largest of all safety equipment exhibits at the Congress . . . an opportunity for you to make well-informed buying decisions for your company.

This four-day educational program, planned and presented by the National Safety Council, can be your most thought-provoking, most worthwhile safety experience in 1971.

Make plans early to attend the 1971 Congress and bring the other people in your organization who have safety responsibilities.

FUTURE CONGRESS DATES

1971	October	25-28
1972	Oct. 30 - Nov. 2	
1973	Oct. 29 - Nov. 1	
1974	Sept. 30 - Oct. 3	

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

1970

VOLUME 9

NATIONAL SAFETY CONGRESS TRANSACTIONS

ELECTRONICS and ELECTRICAL EQUIPMENT



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

MEMBERS OF THE EXECUTIVE COMMITTEE

ELECTRONIC AND ELECTRICAL EQUIPMENT SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—ALAN REED, Manager, Product Engineering, Daniel Woodhead Co., Northbrook, Ill.

1st Vice Chairman—J. W. LOOPER, Safety Dir., National Cash Register Co., Dayton, Ohio

2nd Vice Chairman—GEORGE H. POPE, Managing Engineer, Casualty & Chemical Hazards Dept., Underwriters' Laboratories, Northbrook, Ill.

Secretary—H. A. PERKINS, Public Relations & Safety, Western Electric Co., Atlanta, Ga.

Membership Committee—R. J. GIES (Chairman), Mgr., Safety, A. B. Dick Co., Niles, Ill.; B. T. KING, District Manager, Charles R. Teas Co., Inc., Chicago, Ill.; LEE BANIK, Safety Supervisor, Teletype Corp., Skokie, Ill.

Program Committee—C. WM. WALTERS (Vice Chairman), Manager, Loss Prevention, Automatic Electric Co., Northlake, Ill.; A. F. CICHY (Vice Chairman), Loss Prevention Mgr., General Telephone & Electronics Corp., New York, N.Y.

Newsletter Committee—CHARLES L. VICTOR (Chairman), Div. Mgr. of Safety & Health, Fairchild Semiconductor, Mountain View, Calif.; WALTER W. BAESL, Safety Advisor, Business Product Group, Xerox Corp., Webster, N.Y.; GEORGE MACDONALD, Vice President, Rollins Burdick Hunter Co., Chicago, Ill.; WILLIAM VOLZ, Safety Manager, Motorola, Inc., Semiconductor Products Div., Phoenix, Ariz.

Research and Engineering Committee—HOWARD P. MICHENER (Chairman), Mgr. of the Engineering & Safety Regulations Dept., National Electric Mfgs. Assn., New York, N. Y.; JACK CONWAY (Vice Chairman), Safety Director, Sylvania Electric Corp., Electronic Tube Div., Emporium, Pa.; FRED COUNCELL, Product Manager-Instruments, Bachrach Instrument Co., Pittsburgh, Pa.; HARRY CROON, Director of Safety & Security, Ampex Corp., Elk Grove, Ill.; CHARLES W. MICKEL, Mgr., Safety & Security Link Div., Advanced Technology, c/o Singer Corp., Sunnyvale, Calif.; GEORGE H. POPE, Managing Engineer, Casualty & Chemical Hazards Dept., Underwriters' Laboratories, Northbrook, Ill.; ALAN REED, Manager, Product Engineering, Daniel Woodhead Co., Northbrook, Ill.; Mel Whittington, Safety Supervisor, Westinghouse Electric Corp., Lester Branch, Philadelphia, Pa.

Education and Training Committee—R. E. WHITESIDE (Chairman), Manager, Safety & Health Services, Employers Insurance of Wausau, River Forest, Ill.; B. L. WEBER (Vice Chairman), Asst. to Insurance Mgr., SCM Corp., New York, N.Y.; ROBERT T. FOSTER, Mgr., Health & Safety, The Bendix Corp., Kansas City, Mo.; J. W. LOOPER, Safety Dir., National Cash Register Co., Dayton, Ohio; HILARY L. RYNIOWICZ, Safety Specialist, Equipment Group, Memorex Corp., Santa Clara, Calif.; J. A. WALDRON, Saf. Supvr., Packard Elec. Div., General Motors Corp., Warren, Ohio; ROBERT S. WIRTH, Mgr., Safety & Security, Lenkurt Electric Co., Inc., San Carlos, Calif.

Relations & Training, Western Electric Co., Oklahoma City, Okla.; LAWRENCE ZEPERNICK (Vice Chairman), Director of Loss Prevention, Norton Simon, Inc., 230 Park Ave., New York, N.Y. 10017; B. B. TURNER (Chairman), Corp., Safety Dir., Texas Instruments Inc., Dallas, Texas

Product Safety Committee—RICHARD S. WHIPPLE (Chairman), Mgr., Safety & Hygiene, I B M Corp., Components Div., Hopewell Junction, N. Y.; JOHN F. HESSMAN (Vice Chairman), Staff Engineer, Electronic Industries Assn., Washington, D.C.; CHARLES E. KOEGLER, National Accounts Coordinator, Pyrotronics, Inc., White Plains, N. J.; L. E. LAFEHR, Managing Director, International Assoc. of Electrical Inspectors, Chicago, Ill.; D. K. OBNELAND, Manager, Underwriters' Laboratories Coordinator, RCA Corp., Indianapolis, Ind.; LANSING K. RYDER, Safety Director, Rome Cabel Co., Rome, N. Y.

Long Range Planning Committee—B. B. TURNER (Chairman), Corp. Safety Dir., Texas Instruments Inc., Dallas, Tex.; MYRON L. MILLER, Westinghouse Electric (Retired), Trafford, Pa.; H. A. PERKINS, Public Relations & Safety, Western Electric Co., Atlanta, Ga.; J. A. WALDRON, Saf. Supvr., Packard Elec. Div., General Motors Corp., Warren, Ohio; R. E. WHITESIDE, Manager, Safety & Health Services, Employers Insurance of Wausau, River Forest, Ill.

Staff Representative—JOSEPH H. VANSICKLE, Industrial Dept., National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

Past General Chairmen—1947-49, E. K. TAYLOR; *1949-50, H. B. DUFFUS; 1950-51, M. F. BRANCARDI; 1951-52, C. N. FOGG; 1953-53, J. M. TRANSUE; 1953-54, M. L. MILLER; 1954-55, J. A. EDMONDS; 1955-56, J. J. LAWLER; 1956-57, C. F. SCHLUETER; *1957-58, E. E. GEBHART; 1958-59, G. W. KOCH; 1959-60, W. F. MCCHESENEY, *1960-61, E. J. TURSON; 1961-62, G. MACDONALD; 1962-63, G. R. SMITH; 1963-64, F. C. PEREGOY; 1964-65, H. A. PERKINS; 1965-66, J. A. WALDRON; 1966-67, R. E. WHITESIDE; 1967-68, B. B. TURNER; 1968-69, B. B. TURNER, 1969-70, ALAN REED

*Deceased

1970

NAG 77

U. H.
1970

VOLUME 11

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**GLASS,
CERAMICS,
RUBBER and
PLASTICS**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

OFFICERS OF THE

GLASS AND CERAMICS SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—H. CLARK UNDERWOOD, PPG Industries, Inc., Pittsburgh, Pa.

First Vice-Chairman—E. M. THOMPSON, Ford Motor Company, Nashville Glass Plant, Nashville, Tenn.

Second Vice-Chairman—RICHARD REILLY, PPG Industries, Inc., Pittsburgh, Pa.

Secretary—DONALD D. HOBBS, Anchor Hocking Corp., Lancaster, Ohio

Newsletter—CHARLES B. REAGAN (Editor), Ball Corporation, Muncie, Ind.; KENNETH DAVIS, Owens-Illinois, Inc., Bridgeton, N. J.

Program Committee—A. D. DAVIS (Chairman), PPG Industries, Inc., Creighton, Pa.

Health Committee—SAM D. FITHIAN (Chairman), Owens-Illinois, Inc., Streator, Ill.; *W. G. HAZARD, Owens-Illinois, Inc., Toledo, Ohio; JORGE HERNANDEZ-OSUNA, Accion Social Regiomontana, Monterey, N. L., Mexico.

Engineering Committee—*JOHN V. SKENDALL (Chairman), Harbison-Walker Refractories Co., Pittsburgh, Pa.; JAMES KEARNEY, Anchor Hocking Corp., Lancaster, Ohio

Membership Committee—DON J. MORRIS (Chairman), Owens-Illinois, Inc., Alton, Ill.; HOWARD BAKER, Pittsburgh Corning Corp., Port Allegany, Pa.; *H. V. GARDNER, Owens-Illinois, Inc., Toledo, Ohio

Off-the-Job Committee—DAVE PHILLIPS (Chairman), PPG Industries, Inc., Shelbyville, Ind.; FRANK LA POINT, Midland Glass Co., Clifton, N. J.

Training Committee—C. S. KRAFFT (Chairman), PPG Industries, Inc., Clarksburg, W. Va.; *ROBERT W. MOULTON, Ball Corporation, Muncie, Ind.; T. M. HALL, A. P. Green Refractories, Mexico, Mo.

Safety Promotion Committee—*JOHN J. LONG (Chairman), PPG Industries, Inc., Cumberland, Md.; RICHARD LAYMAN, Anchor Hocking Corp., Lancaster, Ohio; R. P. HENRY, PPG Industries, Inc., Henryetta, Okla.

Research Committee—GLENN L. BUTLER (Chairman), Ball Corp., Muncie, Ind.; CHRIS CHICLES, Owens-Corning Fiberglas Corp., Toledo, O.; JERRY D. SMITH, PPG Industries, Inc., Mt. Zion, Ill.

Associations Committee—WILLIAM B. McAFEE (Chairman), PPG Industries, Inc., Meadville, Pa.; MAX CALLAHAN, Liberty Glass Co., Sapulpa, Okla.; WILLIAM CRALL, Owens-Illinois, Inc., Toledo, Ohio

Nominations Committee—ANDREW ORESICK (Chairman), PPG Industries, Inc., Crystal City, Mo.; E. M. THOMPSON, Ford Motor Co., Nashville Glass Plant, Nashville, Tenn.; *JOHN J. LONG, PPG Industries, Inc., Cumberland, Md.

"Blowers and Puggers" Committee—(Past General Chairmen)—FRED G. ANDERSON, Corning, N. Y.; H. V. GARDNER, Owens-Illinois, Inc., Toledo, Ohio; JOHN P. STEPHENSON, Ball Corp., Muncie, Ind.; JAMES L. MORRIS, The Federal Glass Co., Columbus, Ohio; J. C. DITTMER, Cranford, N. J.; T. R. DONOGHUE (deceased); W. G. HAZARD, Owens-Illinois, Inc., Toledo, Ohio; HARRY A. JACKSON, Frigidaire Division, General Motors Corp., Dayton, Ohio; J. H. GATRELL, American Saint Gobain Corp., Kingsport, Tenn.; JOHN B. FULLEN, Kopp Glass, Inc., Swissvale, Pa.; RUSSELL W. FRANK, Ferro Corporation, Cleveland, Ohio; CLYDE C. RUDDICK (deceased); JOHN V. SKENDALL, Harbison-Walker Refractories Co., Pittsburgh, Pa.; EDWIN L. WRAY (deceased); CLINTON BALLINGER, Owens-Illinois, Inc., Gas City, Ind.; JOSEPH E. MORRISON, Houston Chemical Corp., Beaumont, Texas; JOHN RHEINHEIMER, Hunt Foods, Inc., Fullerton, Calif.; ROBERT W. MOULTON, Ball Corp., Muncie, Ind.; C. DOAN NOCE, PPG Industries, Inc., Crystal City, Mo.; FRANK MANNING, Ford Motor Co., Dearborn, Mich.; JOHN J. LONG, PPG Industries, Inc., Cumberland, Md.; JOHN W. BLOOM (deceased); ANDREW ORESICK, PPG Industries, Inc., Crystal City, Mo.

Staff Representative—GRANT SHIBLEY, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

*Past General Chairmen

OFFICERS OF THE

RUBBER AND PLASTIC SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—G. W. NICKEL, Mgr. of Safety, Armstrong Cork Co., Lancaster, Pa.

First Vice Chairman—R. G. FOREJT, Manager, Industrial Relations, General Tire and Rubber Company, Pennsylvania Division, Jeannette, Pa.

Second Vice Chairman—W. E. McCORMICK, Manager, Environmental Control Department, The B. F. Goodrich Co., Akron, Ohio

Secretary—V. G. CORK, Mgr. of Safety, Uniroyal, Inc., Mishawaka, Ind.

Newsletter Editor—D. J. Mariani, Safety Engineer, The Goodyear Tire & Rubber Co., Akron, Ohio

Engineering Committee—R. G. HAVENER (Chairman), Corporate Safety Eng., Uniroyal, Inc., Naugatuck, Conn.; *N. R. HUNTER, Safety Engineer, Dunlop Tire & Rubber Corp., Buffalo, N.Y.; M. S. MASINICK, Safety Dir., Uniroyal, Inc., Detroit, Mich.; M. T. SOULSBY, Safety Engineer, The B. F. Goodrich Co., Akron, Ohio

Health Committee—GEORGE L. WILSON (Chairman), Industrial Hygienist, Firestone Tire & Rubber Co., Akron, Ohio; H. M. McINERNEY, Industrial Hygienist, Goodyear Tire & Rubber Co., Akron, Ohio; W. D. HARRIS, Industrial Toxicologist, Uniroyal, Inc., New York, N. Y.; *S. A. WRIGHT, Mgr., Safety & Security, Inland Div., General Motors Corp., Dayton, Ohio

Membership Committee—JOHN GLENN, JR. (Chairman), Mfg. Mgr., Electric Hose & Rubber Co., Wilmington, Del.; *E. E. GOLDSWORTH, Safety Dir., Gates Rubber Co., Denver, Colo.; *J. R. WETHERHOLT, Safety Dir., Uniroyal, Inc., Joliet, Ill.

Education & Training Committee—L. HARTMAN (Chairman), Dir. of Training & Safety, Firestone Tire & Rubber Co., Pottstown, Pa.; J. P. CARROLL, Safety Manager, The Society of the Plastics Industry, Inc., New York, N.Y.; D. F. SMITH, Safety Engineer, Dayton Tire & Rubber Co., Dayton, Ohio; R. P. AYER, Safety Director, Foster Grant Company, Inc., Leominster, Mass.

Publicity, Trade Association, and Liaison Committee—D. E. DUDROW (Chairman), Corporate Mgr., Safety and Plant Protection, Uniroyal, Inc., Naugatuck, Conn.; A. L. KLING, Loss Prevention Consultant, The Society of the Plastics Industry, Inc., New York, N.Y.

Codes and Standards Committee—*M. R. BATCHE (Chairman), Mgr. of Safety, Firestone Tire & Rubber Co., Akron, Ohio

Statistics Committee—J. W. MUIR (Chairman), Personnel Mgr., Corduroy Rubber Co., Grand Rapids, Mich.

Laboratories Committee—A. M. WADDILL (Chairman), Staff Supervisor, Safety & Loss Prevention Dept., Borden, Inc., Columbus, Ohio

Fire Safety Committee—W. L. SMELSER (Chairman), Manager, Plant Security and Safety, The Kelley Springfield Tire Co., Cumberland, Md.; L. A. WATKINS, Safety Engineer, The General Tire & Rubber Co., Chemical Div., Odessa, Tex.; HERMAN WALTEMADE, JR., Senior Safety Engineer, B. F. Goodrich Chemical Co., Akron, Ohio; W. L. CATO, Mgr. of Safety, The B. F. Goodrich Co., Akron, Ohio

Off-the-Job Safety Committee—W. R. MILLER (Chairman), Corporate Safety Director, Goodyear Tire & Rubber Co., Akron, Ohio; VEMBA E. FOLTZ, Director, Health and Safety, Cooper Tire & Rubber Co., Findlay, Ohio

Synthetic Manufacturing Committee—T. T. SALHANY (Chairman), Safety Engineer, Firestone Synthetic Rubber and Latex Co., Akron, Ohio

Long Range Planning Committee—*L. W. BOULTON (Chairman), Safety and Plant Protection Supervisor, Polymer Corp., Sarnia, Ontario, Canada; *M. R. BATCHE, Mgr. of Safety, Firestone Tire & Rubber Co., Akron, Ohio; *S. A. WRIGHT, Mgr. Safety and Security, Inland Div., General Motors Corp., Dayton, Ohio; *N. R. HUNTER, Safety Engineer, Dunlop Tire & Rubber Corp., Buffalo, N.Y.; *E. E. GOLDSWORTH, Safety Dir., Gates Rubber Co., Denver, Colo.; *G. H. BURKHARDT, Dir., Safety & Health, General Tire & Rubber Co., Akron, Ohio; *J. R. WETHERHOLT, Safety Director, Uniroyal, Inc., Joliet, Ill.

Nominating Committee—S. A. WRIGHT (Chairman); M. R. BATCHE, L. W. BOULTON.

Staff Representative—R. G. BELKNAP, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

*Past General Chairman

1970

NA 671

VOLUME 12

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**INDUSTRIAL
SAFETY**



NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611

OFFICERS OF THE

INDUSTRIAL CONFERENCE

NATIONAL SAFETY COUNCIL 1970-71

Vice President for Industry—C. A. ALLEN, Vice Pres., Engineering, American Mutual Liability Ins. Co., Wakefield, Mass.

Chairman of Industrial Conference—H. C. DAULTON, Dir., of Safety, Louisville & Nashville RR Co., Louisville, Ky.

Chairman of Committees (Chairman-Elect)—J. F. VAN NAMEE, Admin., Accident Prevention, Westinghouse Electric Corp., Pittsburgh, Pa.

Vice Chairmen of Committees—J. W. TYSSE, Mgr. of Safety, Republic Steel Corp., Cleveland, Ohio; H. M. HUNTINGTON, Gen'l. Supvr. of Safety, International Harvester Co., Hinsdale, Ill.; W. E. STUFFING, Dir. of Safety, Carrier Corp., Syracuse, N. Y.

Chairman of Sections—J. C. RADCLIFFE, Supvr., Industrial Safety Section, Ford Motor Co., Dearborn, Mich.

Vice Chairmen of Sections—I. W. SHUTT, Safety Dir., Jos. E. Seagram & Sons, New York, N. Y.; QUINCY V TUMA, Chief Safety Engr., Texaco, Inc., Houston, Tex.; H. REBHOLZ, Safety Director, The Rath Packing Co., Waterloo, Iowa; N. A. TROMBLEY, Mgr., Industrial Health Services, Chrysler Corp., Detroit, Mich.

Secretary—ROY G. BENSON, Mgr., Industrial Dept., National Safety Council, Chicago, Ill. 60611

Committee Chairmen—

Associations—J. S. CHAPMAN, Mgr. of Safety, Armco Steel Corp., Middletown, Ohio

Audio Visual Aids—A. H. CHRISTIAN, Div. Safety Engineer, FMC Corp., Philadelphia, Pa.

Contests & Awards—C. E. WILSON, Asst. Mgr. of Safety & Workmen's Comp., Bethlehem Steel Corp., Bethlehem, Pa.

Executive—H. C. DAULTON

Nominating—R. M. HARTMAN, Asst. Mgr., Safety & Workmen's Comp., Bethlehem Steel Corp., Bethlehem, Pa.

Occupational Health Hazards—H. W. RAPP, Supt., Travelers Ins. Co., Hartford, Conn.

Occupational Health Nursing—MARGARET BILLY, R.N., United States Steel Corp., Pittsburgh, Pa.

Off-the-Job Safety—MARIE SCOTTI, Mgr. Div. Safety Coordinator, General Foods Corp., Hoboken, N. J.

Physical Hazards—N. MCCALLUM, Supvr. of Safety, Chrysler Corp., Detroit, Mich.

Research Projects—G. B. LEMKE, Vice Pres., Employers Ins. of Wausau, Wausau, Wis.

Standards—E. B. LOCKE, Vice Pres., Engineering Dept., Texas Employers Ins. Assn., Dallas, Texas

Technical Publications—R. M. PRYOR, Dir. Safety & Fire Protection, Phillips Petroleum Co., Bartlesville, Okla.

Training—J. S. SHEIRY, Asst. Vice Pres., Engineering Dept., Aetna Life & Casualty Co., Hartford, Conn.

OFFICERS OF THE

ASSOCIATIONS COMMITTEE

NATIONAL SAFETY COUNCIL 1970-71

Chairman—J S. CHAPMAN—Mgr. of Safety, Armco Steel Corp., Middletown, Ohio; DAN ADAIR, Coord. of Saf. Activities, Pacific Coast Assn. of Pulp & Paper Mfrs., Portland, Ore. (West Coast Area Coord.); WM. ATKINSON, JR., Safety Director, Nat. Mach. Tool Builders Assn., Washington, D. C. (Washington Area Coord.); HARRY BECKER, Safety Director, American Water Works Assn., New York, N. Y. (New York Area Coord.); EARL A. BRATTON, Executive Director, Steel Plate Fabricators Assn., Hinsdale, Ill.; W. G. BRYSON, Saf. Dir., Tidewater Const. Corp., Norfolk, Va.; J. P. CARROLL, Mgr. of Safety, The Society of the Plastics Industry, New York, N. Y.; H. LOUIS CUSTER, Dir. Retirement, Safety & Ins., Natl. Rural Elec. Cooperative Assn., Washington, D. C.; H. J. EIERMANN, Manager, Eng. Dept., Royal Globe Insurance Co., New York, N. Y.; A. L. KLING, Loss Prev. Consultant, Baldwin, N. Y.; IVAN F. LEFORE, Safety Director, Portland Cement Assn., Skokie, Ill. (Midwest Area Coord.); R. L. MOORE, Mgr., Safety Services Dept., National Loss Control Services Corp., Chicago, Ill.; K. L. PATRICK, Dir. of Safety, Western Wood Products Assn., Portland, Ore.; FRED ROGERS, Manager, Admin. Services, Gypsum Assn., Chicago, Ill.; A. SPIEGELMAN, American Ins. Assn., New York, N. Y.; E. TANZ, Asst. Vice Pres., Consolidated Mutual Insurance Co., Brooklyn, N. Y.; M. B. TRAVIS, Corporate Dir. of Safety, Northern Natural Gas Co., Omaha, Neb.; FRANK WOOD, Technical Director, The Salt Institute, Alexandria, Va.

Association Consultants

Washington Area—SANTO J. BARCA, Staff Asst. to the Pres., Can Mfgs. Institute, Washington, D. C.; EDWARD W. BAUMANN, Consulting Director, National Slag Assn., Silver Spring, Md.; GEORGE BURKE, Manager, Tech. Services, Water Pollution Control Fed., Washington, D. C.; JOSEPH H. COLQUITT, Secretary, National Assn. of Refrigerated Warehouses, Washington, D. C.; BEN DAY, Mgr. Technical Services, The Fertilizer Institute, Washington, D. C.; WM. E. HUGHES, Exec. Vice Pres., Composite Can & Tube Institute, Washington, D. C.; HARRY E. KORAB, Technical Director, Natl. Soft Drink Assn., Washington, D. C.; HUGH McCABEY, Manager, Association Dept., Chamber of Commerce of the U S., Washington, D. C.; JOHN MOHAY, Executive Secretary, National Independent Meat Packers Assn., Washington, D. C.

New York Area—RAY C. ELLIS, JR., Dir. of Safety Services, Hotel Safety Trade Group, New York, N. Y.; L. H. GILLETTE, Assistant Executive Vice-President, American Institute of Steel Construction, New York, N. Y.; W. W. PRITSKY, Code Eng., Bldg. Products, The Aluminum Assn., New York, N. Y.; KENNETH S. ROLSTON, Administrative Asst., American Pulpwood Assn., New York, N. Y.; WILLIAM J. STEVENS, President, National Assn. of Photo-Lithographers, New York, N. Y.

Midwest Area—ROBERT E. COLLINS, Exec. Vice President, Southern Cotton Ginners Assn., Memphis, Tenn.; LEONARD FREED, Mgr. Safety & Member Services, Ohio Contractors Assn., Columbus, Ohio; JEFFERSON KEITH, Managing Dir., American Metal Stamping Assn., Cleveland, Ohio; GEORGE KELLER, Dir., Assn. Saf. Services, Employers Ins. of Wausau, Wausau, Wis.; H. McRAE, Bldg. Const. Emp. Assn. of Chicago, Ill.; E. C. MERKLE, Managing Director, Natl. Flexible Packaging Assn., Cleveland, Ohio; HAROLD REGAN, Safety Coordinator, Amer. Paper Inst. Inc., Chicago, Ill.; DONN SANFORD, Memb. Dir., Assoc. Equip. Distributors, Oak Brook, Ill.; ALLEN D. WALTERS, Sec., Amer. Warehouse Men's Assn., Chicago, Ill.

West Coast Area—SIDNEY BIERLY, General Manager, California Fertilizer Assn., Sacra-

mento, Calif.; L. S. CHAPPELEAR, JR., Manager, Tech. Services Dept., Western Oil & Gas Assn., Los Angeles, Calif.; RICHARD FENTON, Executive Vice President, Southern Calif. Plywood Assn., Los Angeles, Calif.; J. M. KAPLAN, Executive Vice President, Greater Los Angeles Chapter, National Safety Council, Los Angeles, Calif.; T. F. KNIGHT, JR., Executive Vice President, California Manufacturers Assn., Los Angeles, Calif.

PAUL E. SHEPPARD, Director, Associations Division, National Safety Council, 425 North Michigan Ave., Chicago, Illinois 60611

PLAN NOW TO ATTEND THE

1971 NATIONAL SAFETY CONGRESS OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

1972

The Congress is always a big week, a worthwhile week for the 13,000 safety people who attend.

1973

At the '71 Congress you can meet other safety people, with the same problems and responsibilities as yourself. You can exchange views and ideas on accident prevention, health, hygiene, and fire prevention . . . on safety in industry, traffic, school, at home and on the farm.

1974

You can see the largest of all safety equipment exhibits at the Congress . . . an opportunity for you to make well-informed buying decisions for your company.

This four-day educational program, planned and presented by the National Safety Council, can be your most thought-provoking, most worthwhile safety experience in 1971.

Make plans early to attend the 1971 Congress and bring the other people in your organization who have safety responsibilities.

FUTURE CONGRESS DATES

1971	October	25-28
1972	Oct. 30 - Nov. 2	
1973	Oct. 29 - Nov. 1	
1974	Sept. 30 - Oct. 3	

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

PB-3375-143-SB

82 75-69T

C

B/T

1970

VOLUME 13

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**LABOR
SAFETY**



NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611

PLAN NOW TO ATTEND THE

1971 NATIONAL SAFETY CONGRESS OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

1972 The Congress is always a big week, a worthwhile week for the 13,000 safety people who attend.

1973 At the '71 Congress you can meet other safety people, with the same problems and responsibilities as yourself. You can exchange views and ideas on accident prevention, health, hygiene, and fire prevention . . . on safety in industry, traffic, school, at home and on the farm.

1974 You can see the largest of all safety equipment exhibits at the Congress . . . an opportunity for you to make well-informed buying decisions for your company.

This four-day educational program, planned and presented by the National Safety Council, can be your most thought-provoking, most worthwhile safety experience in 1971.

Make plans early to attend the 1971 Congress and bring the other people in your organization who have safety responsibilities.

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

FUTURE CONGRESS DATES

1971	October	25-28
1972	Oct. 30 - Nov. 2	
1973	Oct. 29 - Nov. 1	
1974	Sept. 30 - Oct. 3	

OFFICERS OF THE LABOR CONFERENCE NATIONAL SAFETY COUNCIL 1970-71

Vice President for Labor—ARTHUR P. GILDEA, Secretary-Treasurer, United Brewery Workers, Cincinnati, Ohio

Chairman—THOMAS A. DILLON, Business Repr., Machinists District Council 55, Joliet, Ill.

Vice Chairman—EDWARD J. LEGAN, Intl. Repr., Bro. of Electrical Workers, Washington, D. C.

Secretary—ROBERT M. WILKINS, Manager, Labor Department, National Safety Council 425 N. Michigan Ave., Chicago, Ill. 60611.

Representing Labor Conference On NSC Board of Directors—ALAN F. BURCH, Safety Director, Operating Engineers, Washington, D. C.; PAUL H. CONNELLY, Safety Director, United Bro. of Carpenters, Washington D. C.; THOMAS A. DILLON (Labor Conference Chairman); JOHN L. DOWLING, Repr., Education and Welfare, United Steelworkers of America, Toronto, Ont., Canada; CHARLES T. GREENE Director, Industrial Safety Div., D.C. Minimum Wage and Industrial Safety Board, Washington, D. C.; DAVID A. PADDEN, Industrial Hygienist, United Auto Workers, Detroit, Mich.

Members-at-Large- On Board—P. L. SIEMILLER, President Emeritus, Intl. Assn. of Machinists, Washington, D. C.; LLOYD D. UTTE8, Safety Dir., United Auto Workers, Detroit, Mich.; HUNTER P. WHARTON General President, Intl. Union of Operating Engineers, Washington, D. C.

Representing State Labor Departments—ROCCO ALBERTO, Commissioner, State Dept. of Labor and Industries, Boston, Mass.

Committee Chairmen

Awards—ROBERT M. FARRELL, Safety Dir., Operating Engineers Local 150, Countryside, Ill.

Executive—THOMAS A. DILLON (Labor Conference Chairman).

Fire Protection and Public Safety—ROBERT B. ROSS, Business Mgr. Operating Engineers Local 547, Detroit, Mich.

Government, Labor Agencies and Standards—ROCCO ALBERTO (Representing State Labor Departments).

Membership—JOHN L. DOWLING (Board of Directors)

Nominating—HUNTER P. WHARTON (Member-at-Large on Board)

Occupational and Environmental Health—DAVID A. PADDEN, Industrial Hygienist, United Auto Workers, Detroit, Mich.

Off-the-Job Safety and Driver Improvement—GEORGE E. SMITH, Business Mgr., Intl. Bro. of Electrical Workers Local 702, West Frankfort, Ill.

Program—JOE ALGINA, Safety Dir., Seafarers International Union, Boston, Mass.

Promotion of Safety Training and Education—STANLEY J. BUTCHER, Chief, Div. of Curriculum Development, Bureau of Labor Standards, USDL, Washington, D. C.

Publications and Publicity—Co-chairmen: ROBERT KALASKI, Associate Editor, *The Machinist*, Washington, D. C.; REX LAUCK, Assistant Editor, *United Mine Workers Journal*, Washington, D. C.

Past Vice Presidents For Labor—*HARRY READ Asst. to Secretary-Treasurer, AFL-CIO, Washington, D. C. (Oct. 1955-Oct. 1956); P. L. SIEMILLER (Oct. 1956-Oct. 1960)

*Deceased

(Member-at-Large on Board); LLOYD D. UTTER (Oct. 1960-Oct. 1963) (Member-at-Large on Board); HUNTER P. WHARTON (Oct. 1963-Oct. 1967) (Member-at-Large on Board).

Advisory (Past Conference Chairmen)—E. D. SWISHER, Vice President, Oil Chemical and Atomic Workers, Denver, Colo. (Oct. 1960-Oct. 1961); J. GEORGE EICHHORN, Grand Lodge Rep., Intl. Assn. of Machinists, Daytona Beach, Fla. (Oct.- 1965-Oct. 1966); REX LAUCK, Assistant Editor, *United Mine Workers Journal*, Washington, D. C.; ALAN F. BURCH, Safety Dir., Operating Engineers, Washington, D. C. (Oct. 1969-Oct. 1970).

PB-3375-143-SB
75-69T
C
B/I

1970

NA 677

VOLUME 14

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**MARINE
SAFETY**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

OFFICERS OF THE

MARINE SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—JOHN L. HORTON, Asst. Manager, Marine Dept., The Cleveland Cliffs Iron Co., Cleveland Ohio

Vice General Chairman—FRED R. SMITH, President & General Manager, Seattle Stevedore Co., Seattle, Wash.

Vice General Chairman—CAPT. R. P. WALKER, Manager, U. S. Fleet, Texaco, Inc., Port Arthur, Texas

Secretary—JOHN R. BLACKBY, Secretary, American Bureau of Shipping, New York, N.Y.

Assistant Secretary—HUBERT F. CARR, Secretary and Counsel, Moore-McCormack Lines, Inc., New York, N.Y.

Advisory Committee—CAPT. ARTHUR M. KNIGHT (Past General Chairman), Vice President, Mystic Steamship Corp., Boston, Mass.; J. ANDREAE (Retired), New York, N.Y.; DAVID L. BUCHANAN, Supt., Personnel Services, Great Lakes Fleet, United States Steel Corp., Cleveland, Ohio; CAPT. G. H. E. BUXTON (Ret.), Brooklyn, N.Y.; RICHARD W. BERRY, Senior Vice Pres., United Fruit Co., Boston, Mass.

Nominating Committee—(Division Chairman & Advisory Committee) CAPT. ARTHUR M. KNIGHT (Chairman), J. ANDREAE, DAVID L. BUCHANAN, CAPT. G. H. E. BUXTON, BRUNO J. AUGENTI, President, Marine Index Bureau, Inc., New York, N.Y.

Cameron Committees

Technical Publications Committee—CAPT. M. J. SULLIVAN (Chairman), Asst. Vice Pres., Marsh & McLennan, Inc., New York, N.Y.; CAPT. GORDON F. BEAL (Vice Chairman), Manager, Marine Operations, United Fruit Co., Boston, Mass.

Program Committee—ROBERT E. KRATZERT (Chairman), Manager Vessel Personnel & Service, Columbia Transportation Div., Oglebay Norton Co., Cleveland, Ohio; SIDNEY G. VASS (Vice Chairman), Safety Director, Marine Transport Lines, Inc., New York, N.Y.

Membership Committee—A. B. RANDALL, JR. (Chairman), Safety Officer, Marine Dept., Humble Oil & Refining Co., Houston, Texas

Newsletter Editor—COMDR. JOHN A. PACKARD, USCG, (Ret.), Director, Public Relations, Lake Carriers Assn., Cleveland, Ohio

Research Committee—CAPT. S. FRASER SAMMIS (Chairman), Chief Surveyor, Technical National Cargo Bureau, Inc., New York, N.Y.

Operational Safety, Inc., Port Washington, N.Y.; R. SNOW (Vice Chairman), Safety Engineer, Sea-Land Service, Inc., Elizabeth, N. J.

Training Committee—CAPT. GEORGE D. BARLOW (Chairman), Director, Safety Bureau, New York Shipping Assn., Inc., New York, N.Y.; CAPT. ROBERT H. SMITH (Vice Chairman), Head, Ship Safety Division, Hull & Cargo Surveyors, Inc., New York, N.Y.

Off-the-Job-Safety Committee—KARL F. EISMEIER (Chairman), Vice Pres., Johnson & Higgins, New York, N.Y.; CAPT. R. J. MURRAY (Vice Chairman), Manager, Vessel Operations, Sea-Land Service, Inc., Elizabeth, N. J.

Associations—CARL E. McDOWELL (Chairman), Executive Vice President, American Institute of Marine Underwriters, New York, N.Y.; C. J. BOURKE, Coast Directors, Accident Prevention Dept., Pacific Maritime Assn., San Francisco, Calif; BRAXTON B. CARR, Pres., The American Waterways Operators, Inc., Washington, D.C.; E. M. HOOD, Pres., Shipbuilders Council of America, Washington, D.C.; JAMES J. REYNOLDS, President, American Institute of Merchant Shipping, Washington, D.C.; *A. L. CHOPIN, Chairman of the Board, New York Shipping Assn., New York, N.Y.; V. ADM. PAUL E. TRIMBLE, USCG, (Ret.), Pres., Lake Carriers Assn., Cleveland, Ohio

Special Activities

Best Paper Awards Committee—BRUNO J. AUGENTI (Chairman), Pres., Marine Index Bureau, Inc., New York, N.Y.; REAR ADM. WILLIAM F. REA, III, (Vice Chairman-Presentation), Chief, Office Merchant Marine Safety, USCG, Washington, D.C.

Public Relations Committee—CAPT. ROBERT E. HART, USN. (Ret.) (Chairman), Executive Vice President, Marine Index Bureau, Inc., New York, N.Y.; MEREDITH S. BUEL (Vice Chairman), Public Relations Director, American Institute of Merchant Shipping, Washington, D.C.

Historian—C. BRADFORD MITCHELL, Maritime Consultant, Brooklyn, N.Y.

Safety of Life at Sea Committee—ADM. CHESTER R. BENDER (CHAIRMAN), Commandant, USCG, Washington, D.C.; REAR ADM. WILLIAM F. REA, III, Chief, Office Merchant Marine Safety, USCG, Washington, D.C.; REAR ADM. RODERICK Y. EDWARDS, Chief, Office of Public & International Affairs, USCG, Washington, D.C.; REAR ADM. HALERT C. SHEPHEARD, USCG (Ret.), Washington, D. C.

Ship Safety Achievement Awards—CAPT. JONES F. DEVLIN, JR. (Chairman), Maritime Consultant, New York, N.Y.; CAPT. THOMAS A. KING (Vice Chairman), Eastern Region Director, U.S. Dept. of Commerce, Maritime Administration, New York, N.Y.

Special Representatives—CAPT. THOMAS A. KING (Chairman), Eastern Region Director, U. S. Dept. of Commerce, Maritime Administration, New York, N.Y.; HENRY A. MORAN (Vice Chairman), Safety Director, Military Sealift Command, Washington, D.C.

Statistics and Contests Committee—LARS N. PEDERSON (Chairman), Safety Co-ordinator, Terminal Operations, United Fruit Co., New Orleans, La.

Government Representatives Committee—V. ADM. A. R. GRALLA, US Navy Commander, Military Sealift Command, Washington, D.C.; LT. GEN. F. J. CLARKE, US Army, Chief of Engineers, Dept. of the Army, Washington, D.C.; REAR ADM. DON A. JONES, USESSA, Director, Coast & Geodetic Survey, Rockville, Md.

Barge & Towing Vessel—RALPH A. GUFFEY (Chairman), Safety Director, A. L. Mechling Barge Lines, Inc., Joliet, Ill.; LEE D. TRACY (Vice Chairman), Director of Loss Control, Ingram Corp., New Orleans, La.; ROBERT L. GRAY (Membership), Manager, River Operations, Ashland Oil & Refining Co., Ashland, Ky.; McVEY F. WARD (Program), Southern Regional Representative, The American Waterways Operators, Inc., New Orleans, La.

Great Lakes—JOHN W. MANNING (Chairman), Supt. of Operations, Steamship Div., The Hanna Mining Co., Cleveland, Ohio; ROBERT E. KRATZERT (Vice Chairman), Manager, Vessel Personnel & Service, Columbia Transportation Div., Oglebay Norton Co., Cleveland, Ohio; F. WARREN SEEBALD (Membership), Supervisor Safety, Great Lakes Fleet, U.S. Steel Corp., Cleveland, Ohio; MATTHEW C. O'HEARN (Program), Vice President, Wilcox, Peck & Hughes, Inc., Cleveland, Ohio

Passenger & Dry Cargo—CAPT. R. N. LE PAGE (Chairman), Mgr., Insurance, Farrell Lines, Inc., New York, N.Y.; CAPT. R. J. ANDERSON (Vice Chairman), Asst. to Vice Pres., Operations, Prudential Lines, Inc., New York, N.Y.; CAPT. C. H. WARING, USCG (Ret.), (Membership), Accident Prevention Div., Lykes Bros. Steamship Co., Inc., New Orleans, La.; CAPT. H. R. ROSENGREN (Program), Technical Assistant, National Cargo Bureau, New York, N.Y.

Shipbuilding & Repair—LOYD J. PICCIN (Chairman), Manager of Safety, Sun Shipbuilding & Dry Dock Co., Chester, Pa.; JAMES R. O'DONNELL (Vice Chairman), Maritime Safety Consultant, New Orleans, La.; LOYD A. BEERS (Membership), Bath Iron Works Corp., Bath, Maine; AUSTIN SHEAN (Program Co-Chairman), Director of Safety & Comp., Todd Shipyards Corp., New York, N.Y.; H. H. HOWARD (Program Co-Chairman), Asst. to Vice President, Bethlehem Steel Corp., New York, N. Y.

Stevedoring—THEODORE R. ALFF (Chairman), Director of Safety, Nacirema Operating Co., Inc., New York, N.Y.; ALBERT W. CASH (Vice Chairman), Safety Director, International Terminal Operating Co., New York, N.Y.; EDWARD MCINTYRE (Membership), Safety Director, Pittston Stevedoring Corp., New York, N.Y. SAMUEL A. CLAUSS (Program), Safety Director, Steamship Trade Association of Baltimore, Inc., Baltimore, Md.

Tankship—PHILLIP NEAL (Chairman), Marine Safety Advisor, Mobil Oil Corp., New York, N.Y.; DONALD G. BROWN (Vice Chairman), Manager—U.S. Fleet, Gulf Oil Co., Transportation, New York, N.Y.; HAROLD HARVEY (Membership), Safety Director, Chevron Shipping Co., San Francisco, Calif.; SIDNEY G. VASS (Program), Safety Director, Marine Transport Lines, Inc., New York, N.Y.

Discussion Groups

Atlantic Area—NICHOLAS DIARCANGEL (Chairman), Acting District Supervisor, Work Place Standards Admin., U. S. Dept. of Labor, New York, N. Y.; AUSTIN SHEAN (Vice Chairman), Director Safety & Comp., Todd Shipyards Corp., New York, N.Y.

Great Lakes Area—IAN CARSWELL (Chairman), Safety Director, Wilson Marine Transit Co., 2100 Illuminating Bldg., Cleveland, Ohio; MICHAEL J. MURPHY (Vice Chairman), Fleet Safety Director, Pickands Mather & Co., Cleveland, Ohio

Gulf Area (Cargo)—CAPT. OLLIE DAVIS (Chairman), Operations Manager, Gulf & South American Steamship Co., New Orleans, La.

Gulf Area (Tanker)—Open

Inland Waterways Area—H. S. STRASSNER (Chairman), Safety Director, National Maritime Services, Inc., Hartford, Ill.; CHARLES H. CHAPIN (Vice Chairman), Marine Supt., Material Service Corp., Subsidiary of General Dynamics, Lockport, Ill.

Pacific Area—CAPT. THEODORE W. ANDERSON (Chairman), President, Joshua Handy Corp., Los Angeles, Calif.; VERN NEWTON (Vice Chairman), Asst. Coast Director, Pacific Maritime Assn., San Francisco, Calif.

National Safety Council Staff Representative—RALPH M. COE, Staff Representative, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

1970

VOLUME 15

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

METALS



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

areas where they can be easily reached at all times. A long-handled shovel shall be provided at each receptacle to afford a ready means of laying the sand or powder around the perimeter of the fire. The implements shall be made of aluminum or other non-ferrous material.

Nearly all vaporizing liquid fire-fighting agents react violently with burning aluminum, and they shall not be used where aluminum dust fires may occur.

Water streams or liquid sprays of various kinds that vaporize quickly are highly dangerous; they cause dust to be thrown into the air, and the ignited particles instantly cause a violent explosion. For the same reason, any mechanical agitation or disturbance of the burning dust must be avoided. For these reasons, control of the activities of an outside fire-fighting department is important since this hazard in fighting aluminum dust fires may not be recognized.

Recommended Clothing. Outer clothing of a porous or loose weave shall not be worn since dust will easily accumulate on and even in this type of cloth. The material should be closely woven, trousers shall not have cuffs, and aprons or jackets shall not have pockets. Clothing with frayed edges should be avoided.

Chemically treated clothing that will not support combustion is recommended. This type of clothing may require retreatment after a number of washings.

Further Precautions. Finally, if you believe that your manufacturing procedure is developing fines with explosion potential, you will want to make a positive determination of the degree of your hazard. We suggest that you contact the U. S. Bureau of Mines and, although they do not do this type of testing anymore, they have had a broad experience in the past. They can tell your laboratory personnel how to run such an analysis or refer you to a facility that can make the proper tests.

An important factor that must not be forgotten is that a change in the mechanics of your processes, such as speeds, fineness of the abrasive medium, lubricating material, or a change in the type of alloy being processed may well create a sufficient difference in the particle size of the fines to develop a hazard potential that did not previously exist. Any change of the type described or change that could result in fines of a smaller size being generated should precipitate immediate re-analysis of the fines.

OFFICERS OF THE

METALS SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—STEVE COLLINS, Gen. Supervisor Safety, Training & Comm. Rel., Midwest Steel Div., National Steel Corp., Portage, Ind.

First Vice Chairman—J. E. SPROWLS, Safety Manager, Caterpillar Tractor Co., Peoria, Ill.

Second Vice Chairman—J. B. ANDERSON, Sen. Safety Engr., Republic Steel Corp., Cleveland, Ohio

Third Vice Chairman—G. H. REILLY, Safety Engr. Admin., United States Steel Corp., Pittsburgh, Pa.

Secretary—B. BROWN, Supvr. of Safety, Youngstown Sheet & Tube Co., East Chicago, Ind.

Staff Representative—E. E. KOCH, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

Congress Program Committee—R. F. SCHROEDER (Chairman), Mgr., Indus. Prog., Joseph T. Ryerson & Son, Chicago, Ill.; WILLIAM M. SMITH, Mgr., Health Services, National Steel Corp., Weirton, W. Va.; H. W. GILBERG, Works Safety Admin., Jones & Laughlin Steel Corp., Aliquippa, Pa.; E. V. GRUND, Division Manager, Safety & Prot. Service, Kaiser Aluminum & Chemical Corp., Oakland, Calif.

Newsletter Editor—WM. FAISON, Gen. Supvr. Safety, United States Steel Corp., Chicago, Ill.

Off-the-job Committee—T. T. PINDER (Chairman), Safety Dir., Kennecott Copper Corp., Utah Copper Div., Salt Lake City, Utah; D. E. GLEGHORN, Safety Mgr., Motor Wheel Corp., Lansing, Mich.; A. H. GOELZENLEUCHTER, Wks. Saf. & Prot. Serv. Supvr., Kaiser Alum. & Chemical Corp., Ravenswood, W. Va.

Special Activity & Publicity Committee—H. W. GILBERG (Chairman), Works Safety Admin., Jones & Laughlin Steel Corp., Aliquippa, Penn.; R. R. HOFFMAN, Mgr. of Safety, Caterpillar Tractor Co., Peoria, Ill.

Foundry Industry Committee—W. H. DECKER (Chairman), Safety Dir., Central Foundry Div., Danville Plant, General Motors Corp., Danville, Ill.; THOMAS L. HEWITT, Vice President, Indust. Rel. and Pers., Vulcan Mold & Iron Co., Latrobe, Penn.; GARY ROBINSON, Safety Dir., Pontiac Motor Div., Pontiac, Mich.; FRANK W. NUNAN, Safety Supvr., Caterpillar Tractor Co., Mapleton, Ill.; JOHN P. HOPKINS, Dir. of Pers. Admin., Lakey Foundry Corp., Muskegon, Mich.; D. E. GLEGHORN, Safety Mgr., Motor Wheel Corp., Lansing, Mich.

Steel Service Center Committee—P. M. WALTER (Chairman), Vice President National Steel Service Center, Inc., Evanston, Ill.; EDWARD R. PATTERSON, President, Patterson Steel Co., Tulsa, Okla.; MARVIN P. SCHRAMM, Vice President, A. M. Castle & Co., Franklin Park, Ill.; A. D. REESE, II, Manager of Labor Rel., United States Steel Supply Div., Chicago, Ill.

Industrial Hygiene Committee—JOHN A. JANOUS (Chairman), Dir.-Indust. Hlth. & Saf. Serv., American Iron and Steel Institute, Washington, D. C.; D. L. WEBSTER, Industrial Health Eng., Bethlehem Steel Corp., Bethlehem, Penn.; WILLIAM M. SMITH, Mgr. Health Services, National Steel Corp., Weirton, W. Va.; W. E. SEBESTA, Chief Industrial Hygienist, Republic Steel Corp., Research Center, Independence, Ohio

Technical Publications Committee—R. D. FRANTER (Chairman), Steel Group Safety Engr., Middletown, Ohio; HOWARD L. SEIMETZ, Supervisor of Safety, Central Alloy District, Republic Steel Corp., Canton, Ohio; JOHN A. JANOUS, Dir.-Indust. Hlth. & Saf. Serv., American Iron & Steel Institute, Washington, D. C.; ALEX GUZOWSKY, Safety Engineer, C. F. & I. Steel Corp., Pueblo, Colo.; H. A. POLK, Supt. Safety, Kaiser Steel Corp., Fontana, Cal.; G. F. GRACE, Sales Manager, Columbus McKinnon Chain Corp., Tonawanda, N. Y.; RICHARD L. KESLING, Safety Eng., Bethlehem Steel Corp., Bethlehem, Penn.

Research and Advisory Committee—*J. PATLYEK (Chairman), Mgr. Indust. Rel., East Chicago Works, Blaw-Knox Company, East Chicago, Ind.; *C. P. VORHES, Mgr. of Safety, Jones & Laughlin Steel Corp., Pittsburgh, Penn.; *B. D. KENT, Safety & Security Supvr., Aluminum Company of America, Davenport, Iowa; *W. T. McLEAN, Gen. Safety Engr., Gary Works, United States Steel Corp., Gary, Ind.; *G. LUNDIE, Director, Safety & Plant Prot., Inland Steel Co., East Chicago, Ind.; *CHARLES E. WILSON, Asst. to Mgr. of Safety and Wkms. Comp., Bethlehem Steel Corp., Bethlehem, Penn.; *J. W. TYSSE, Manager of Safety, Republic Steel Corp., Cleveland, Ohio; *JAMES G. CULLEN, Div. Safety Eng., Ford Motor Co., Engine & Foundry Div., Dearborn, Mich.; *G. J. EIGENBROD, Safety Dir., McLouth Steel Corp., Trenton, Mich.

Training and Audio Visuals Comm.—DEAN A. DEXTER (Chairman), Safety Supvr., Chicago Bridge & Iron Co., Oak Brook, Ill.; *W. T. McLEAN, Gen. Safety Engr., Gary Works, United States Steel Corp., Gary, Indiana; D. L. JOHNSON, Vice President, Penn. Mfg. Assn. Insurance Co., Chestnut East Building, Philadelphia, Penn.; R. M. COWDRICK, Supvr. of Safety, Bethlehem Steel Corp., Bethlehem, Penn.; RICHARD L. KESLING, Safety Engineer, Bethlehem Steel Corp., Bethlehem, Penn.

Non-Ferrous Industry Committee—E. O. PETRIE (Chairman), Safety Coordinator, Huntington Alloy Products Div., International Nickel Co., Huntington, W. Va.; JOHN A. TURK, Mgr., Safety & Env. Health, U. S. Metals Refining Co., Carteret, N. J.; J. E. NICHOLS, Dir. of Safety, Reynolds Metals Co., Reynolds Metals Bldg., Richmond, Va.; JAMES J. RYAN, Gen. Safety Eng., American Smelting & Refining Co., Denver, Colo.; RAY A. FROHL, Safety & Security Supvr., Ormet Corp., Hannibal, Ohio; J. E. ROUS, Plt. Safety Engr., Kennecott Refining Corp., Baltimore, Md.; J. T. MORTIMER, Safety Dir., Kennecott Copper Corp., Ray Mines Division, Hayden, Ariz.; R. D. WOODYARD, Loss Prev. Supt., Olin Aluminum Co., Sheet & Plate Operations, Hannibal, Ohio; R. H. WATSON, Mgr. of Safety, Aluminum Co. of America, Pittsburgh Penn.

Nominations Committee—*J. PATLYEK (Chairman), Manager, Industrial Relations, East Chicago Works, Blaw-Knox Company, East Chicago, Ind.; *C. P. VORHES, Manager of Safety, Jones & Laughlin Steel Corp., Pittsburgh, Penn.; *B. D. KENT, Safety & Security Supervisor, Aluminum Company of America, Davenport, Iowa.

Membership Committee—W. J. SCHWAGER (Chairman), Supvr. of Safety, The Youngstown Sheet & Tube Co., Youngstown, Ohio.

Associations Committee—R. R. Hoffman (Chairman), Manager of Safety, Caterpillar Tractor Co., Peoria, Ill.; E. A. BRATTON, Executive Dir., Steel Plate Fabr. Assoc., Hinsdale, Ill.; JOHN A. JANUS, Dir.-Health & Safety Services, American Iron and Steel Institute, Washington, D. C.

Steel Industry Committee—L. WOZNY, JR. (Chairman), Plant Safety Eng., Bethlehem Steel Corp., Sparrows Point, Md.; CLIFTON W. FELLOWS, Supvr. Indus. Safety Sect., Steel Division, Ford Motor Co., Dearborn, Mich.; WM. FAISON, Gen. Supvr. Safety, United States Steel Corp., Chicago, Ill.; W. R. ROBLIN, Manager of Safety, Allegheny Ludlum Steel Corp., Pittsburgh, Pa.; J. DEFOREST, Industrial Relations Director, International Steel Co., Evansville, Ind.

Fabricating Industry Committee—A. R. SCHUSTER (Chairman), Corp. Safety Dir., Allied Structural Steel, Industrial Construction Div., Minneapolis, Minn.; E. A. BRATTON, Executive Dir., Steel Plate Fabr. Assoc., Hinsdale, Ill.; R. CIZORT, Safety Dir., Frontier Steel, Muskogee, Okla.

Plant Prot. and Safety Committee—R. G. DITTMAR (Chairman), Plant Prot., Inland Steel Company, East Chicago, Ind.; R. G. DITTMAR, Corp. Safety Mgr., Interlake Steel Corp., Chicago, Ill.

West Coast Committee—R. C. BECKSTEAD (Coordinator), Dir. Safety & Tech. Empl., American Smelting & Refining Co., Salt Lake City, Utah; J. W. ARMSTRONG, Div. Mgr. Safety & Prot. Serv., Kaiser Aluminum & Chemical Corp., Oakland, Cal.; R. S. JAMAR, Supvr. of Safety, Bethlehem Steel Corp., Seattle, Wash.; H. K. LAMBIE, Dir. of Safety & Prot. Serv., Kaiser Aluminum & Chemical Corp., Oakland, Cal.; P. P. PELTON, JR., Safety Engr., Bethlehem Steel Corp., Pinole Point Works, Richmond, Cal.; T. T. PINDER, Safety Dir., Kennecott Copper Corp., Utah Copper Div., Salt Lake City, Utah; HARRY SCHWARTZ, President, Washington Pipe & Steel Co., Seattle, Wash.; ROBERT J. WAYNE, Dir. of Labor Rel. and Safety, Kaiser Steel Corp., Oakland, Cal.; EDWIN S. WYNKOOP, Bethlehem Steel Corp., Pacific Div., Los Angeles, Cal.

*Past General Chairman

1970

VOLUME 16

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

MINING



NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611

1970

VOLUME 17

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**MOTOR
TRANSPORTATION**

COMMERCIAL VEHICLE
SECTION

SCHOOL TRANSPORTATION
SECTION

TRANSIT SECTION



NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611

MEMBERS OF THE MOTOR TRANSPORTATION CONFERENCE NATIONAL SAFETY COUNCIL 1970-71

Vice President for Motor Transportation — WILLIAM L. FAYLE

Chairman — STANLEY A. OSSMAN

First Vice Chairman — BERTRAM L. WHEAT

Second Vice Chairman — ORVILLE G. PARRISH

Chairman, Commercial Vehicle Section — JACK W. RING

Chairman, Transit Section — FRANK A. JOHNSON

Chairman, School Transportation Section — MORRIS W. RANNELS

Board of Directors Representing the Motor Transportation Conference — HOWARD M. BAKER, KENNETH N. BEADLE, CARROLL W. BOYCE, CLAYTON D. CALKINS, JOHN B. CARNAHAN, WILLIAM L. FAYLE, ALBERT L. HAUCK, C. BILL LEMON, STANLEY A. OSSMAN, ORVILLE G. PARRISH, LORNE F. PURVES, KARL SCHULZE, DORWIN L. WILLIAMSON

Immediate Past Chairman — CARROLL W. BOYCE

Honorary Life Members — EDWARD J. BUHNER, PAUL H. COBURN, ERNEST G. COX, COLIN DOBELL, JACK HIGHTOWER (Deceased), HAROLD HOSEA, WILLARD G. MACINTOSH, ARTHUR J. NAQUIN

Manager, Motor Transportation Department — ALFRED C. FINCH

Staff Secretary — JOHN J. FLAHERTY

Members of the Motor Transportation Conference — HOWARD M. BAKER, Director, Security Department, Montreal Urban Community Transit Commission, Montreal, Quebec, Can.; KENNETH N. BEADLE, Vice President, Safety, Pacific Intermountain Express, Oakland, Calif.; ROBERT G. BEGEMAN, Vice President, Engineering Services, Transport Insurance Company, Dallas, Tex.; FRED M. BISHOFF, Safety Director, United States Post Office Department, Washington, D.C.; GEORGE E. BLUEL, Superintendent of Safety, Burlington Truck Lines, Inc., Galesburg, Ill.; WILLIAM P. BOWLING, Director, Safety and Claims, Continental Trailways, Washington, D. C.; CARROLL W. BOYCE, Director, Motor Truck Manufacturers Division, Automobile Manufacturers Association, Inc., Washington, D. C.; HAROLD BRANDALEONE, M.D., F.A.C.P., New York, N. Y.; CLAYTON D. CALKINS, Manager, Safety and Personnel, Pacific Motor Trucking Company, San Francisco, Calif.; SYLVESTER A. CARIA, President, Twin City Lines, Inc., Minneapolis, Minn.; JOHN B. CARNAHAN, Vice President, Armour and Company, Chicago, Ill.; THOMAS M. CHENEY, President, North American Professional Driver Education Association, Los Angeles, Calif.; WILLIAM E. COTNER, General Manager, National Truck Leasing System, Chicago, Ill.; JOSEPH J. COTTRELL, President, Cottrell Bus Service, Inc., Buffalo, N. Y.; ROBERT E. CREWS, General Manager, Whitfield Bus Lines, Inc., Las Cruces, N. M.; JOHN A. DEPEW, Safety Consultant to Motor Transportation Industry, Rock Island, Ill.; CAMPBELL G. DEWEY, Loss Control Specialist, American Mutual Insurance Alliance, Chicago, Ill.; ROBERT P. DONLEY, President, Weldon, Inc., Columbus, Ohio; JOE D. DOUGLAS, Manager, Safety and Training, Central Motor Lines, Inc., Charlotte, N. C.; EDWARD J. EMOND, Director of Automotive

Safety and Regulatory Relations, Armour and Company, Chicago, Ill.; WILLIAM L. FAYLE, President, Transportation Division, Burlington Industries, Inc., Burlington, N. C.; DOUGLAS M. FERGUSON, Director of Safety Services, Nationwide Insurance Companies, Columbus, Ohio; WILLIAM R. FISTE, Chief, Regulations Division, Bureau of Motor Carrier Safety, Washington, D. C.; HARRY D. FLETCHER, Head, Institute of Public Safety, The Pennsylvania State University, University Park, Pa.; WILLIAM M. FOLEY, Director of Safety, Consolidated Freightways, Chicago, Ill.; ROBERT J. FORMAN, Vice President, Safety and Personnel, Greyhound Lines, Inc., Chicago, Ill.; C. DEANE FORTUNE, Director of Safety and Security, Transportation Division, Burlington Industries, Inc., Burlington, N. C.; WILLIAM L. FRIGON, Asheville, N. C.; RICHARD V. GALLAGHER, Executive Director, International Taxicab Association, Lake Forest, Ill.; WILLIAM A. GARTLAND, Manager, Engineering Services, Borg and Beck Division Borg-Warner Corporation, Detroit, Mich.; ROBERT E. GOCKE, Vice President, Industrial Relations and Personnel, The Greyhound Corporation, Chicago, Ill.; RICHARD GORMAN, Supervisor, Loss Control, Allstate Insurance Company, Northbrook, Ill.; ROBERT I. GRIEGO, Safety Director, New Mexico State Highway Department, Santa Fe, N. M.; DAVID O. HARROLD, Staff Engineer, International Harvester Company, Fort Wayne, Ind.; ALBERT L. HAUCK, Vice President, Marketing and Public Relations, Transportation Underwriters, Division of Baldwin and Lyons, Inc., Indianapolis, Ind.; WILLIAM P. HEADLEY, Assistant Safety Manager, Columbus Gas of Ohio, Inc., Columbus, Ohio; BEN F. HEINZ, Director, Safety Engineering Services, Transport Indemnity Company, Los Angeles, Calif.; WILLIAM R. HOLLEY, Safety Director, National Accounts Department, Farmers Insurance Group, Los Angeles, Calif.; GLENN R. JAMES, Chief Instructor, Bi-State Transit System, St. Louis, Mo.; WILLIAM E. JOHNS, Director of Safety, American Trucking Associations, Inc., Washington, D. C.; FRANK A. JOHNSON, Superintendent of Training, Accident Studies and Employment, Chicago Transit Authority, Chicago, Ill.; JOSEPH M. KAPLAN, Executive Vice President, Greater Los Angeles Chapter, National Safety Council, Los Angeles, Calif.; ALFRED E. KENDRICK, JR., Manager, Safety and Training, South Carolina Electric and Gas Company, Columbia, S. C.; FINLEY S. LAKE, Director of Safety, Interstate Motor Freight System, Grand Rapids, Mich.; C. BILL LEMON, Director, School Transportation and Coordinator of Administrative Services, Santa Fe, N. M.; JAMES D. LITTELL, Director of Transportation, Dallas County Schools, Dallas, Tex.; BILL G. LOSHBOUGH, Supervisor, School Bus Safety and Driver Education, Santa Fe, N. M.; J. WYLIE LUMPKIN, Manager, Safety Services, REA Express, New York, N. Y.; GERALD A. McCALL, Director of Field Services, Nebraska State Department of Education, Lincoln, Neb.; JOHN J. McCORMACK, Special Representative, Transportation Underwriters, Indianapolis, Ind.; CHARLES C. MILLER, Secretary RMA, Chairman RMA Tire Division, Rubber Manufacturers Association, Washington, D. C.; THOMAS F. MOORE, Safety Director, Carolina Freight Carriers Corporation, Cherryville, N. C.; WILLIAM J. MORGAN, Director of Safety, Cincinnati Transit, Inc., Cincinnati, Ohio; RUSSELL L. MORRIS, Director of Transportation, John Labatt Limited, London, Ontario, Can.; FREDERICK H. MUELLER, Director of Research, National Association of Motor Bus Owners, Washington, D. C.; GEORGE C. NIELD, Assistant for Technology, Motor Vehicle Programs, National Highway Safety Bureau, Washington, D. C.; RUSSELL R. NOBLE, Chief Engineer, Truck Safety, Chrysler Corporation, Dodge Truck Operations, Detroit, Mich.; VINCENT L. O'DONNELL, Managing Director, Private Carrier Conference, Inc., American Trucking Association, Washington, D. C.; JOHN J. O'REILLY, Safety Supervisor, Port Authority, Trans Hudson Corporation, New York, N. Y.; STANLEY A. OSSMAN, Vice President, Safety, Greyhound Lines, West, San Francisco, Calif.; ORVILLE G. PARRISH, Director of Pupil Transportation, New Jersey State Department of Education, Trenton, N. J.; HAROLD L. PELLEGRINO, Assistant Director of Safety, Kansas Highway Commission, Topeka, Kan.; ALBERT L. PHILLIPS, Manager, Employee Safety, American Gas Association, Inc., New York, N. Y.; JOHN L. PICKENS, Secretary, Hartford Insurance Group, Hartford, Conn.; FRANCIS E. PIPER, Major, Illinois State Police, Springfield, Ill.; LORNE F. PURVES, Superintendent of Transportation and Safety, Toronto Star Limited, Toronto, Ontario, Can.; MORRIS W. RANNELS, State Coordinator of Safety Education and Transporta-

tion, Maryland State Department of Education, Baltimore, Md.; DWIGHT E. KAT, Vice President, Insurance, Safety and Security, Pilot Freight Carriers, Inc., Winston-Salem, N. C.; EDWARD M. REILLY, JR., Manager, Loss Prevention Department, Beneficial Insurance Group, St. Louis, Mo.; JACK W. RING, Manager, Safety Division, Land O'Lakes, Inc., Minneapolis, Minn.; MAX L. RISE, General Superintendent of Transportation, Southern California Rapid Transit District, Los Angeles, Calif.; ROBERT H. RIVARD, Director of Safety, Briggs Transportation Company, St. Paul, Minn.; RICHARD W. RUDISILL, Safety Supervisor, Southeastern Pennsylvania Transportation Authority, Philadelphia, Pa.; WARREN E. RUMSFIELD, President, North Shore Driving School, Chicago, Ill.; ROBERT H. RUSH, Director of Transportation Services, Board of Public Instruction, Volusia County, Deland, Fla.; THOMAS W. RUST, Director of Safety, Yellow Freight System, Inc., Kansas City, Mo.; HERBERT J. SCHEUER, Assistant to Executive Vice President, American Transit Association, Washington, D. C.; KARL SCHULZE, Chief, Vehicle Support Division, National Highway Safety Bureau, Washington, D. C.; THURMAN D. SHERARD, Highway Engineer, Western Highway Institute, San Francisco, Calif.; EDWARD J. SLINGERLAND, Safety Director, Seattle Transit System, Seattle, Wash.; HAROLD L. SMITH, President, Harold L. Smith Driver Improvement Institute, Inc., San Diego, Calif.; T. W. SMITH, Manager of Safety and Personnel, Southern Pacific Transport Company, Dallas, Tex.; DAVID H. SOULE, Safety Management Specialist National Highway Safety Bureau, Washington, D. C.; KENNETH A. STONEX, Executive Engineer, Automotive Safety Engineering, General Motors Engineering Staff, Warren, Mich.; J. WISTAR STOWE, President and General Manager, Lynchburg Transit Company, Lynchburg, Va.; DAVID L. STROEHMANN, Vice President, Stroehmann Brothers Company, Williamsport, Pa.; JAMES B. SUMMERS, Vice President, Sales, Superior Coach Corporation, Lima, Ohio; FRANK J. SWEENEY, JR., Assistant Vice President, Associated Transport, Inc., New York, N. Y.; G. WRAY THOMAS Assistant General Manager for Operations, Southeastern Pennsylvania Transportation Authority, Philadelphia, Pa.; ROY W. WALTER, State Director, School Transportation and Driver Education, West Virginia Department of Education, Charleston, W. Va.; BERTRAM L. WHEAT, Vice President, Loss Prevention, Eastern Express, Inc., Terre Haute, Ind.; JOHN C. WHITE, Managing Director, Private Truck Council of America, Washington, D. C.; THOMAS H. WILKINSON, Army Director of Safety, Office Deputy Chief of Staff for Personnel, Department of the Army, Washington, D. C.; DORWIN L. WILLIAMSON, Superintendent of Training and Safety, Cleveland Transit System, Cleveland, Ohio; DANIEL G. WISOTZNEY, Consultant, Colorado Department of Education, Denver, Colo.; GORDON D. WIXOM, Director, Pupil Transportation, Office of Superintendent of Public Instruction, Springfield, Ill.; WILLIS H. WOOD, San Bernardino, Calif.; MENFORD H. WOOTEN, Safety Director, Metro Dade County Transit Authority, Miami, Fla.; CHARLES C. WREN, General Manager, Illinois School Bus Company, Inc. and Cook County School Bus Company, Crestwood, Ill.; PHILIP W. YOUNG, Vice President, Safety, Personnel and Claims, Dealers Transit, Inc., Chicago, Ill.

Honorary Life Members — EDWARD J. BUHNER, Louisville, Ky.; PAUL H. COBURN, Director of Personnel, Pilot Freight Carriers, Inc., Winston-Salem, N. C.; ERNEST G. COX, Arlington, Va.; COLIN DOBELL, Gibson, B.C., Can.; HAROLD R. HOSEA, Chevy Chase, Md.; WILLARD G. MACINTOSH, Stuart, Fla.; ARTHUR J. NAQUIN, Safety Consultant, New Orleans, La.

FB-3375-143-SB
75-69T
C
B/T

PLAN NOW TO ATTEND THE

1971 NATIONAL SAFETY CONGRESS OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

1972 The Congress is always a big week, a worthwhile week for the 13,000 safety people who attend.

1973 At the '71 Congress you can meet other safety people, with the same problems and responsibilities as yourself. You can exchange views and ideas on accident prevention, health, hygiene, and fire prevention . . . on safety in industry, traffic, school, at home and on the farm.

1974 You can see the largest of all safety equipment exhibits at the Congress . . . an opportunity for you to make well-informed buying decisions for your company.

This four-day educational program, planned and presented by the National Safety Council, can be your most thought-provoking, most worthwhile safety experience in 1971.

Make plans early to attend the 1971 Congress and bring the other people in your organization who have safety responsibilities.

FUTURE CONGRESS DATES

1971	October	25-28
1972	Oct. 30 - Nov. 2	
1973	Oct. 29 - Nov. 1	
1974	Sept. 30 - Oct. 3	

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

1970

Surv
V. 18
1970

VOLUME 18

SL-0 NATIONAL SAFETY CONGRESS
SK-0 TRANSACTIONS

SL-0 OCCUPATIONAL
HEALTH
NURSING and
HOSPITAL SAFETY



NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611

(National Safety Council)

OFFICERS OF THE HOSPITAL SECTION NATIONAL SAFETY COUNCIL 1970-71

General Chairman—GEORGE PIERCE, Director of Safety, Little Company of Mary Hospital, Evergreen Park, Ill.

1st Vice Chairman—DANIEL BARRETT, Security Chief, Tinley Park Mental Health Center, Tinley Park, Ill.

Codes and Standards Committee—PAUL R. WOZNIAK (Chairman), Provincial Executive Director, Little Company of Mary Hospital, Evergreen Park, Ill.; PATRICK S. DE MOON, Assistant Administrator, Central Community Hospital, Chicago, Ill.; JOHN E. KLINGENSMITH, Bowie, Md.; ELMER J. MICHAELS, Personnel Director, Edward Hospital, Naperville, Ill.; FRANK SCALZI, Director of General Services, Little Company of Mary Hospital, Torrance, Calif.

Disaster—W. B. MONTGOMERY (Chairman), Director of Personnel Relations, Bethesda Hospital, Zanesville, Ohio; PAUL E. GOODWIN, Director of Safety & Security, The Lutheran Hospital, Fort Wayne, Ind.; WILLIAM W. JOY, University Health Service, Ann Arbor, Mich.; THOMAS A. HANNA, JR., Assistant to the Director, Indiana University Medical Center, Indianapolis, Ind.

Engineering & Plant Operations—RALPH A. JACKSON (Chairman), Hospital Safety Consultant Argonaut Insurance, Chicago, Ill.; T. F. GALLIGAN, Director of Engineering and Maintenance, St. Luke's Hospital, New Bedford, Mass.; L. L. LIERBOE, Chief—Engineering Division, V. A. Research Hospital, Chicago, Ill.; GUS L. SCHEFFLER, University of Minnesota, University Health Service, Minneapolis, Minn.

Education and Training—THOMAS W. FLYNN (Chairman), Shawnee Mission Hospital & Health Center, Shawnee Mission, Kans.; RAYMOND BRANDT, Hospital Safety Consultant, Ft. Wayne, Ind.; RICHARD L. STENSRUD, Assistant Director, St. Louis University Hospitals, St. Louis, Mo.

Statistics—SISTER MARGARET CHRISTINA HOBAN (Chairman), Assistant Administrator, Little Company of Mary Hospital, Evergreen Park, Ill.

Secretary—RUSSELL COLLING, Administrative Assistant, Chicago Wesley Memorial Hospital, Chicago, Ill.

Newsletter Editor—DANIEL BARRETT, Security Chief, Tinley Park Mental Health Center, Tinley Park, Ill.

Staff Representative—PHIL WIENER, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

2nd Vice Chairman—THOMAS CONKLING, Director—Bureau of Safety Services, Dept. of Mental Hygiene, State of New York, Albany, N. Y.

Fire—MINER L. BROWN (Chairman), Assistant Administrator, Marlborough Hospital, Marlborough, Mass.; ROBERT DALY, Security Manager, Hartford Hospital, Hartford,

Conn.; JERALD W. MYERS, Assistant Administrator, Fort Bayard Medical Center, Fort Bayard, N. M.; RAYMOND J. PAGE, Coordinator of Fire & Safety, Leila Y. Post Montgomery Hospital, Battle Creek, Mich.; PAUL R. SEIDLITZ, Training Director, St. Elizabeth's Hospital, Chicago, Ill.

Laboratory—ROBERT CAVICCHI (Chairman), Safety Engineer, Massachusetts General Hospital, Boston, Mass.; HENRY BELTRAMINI, Safety Engineer, Peter Bent Brigham Hospital, Boston, Mass.

Membership—THOMAS C. McEWAN (Chairman), National Institute of Mental Health, Chevy Chase, Md.

Ionizing Radiation—LAVERT SEABRON (Chairman), Chief—Intelligence Branch, Bureau of Radiological Health, HEW, Rockville, Md.; HENRY C. KARP, Assistant Professor, Radiological Health, Woodruff Medical Center, Emory University, Atlanta, Ga.; MR. GAIL SCHMIDT, Chief, Radioactive Materials Branch, DMRE, Rockville, Md.

NA6 11

1970

VOLUME 19

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**PETROLEUM
INDUSTRIES**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

Care and Emergency Evacuation of Injured

Injured personnel should be evacuated to the nearest medical facility by the fastest means of transport available. Speed is essential to combat the combined effects of severe cold and shock.

First aid treatment includes:

1. Protection from the cold and shock.
 2. Place the victim in a warm sleeping bag.
 3. Administer hot drinks except in the case of abdominal injury.
 4. Control bleeding by direct pressure.
- Once a tourniquet has been applied, the victim should be examined by a doctor as soon as possible.

Body Parasites

Body parasites are common in the more populated areas because of crowded living conditions and shortage of bathing and cleaning facilities. Under such conditions individuals should inspect clothing and the body each night for parasites. If parasites are present, the following methods of removal are recommended:

1. While extreme cold does not kill lice, it paralyzes them; therefore, garments should be hung in the cold, then beaten and brushed. This will help get rid of the lice, but not louse eggs.

2. Insecticide powder can be used to free the body and clothing of parasites.

Survival

Even a short cross-country trip can entail a survival situation. Men have been known to become lost and die within a few hundred yards of safety. Anyone departing a fixed

base by aircraft, ground vehicle or on foot must carry sufficient protective clothing and food reserves to permit survival during unexpected weather changes or other unforeseen emergencies.

Never travel alone. Expected itinerary and arrival time must be left with responsible parties before departing base. Be sure you are skilled in the construction of expedient shelters from available materials. Remember that snow has excellent heat insulating qualities and is a good shelter construction material. In an emergency, remain with your vehicle or downed aircraft—it may be your best shelter. Be calm. Prepare your shelter to best accommodate you and your companions. If vehicle engines are used for operating heaters, ensure adequate ventilation to prevent carbon monoxide poisoning.

Prepare emergency visual signals in accordance with standard codes and procedures. Make every effort to attract attention by other means such as radio, flares, smoke, or reflected light. Use survival gear and rations sparingly. Keep warm and keep body heat production up by all of the standard means known to you. Never give up hope. Never stop trying to survive.

Alaska law provides the following minimum survival equipment for all aircraft in cross-country flights: sufficient food for each person to sustain life for two weeks; one axe or hatchet; small arms and ammunition; fishing gear; a knife; two boxes of waterproof matches; a mosquito headnet for each occupant; pyrotechnic signal devices; in addition, during the period October 15-April 1 snowshoes, sleeping bags, and blankets are required to be aboard.

OFFICERS OF THE

PETROLEUM SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—C. W. LISTEN, Phillips Petroleum Co., Bartlesville, Okla.

Vice General Chairman and Newsletter Editor—KENNETH V. BROOKS, Cities Service Oil Co., Tulsa, Okla.

Assistant Newsletter Editor—A. F. FRIDRYCH, Universal Oil Products Co., Des Plaines, Ill.

Program Chairman—A. G. AIUVALASIT, Gulf Oil Co., Houston, Texas

Secretary and Cameron Award Chairman—W. A. MALLOY, Texaco Inc., New York, N. Y.

Technical Publications Committee—J. F. McKENNA (Chairman), American Petroleum Institute, Washington, D. C.; E. F. McLAUGHLIN, Mobil Oil Corp., New York, N. Y.; *GLENN F. STEDNITZ, UOP Process Division, McCook, Ill.

Chairman, Div of Manufacturing—HARRY BRITT, BP Oil Corp., Port Arthur, Texas

Chairman, Div, of Marketing—D. F. WILSON, Atlantic Richfield Co., Chicago, Ill.

Chairman, Div. of Pipelines—L. W. KINISON, Shell Pipe Line Corp., Houston, Texas

Chairman, Div. of Production, Drilling, & Exploration—STANLEY ATHERTON, Getty Oil Co., Houston, Texas

Chairman, Off-the-Job Safety—D. F. CHEANEY, Sinclair Div., Atlantic Richfield Co., Harvey, Ill.

Chairman, Education & Training—R. H. WRIGHT, Mobil Oil Corp., Joliet, Ill.

Chairman, Health Committee—DR. HAROLD W. SPIES, Standard Oil Co. (Indiana), Chicago, Ill.

Chairman, Publicity and Public Relations—R. J. LARSON, The Ansul Co., Marinette, Wis.

Chairman, Activities and Membership—

Atlantic Region—HOWARD THEIS, The Ansul Co., New York, N. Y.

Great Lakes Region—A. A. FRIDRYCH, Universal Oil Products Co., Des Plaines, Ill.

Gulf Coast Region—C. H. KLUNICK, Continental Oil Co., Houston, Texas

Mid-Continent Region—FRANK K. LIGHTFOOT, Skelly Oil Co., Tulsa, Okla.

Pacific Coast Region—MURRAY HAMILTON, Mobil Oil Corp., Torrance, Calif.

Canada; EDWARD C. LEONARD, Inland Steel Co., Ishpeming, Mich.; W. R. NEIL,
Bethlehem Mines Corp., Cornwall, Pa.

Nominating Committee — †ALLEN D. LOOK (Chairman); †*ROBERT M. NEIL; †*HAROLD
F. THOMPSON; †R. G. STOTT; †T. T. PINDER; †J. B. BOWEN

Staff Representative — RICHARD SNYDER, National Safety Council, 425 N. Michigan Ave.,
Chicago, Illinois 60611

*Past General Chairman

PLAN NOW TO ATTEND THE

1971 NATIONAL SAFETY CONGRESS OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

1972 The Congress is always a big week, a worthwhile week
for the 13,000 safety people who attend.

1973 At the '71 Congress you can meet other safety people,
with the same problems and responsibilities as yourself.
You can exchange views and ideas on accident preven-
tion, health, hygiene, and fire prevention . . . on safety
in industry, traffic, school, at home and on the farm.

1974 You can see the largest of all safety equipment exhibits
at the Congress . . . an opportunity for you to make well-
informed buying decisions for your company.

This four-day educational program, planned and pre-
sented by the National Safety Council, can be your
most thought-provoking, most worthwhile safety expe-
rience in 1971.

Make plans early to attend the 1971 Congress and bring
the other people in your organization who have safety
responsibilities.

FUTURE CONGRESS DATES

1971	October	25-28
1972	Oct. 30 - Nov. 2	
1973	Oct. 29 - Nov. 1	
1974	Sept. 30 - Oct. 3	

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

PB-3375-143-SB
6 75-69T
C
B/f

MINING SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—M. R. FRASER, Mines Accident Prevention Association of Ontario, North Bay, Ont., Canada

Chairman-Elect—ROY G. STOTT, U. S. Bureau of Mines, Washington, D. C.

Second Vice-Chairman—T. T. PINDER, Utah Division, Kennicott Copper Div., Salt Lake City, Utah

Third Vice-Chairman—J. B. BOWEN (Chairman), Erie Mining Company, Hoyt Lakes, Minn.

Secretary—H. G. PLIMPTON, Dept. of Interior, Washington, D. C.

Panel I

Chairman-Elect—R. G. STOTT

Engineering Committee—LARRY S. HANSEN (Chairman), Northwestern Mining Department, American Smelting & Refining Co., Wallace, Idaho; E. WARD RICHARDS, Pilot Knob Pellet Co., Ironton, Mo.; DAN F. TRAVIS, U. S. Steel Company, Jefferson City, Tenn.; BRUCE MULL, Erie Mining Company, Hoyt Lakes, Minn.; MARVIN E. JOHNSON, The Anaconda Co., Butte, Mont.; FRED G. MICHELS, White Pine Copper Co., White Pine, Mich.; ROBERT JOHNSON, Miami Copper Co., Div. Tennessee Corp., Miami, Ariz.; R. V. BAMERIO, Inspiration Consolidated Copper Corporation, Inspiration, Ariz.; TOM CAVES, Olin Corp., Saltville, Va.

Hygiene and Ventilation Committee—DONALD L. WERNER, M.D. (Chairman), Dept. of Industrial Medicine, East Range Clinics, Ltd., Hoyt Lakes, Minn.; R. J. SEARLE, U. S. Bureau of Reclamation, Salt Lake City, Utah; W. A. BARDSWICH, Department of Mining & Applied Geophysics, McGill University, Montreal, Quebec, Canada; EDWARD DESROCHERS, United States Gypsum Co., Chicago, Ill.; R. M. FEATHER, Allan Potash Mines, Saskatoon, Saskatchewan, Canada

Off-the-Job Safety Committee—ROY G. STOTT (Chairman), U. S. Bureau of Mines, Washington, D. C.; †T. T. PINDER; †J. B. BOWEN; KEITH A. MCLEOD, International Minerals & Chemicals Co., Esterhazy, Sask., Canada; †ROBERT JOHNSON

Statistics Committee—OWEN B. BOLAND (Chairman), Caland Ore Company, Ltd., Atikokan, Ontario, Canada; FORREST T. MOYER, Chief, Accident Analysis Branch, U. S. Bureau of Mines, Washington, D. C.; J. WILFRED PELLETIER, Lake Asbestos of Quebec, Ltd., Black Lake, Quebec, Canada

Panel II

Second Vice-Chairman—T. T. PINDER

Newsletter Editor—LOUIS J. ZAVERL, U. S. Bureau of Mines, Duluth, Minn.

Training Committee—ED. FLASNY (Chairman), Potash Co. of America, Saskatoon, Saskatchewan, Canada; JUEL G. DROUBAY, The Anaconda Co., Butte, Mont.; G. NAPIER, Rio Algom Nordic Mine, Elliot Lake, Ontario, Canada; JOHN S. KELLY, U. S. Bureau of Mines, Pittsburgh, Pa.; J. A. BENNETT, U. S. Bureau of Mines, Pittsburgh, Pa.; E. L. (RED) GAY, Duvall Corp. of Canada, Saskatoon, Saskatchewan, Canada

Visual Education Committee—H. J. ABBISS (Chairman), United Nuclear Homestake Partners, Grants, N. M.; WALTER O. GUNELSON, The Hanna Mining Co., Agents, Hibbing, Minn.; A. L. FRENCH, The Anaconda Co., Great Falls, Mont.; WILLIAM L. SMITH, The Anaconda Co., Butte, Mont.; K. R. PRICE, Tennessee Copper Co., Copperhill, Tenn.

Associations-Publicity Committee—L. JOSEPH HALL (Chairman), Reserve Mining Co., Silver Bay, Minn.; KEITH R. KNOBLOCK, Mining Congress Journal, Washington, D. C.; H. BRADLEY JOHNSON, American Mining Congress, Washington, D. C.; CHRIS MAMEN, Canadian Mining Journal, Gardenvale, Que., Canada; J. G. RICKABY, International Nickel Company, Copper Cliff, Ont., Canada; DAVID N. SKILLINGS, Skillings Mining Review, Duluth, Minn.; HAROLD DAVIS, Engineering and Mining Journal, New York, N. Y.

Panel III

Third Vice-Chairman—J. B. BOWEN

Program Committee—JOSEPH T. MORTIMER (Chairman), Ray Mines Div., Kennecott Copper Corp., Hayden, Ariz.; ROBERT W. VAN EVERA, American Mining Congress, Washington, D. C.; WESLEY G. JOHNSON, Inland Steel Company, Ishpeming, Mich.; A. W. NESS, American Smelting and Refining Co., Salt Lake City, Utah; FRED BROUSSE, Welsh Mfg. Co., Yorba Linda, Calif.; G. M. HOSTETTER, Pickands Mather & Co., Cleveland, Ohio

Membership Committee—J. W. JEFFRIES (Chairman), Mines Accident Prevention Assn. of Manitoba, Winnipeg, Manitoba, Canada; D. W. HENRY, Hecla Mining Company, Wallace, Idaho; J. L. DOYLE, Wabush Mines, Wabush Lake, Labrador, Canada; ROBERT BALDECK, International Salt Company, Clarks Summit, Pa.; D. J. MASTERSON, Stauffer Chemical Co. of Wyoming, Green River, Wyo.; E. P. SHOUB, Chief, Div. of Accident Prevention & Health, U. S. Bureau of Mines, Washington, D. C.; THOMAS C. LUKINS, U. S. Bureau of Mines, Denver, Colo.; ROBERT B. MULHALL, Babbitt Industries, Saratoga, Calif.

Entertainment Committee—EVERETT WHITE (Chairman), Mine Safety Appliances Co., Pittsburgh, Pa.; F. D. WOLEBEN, U. S. Steel Corporation, Virginia, Minn.

District Representatives—Northeastern District, JOSEPH H. WEEKES, New Jersey Zinc Company, Ogdensburg, N. J.; Southeastern District, JOSEPH HARBISON, Tennessee Copper Co., Copper Hill, Tenn.; Western District, W. LYNN HART, American Smelting and Refining Co., Wallace, Idaho; Southwestern District, R. L. JOHNSON, Chino Mines Div., Kennecott Copper Corp., Hurley, N. M.; Eastern Canada District, H. R. POWNALL, Editor of Panorama, Noranda Mines Limited, Noranda, Quebec, Canada; Western Canada District, JOHN O. WOLF, Mining Assn. of B. C., Vancouver, B. C., Canada

Research and Planning Committee—*ALLEN D. LOOK (Chairman), U. S. Bureau of Mines, Alameda Federal Center, Alameda, Calif.; *ROBERT M. NEIL, White Pine Copper Co., White Pine, Mich.; *HAROLD F. THOMPSON, American Zinc Co., Mascot, Tenn.; *JOHN A. COOKE, Falconbridge Nickel Mines Ltd., Falconbridge, Ontario,

1970

VOLUME 20

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**PUBLIC
UTILITIES**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

PUBLIC UTILITIES SECTION

NATIONAL SAFETY COUNCIL 1970-71

are about four more dollars of hidden losses that management is usually not aware of.

Quoting from a bulletin of the United States Fidelity and Guaranty Company: "Based on country-wide averages, for every dollar paid by the insurance company for compensation losses and medical expenses, the employer pays four dollars for the same accident."

Referring to the 1963 edition of *Safety Management*: "With the exception of the National Safety Council, which has replaced the 4:1 ratio with the Simonds method for finding a company's accident cost, many books on accident prevention still repeat the story of the 4:1 ratio." Some conservative authors feel this ratio is a bit too high, as for example the 1967 edition of *Supervisor's Safety Manual* (National Safety Council) which states: "What is not realized is that the hidden costs of accidents are higher than medical, compensation, and insurance costs. The rule-of-thumb figure is that hidden costs are about twice the direct cost of an accident."

(For comparison purposes, the Simonds method of determining the hidden costs of accidents assigns specific dollar figures for uninsured costs for various industries. The all-industry group has an average uninsured cost of \$130 per lost-time case, while in construction the cost is about \$100 per lost-time case. It is interesting to note in the Simonds studies of no-injury accidents—property damage only—that the average uninsured cost for all-industry was \$290 and for general manufacturing was \$375. No-injury accidents—no injury to employees—are said by many experts to occur about as often as lost-time injuries.)

The case is clear for accident prevention. There are thousands of dollars of hidden savings to be gained by all types of industry, as well as a large water utility. The hidden costs of accidents have been studied by many for years, including A. H. Young of U. S. Steel, who as early as 1936 stated: "We have spent \$24,860,000 on safety work . . . by multiplying the cost of settling similar accidents, we found that we had made a saving of \$117,224,000 . . . even if the figures are 50 per cent wrong, at least we got back the dollar we paid for safety and another with it."

The National Safety Council 1967 edition of *Accident Facts* reports that during 1966 in the United States the "other costs of work injury accidents" amounted to \$3,000,000,000, which included property damage, interference with production, and time lost by workers other than the injured, while the cost of medical expenses and insurance costs totaled only \$1,500,000,000. Again, the hidden costs or hidden savings available were twice as much as the insured costs of an accident.

As a closing thought, another quote from the National Safety Council's *Supervisor's Safety Manual* should be sufficient: "Property damage is one of these hidden costs. Often an accident occurs which injures no one (or in which the injury is slight), but which does extensive property damage. Because the repair bill was charged to maintenance and repair of equipment, it never appeared in the accident reports to management. Yet it was an accident cost just as surely as compensation paid to an injured worker would be. Management must recognize this."

General Chairman—HERMAN C. POTTHAST, Safety Officer, U.S. Dept. of Agriculture, Rural Electrification Admin., Washington, D.C.

First Vice-Chairman—ROBERT F. MILLS, General Safety Supvr., Mountain States Telephone Co., Denver, Colo.

Second Vice-Chairman—ROBERT H. WARD, Safety Director, Omaha Public Power District, Omaha, Nebr.

Secretary—WILLIAM W. WILLIFORD, Plant Supervisor-Safety, The Chesapeake & Potomac Telephone Co., Washington, D.C.

Program Committee—ROBERT J. OWENS (Chairman), Safety Engineer, Pacific Gas & Electric Co., San Francisco, Calif.; BRUCE G. GALLAGHER (Vice Chairman-Electric), Accident Prevention Coordinator, Hydro-Electric Power Commission of Ontario, Toronto, Ontario, Canada; R. PAUL BOLERJACK (Vice Chairman-Gas), Safety Director, Illinois Power Co., Decatur, Ill.; VERN A. SIELERT (Vice Chairman-Communications), Loss Prevention Administrator, General Telephone & Electronics Corp., New York, N.Y.; HARRY W. BECKER (Vice Chairman-Water), Safety Director, American Water Works Assn., New York, N.Y.

Technical Publications Committee—JOHN E. FRANDSEN (Chairman), General Plant Supervisor-Personnel, Northwestern Bell Telephone Co., Omaha, Neb.; J. E. APPEL (Vice Chairman-Electric), Safety Engineer, Commonwealth Edison Co., Chicago, Ill.; T. L. POWERS (Vice Chairman-Gas), Safety Engineer-Gas Department, Public Service Electric & Gas Co., Newark, N.J.; H. O. BROWN (Vice Chairman-Communications), General Plant Safety Supvr., Southern Bell Telephone Co., Atlanta, Ga.; RICHARD OLIPHANT (Vice Chairman-Water), Safety Director, Board of Water Commissioners, Denver, Colo.; ALEX PIERSON, Safety Engineer, Philadelphia Gas Works, Philadelphia, Pa.; A. L. FURANNA, General Manager, Public Utilities Commission, London, Ontario, Canada; H. C. HUSTED, Safety Engineer, Department of Water & Power, City of Los Angeles, Los Angeles, Calif.

Training Committee—ERNEST G. SHEARER (Chairman), Director, Safety & Training, Indiana Statewide Rural Electric Cooperative, Inc., Indianapolis, Ind.; FRANK SUSTELLO, JR., (Vice Chairman), Employee Relations, Safety & Claims Superintendent, Reading Gas Division, U.G.I. Corp., Reading, Pa.; JOSEPH F. MAHONEY, JR., Safety Representative, Philadelphia Electric Co., Philadelphia, Pa.; ASHBY B. RANDOLPH, Manager of Safety, Consolidated Gas Supply Corp., Clarksburg, West Va.; CHARLES S. BOLICK, System Safety Director, Metropolitan Edison Co., Reading, Pa.; HUGH BURKE, Director of Training & Safety, Dairyland Power Cooperative, Inc., South LaCrosse, Wisc.; JACK B. O'NEILL, Director of Safety, Transcontinental Gas Pipe Line Corp., Houston, Texas

Off-the-Job Safety Committee—COLON F. STANLEY (Chairman), Safety Manager, General Telephone Co. of Florida, Tampa, Fla.; RALPH RICHEY (Vice Chairman), Staff Supervisor, American Telephone & Telegraph Co., Pittsburgh, Pa.; ELWOOD T. GILL, Safety Manager, General Telephone Co. of California, Santa Monica, Calif.

mont Public Service Corp., Rutland, Vt.; B. BOB COOPER (Vice Chairman), Manager of Personnel & Safety, Industrial Generating Co., Fairfield, Texas

Audio-Visual Aids Committee—ERNEST W. TRAUT (Chairman), Safety Director, General Telephone Co. of Pennsylvania, Erie, Pa.; O. RAY BOWERS (Vice Chairman), Safety Engineer, Central Illinois Light Co., Peoria, Ill.; OTTO J. NOWAK, Plant Operations Supervisor, New York Telephone Co., New York, N.Y.; PAUL BURDAN, Assistant Mgr., Monmouth Consolidated Water Co., Long Branch, N.J.; WAYNE L. CHADBOURNE, Director of Safety, Central Maine Power Co., Augusta, Me.; GEORGE H. WESTON, Administration Staff Supervisor, Pacific Telephone & Telegraph Co., San Francisco, Calif.

Newsletter Committee—RAYMOND J. LORD (Editor), Safety Supervisor, Detroit Edison Co., Detroit, Mich.; STANLEY BALLOU (Associate Editor), Assistant Manager of Safety, Texas Power & Light Co., Dallas, Texas

Publicity Committee—JOHN T. CAPPIO (Chairman), Safety Officer, City of Philadelphia Water Dept., Philadelphia, Pa.; M. H. MAXWELL (Vice Chairman), Safety Supervisor, The L. E. Myers Co., Villa Park, Ill.

Research Committee—JOHN R. YEAMAN, JR. (Chairman), Division Safety Engineer, Virginia Electric & Power Co., Alexandria, Va.; GERALD R. THOMAS (Vice Chairman), Safety Director, Columbus & Southern Ohio Electric Co., Columbus, Ohio; C. RICHARD CHAPIN, Accident Prevention Administrator, Long Island Lighting Co., Hicksville, N.Y.; ALBERT PHILLIPS, Manager-Employee Safety, American Gas Assn., Arlington, Va.

Nominating Committee—MARVIN B. TRAVIS (Chairman), Corporate Safety Director, Northern Natural Gas Co., Omaha, Nebr.; B. J. LORENZ (Vice Chairman), Manager of Safety, Northern Indiana Public Service Co., Hammond, Ind.; CHARLES W. SCHWEICKART, President, Hoosier Engineering Co., Dublin, Ohio; WARREN L. CLIFTON, Director of Accident Prevention, Hydro-Electric Power Commission of Ontario, Toronto, Ontario, Canada; PAUL WINDSOR, Secretary, Bureau of Safety, Chicago, Ill.

Cameron Award Coordinator—ROBERT H. WARD (Chairman)

Special Representatives

American Gas Association—T. L. POWERS, Safety Engineer—Gas Department, Public Service Electric & Gas Co., Newark, N. J.

American Public Power Assn.—HIRAM G. TRIPP, Safety Director, Chattanooga Electric Power Board, Chattanooga, Tenn.

American Water Works Association—JOHN T. CAPPIO, Safety Officer, Philadelphia Water Dept., Philadelphia, Pa.

Canadian Electrical Association—WARREN L. CLIFTON, Director of Accident Prevention, Ontario Hydro-Electric Power Commission, Toronto, Ontario, Canada

National Job Training & Safety Association—ERNEST G. SHEARER, Safety Director, Indiana Statewide Rural Electric Cooperative Assn., Indianapolis, Ind.

Past General Chairman—1957-58, J. E. APPEL; 1958-59, E. M. CHASE (Retired); 1959-60, R. S. LOWE (Retired); 1960-61, R. E. McELDOWNEY, JR.; 1961-62, V. L. WOMELDORFF

T. F. WICKORD (Deceased); 1965-66, W. L. CLIFTON; 1966-67, C. SCHWEICKART; 1967-68, K. G. CREGAR (Retired); 1968-69, B. J. LORENZ; 1969-70, M. B. TRAVIS

Staff Representative—RALPH M. COE, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

1970

NA 611
VOLUME 21

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**PULP and PAPER;
PRINTING and
PUBLISHING**



NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611

conscious. Departmental plans are now designed with safety in mind. Employees are beginning to think that perhaps there is something to this safety bit. Our maintenance force responds in a reasonable time to safety work orders. We are sure of our ground and we are opening our plant to safety participation a section at a time. In time, our plant will have the safety suggestion boxes, the safety committees, the regular safety meetings, and the programs which some of you may take for granted. In reference to earlier comments, these programs will be controlled. Employees and supervision alike must understand the importance of the respective safety projects or the projects will just as readily be abandoned. The time has arrived, not only at Meredith Printing but throughout American industry, for safety to be a joint responsibility of manager and employee. If either party shirks his safety responsibility, both parties will lose.

Changing employees' attitudes today can be discouraging. Reaching these people and

influencing the way they think appears so hopeless it hardly seems worth the effort. As indicated earlier, we do bypass those cases which not only appear but are, in fact, hopeless. We are also cognizant of the fact that effective safety communication is sorely needed. Today we have succeeded in selling constructive, commonsense safety attitudes to a few of our employees. Tomorrow we will sell more of our employees. The results are proving well worth the cost and effort.

A very popular milk company had the following slogan printed in big letters on the sides of its truck: "Our cows are not contented! They're anxious to do better." Safety at Meredith is not contented. We can and will do better.

Safety is at Meredith to stay. It will not go away as a bad dream as some may have wished two years ago. Meredith management recognizes safety as a most important tool in the production process. Next year or the year after Meredith Printing will have an Award of Merit. During the interim we're going to chip, chip away!

OFFICERS OF THE PULP AND PAPER SECTION NATIONAL SAFETY COUNCIL 1970-71

General Chairman—HARRIS K. WILLIAMS, Coordinator of Safety, International Paper Co., Southern Kraft Div., Mobile, Ala.

Vice Chairman and Program Chairman—B. E. MCGARRAHAN, Corporate Mgr., Safety and Workmen's Compensation, The Mead Corp., Dayton, Ohio

Vice Chairman and Newsletter Editor—J. C. SMITH, General Safety Supervisor, I. T. T. Rayonier Incorporated, Hoquiam, Wash.

Secretary—FRED ELLIS, Safety Dir., Consolidated Papers, Inc., Wisconsin Rapids, Wis.

Regional Representatives—RICHARD H. WAHLFELD (Chairman), Safety Coordinator, Bemis Co., Inc., Minneapolis, Minn.; *Canada*—DONALD G. THOMPSON, Safety Coordinator, Woodlands Dept., Kimberly-Clark Pulp & Paper Co. Ltd., Long-Lac, Ontario, Can.; *Lake States*—*ARTHUR CARLE, Safety Dir., The Northwest Paper Co., Cloquet, Minn.; *Middle Atlantic States*—*HARRY R. MESLER, Jr., Coordinator of Safety, Occupational Health & Security, GAF Corporation, New York, N. Y.; *Southern States*—*DALLAS E. HENRY, Safety Supv., Continental Can Co., Inc., Hodge, La.; *Pacific Coast States*—DAN ADAIR, Safety Coordinator, Pacific Coast Assn. of Pulp & Paper Mfrs., Portland, Ore.; *Midwest States*—OTTO WAGERS, Mgr., Loss Prevention Services—Manufacturing, U. S. Plywood-Champion Papers, Inc., Knightsbridge, Hamilton, Ohio; *New England States*—*ROBERT J. GELL, Consultant, Safety & Training, Rochester, N. Y.; *South Eastern States*—*ALLEN H. WATTS, Safety Dir., Union Camp Corp., Savannah, Ga.

Statistics and Research Committee—MARVIN W. PEARSON (Chairman), Director, Loss Control Research, Employers Insurance of Wausau, Wis.; WALTER N. KNORR, Safety Mgr., The Flintkote Company, White Plains, N. Y.; HAROLD T. REGAN, Safety Coordinator, American Paper Institute, Inc., Chicago, Ill.; *ROSS E. SCOTT, Mgr., The Ontario Pulp and Paper Makers Safety Assn., Toronto, Ont., Can.

Training Committee—W. C. LOCKHART (Chairman), Asst. Mgr., The Ontario Pulp and Paper Makers Safety Association, Toronto, Ontario, Can.; R. H. FISHER, Safety Engr., Southwest Forest Industries, Snowflake Paper & Pulp Division, Snowflake, Ariz.; *FORREST E. KIMMELL, Occupational Safety Consultant, Safety Services Section, Safety Education & Training Division, Department of Labor, Lansing, Mich.; CLAYTON F. LINTON, Assistant Personnel Manager, Simpson Lee Paper Company, Vicksburg, Mich.; *F. O. SOUGHTON, Safety & Training Coordinator, Kimberly-Clark Pulp & Paper Company, Ltd., Terrace Bay, Ontario, Can.; MARVIN L. STRODE, Corporate Safety Administrator, Boise Cascade Corp., Boise, Idaho

Off-the-Job Committee—MILES MURRAY (Chairman) Manager, Safety Services, Crown Zellerbach Corp., San Francisco, Calif.; D. J. DEVINE, Safety Director, The Ontario Paper Co. Ltd., Thorold, Ontario, Can.; R. ST. ONGE, Safety Supervisor, Spruce Falls Power & Paper Co. Ltd., Kapuskasing, Ontario, Can.

Pulpwood Logging Committee—K. S. KOLSTON, JR. (Chairman), Administrative Assistant, American Pulpwood Assn., New York, N. Y.; MAURICE H. DAVIES, Safety Coordinator, Woods Department, Dryden Paper Company Ltd., Dryden, Ontario, Can.; K. L. GIBSON, Director, Safety & Workmen's Compensation, Georgia-Pacific Corporation, Portland, Ore.; PETER M. HUBERTH, Corp. Mgr. of Safety, Scott Paper Co., Scott Plaza, Philadelphia, Pa.; JOHN E. C. PRINGLE, Employee Relations Supervisor, Woodlands, Spruce Falls Power & Paper Co. Ltd., Kapuskasing, Ontario, Can.

Paper Manufacturing Committee—GEORGE M. WILLIAMS (Chairman), Wausau Regional Manager, Safety & Health Services, Employers Insurance of Wausau, Wausau, Wis.; MAX FOURNIER (Vice Chairman), Mill Safety Director, Quebec North Shore Paper Co., Baie Comeau, Quebec, Can.; RAY T. FRIEND, Manufacturing Mgr., Kieffer Paper Mills Inc., Brownstown, Ind.; OTIS INGRAHAM, Safety Director, Georgia-Pacific Corporation, Kalamazoo Paper Division, Kalamazoo, Mich.; WILLIAM H. LEWIS, Safety Director, Allied Paper Corporation, Jackson, Ala.; EDWARD J. MCCORMICK, JR., Personnel Mgr., Tileston & Hollingsworth Co., Hyde Park, Mass.; S. L. SMITH, Safety Director, Interstate Paper Corp., Riceboro, Ga.

Pulp Manufacturing Committee—CHESTER W. MATZINGER, JR. (Chairman), Assistant Coordinator of Safety, International Paper Co., Mobile, Ala.; DON LADURON (Vice Chairman), Safety & Fire Coordinator, American Can Company, Naheola Mill, Butler, Ala.; R. E. BAILEY, Safety Manager, Scott Paper Company, Mobile, Ala.; AUSTIN C. GRANT, Safety Engineer, Western Kraft Corp., Albany, Ore.; WILLIAM J. HAYES, Safety Dir., Weyerhaeuser Co., Longview, Wash.; ROBERT J. ISON, Manager of Safety Services, Kimberly-Clark Company, Neenah, Wis.; R. J. OAKE, Supt. Safety Services, Bowaters Newfoundland Pulp & Paper Mills Ltd., Corner Brook, Newfoundland, Can.; COLIN L. TALBOT, Plant Personnel Manager, Georgia-Pacific Corporation, Crossett, Ark.; JOHN S. TURNER, Safety Coordinator, Bowaters Southern Paper Corp., Calhoun, Tenn.

Bag & Paper Specialties Committee—WILLIAM W. COOK (Chairman), Bemis Co. Inc., Vancouver, Wash.; D. E. BARBERI, Safety Director, St. Regis Paper Co., Pensacola, Fla.; DONALD R. WATT, Safety Director, International Paper Co., Cullendale Sta., Camden, Ark.

Roofing and Insulation Committee—J. R. SMILIE (Chairman), Personnel Manager, GAF Corporation, Joliet, Ill.; BEN A. ANDERSON, Safety Director, Conwed Corp., Cloquet, Minn.; BRIAN CORNELIUS, Personnel & Safety Supervisor, GAF Corporation, North, Minneapolis, Minn.; ROBERT J. ROBEY, Safety Director, Bird & Sons Company, East Walpole, Mass.

Shipping Container & Folding Carton Committee—JAMES E. JONES (Chairman), Director of Industrial Relations, Paperboard Packaging Council, Washington, D. C.; F. E. PATTERSON, Safety Dir., Olinkraft, Inc., West Monroe, La.; ROBERT G. RILEY, Manager, Personnel & Industrial Relations, Packaging Corporation of America, Quincy, Ill.; J. R. STROUBE, Corporate Safety Dir., Container Corporation of America, Chicago, Ill.

Safety Standards Committee—*FRANCIS H. WAGNER (Chairman), Corp. Mgr. of Safety Packaging Corp. of America, Evanston, Ill.

Nominating Committee—JOHN S. TURNER (Chairman), *ROSS E. SCOTT, *HARRY MESLER, JR.

Advisory Committee—*GORDON D. LEMAE, VICE PRES., Safety & Health Services, Employers Insurance of Wausau, Wausau, Wis.; GEORGE MERRIMAN, Safety Consultant, Mobile, Ala.

Staff Representative—CHARLES H. PRICE, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

*Past General Chairman

OFFICERS OF THE PRINTING & PUBLISHING SECTION NATIONAL SAFETY COUNCIL 1970-71

General Chairman—WILBERT R. MAY, Safety Officer, Treasury Dept., Bureau of Engraving & Printing, Washington, D. C.

First Vice Chairman & Program Chairman—RICHARD R. GIPSON, Dir. of Safety & Security, McCalls, Dayton, Ohio

Second Vice Chairman & Publicity Coordinator—ED C. DENNY, Safety & Maint. Engr., Courier-Journal & Times, Louisville, Ky.

Secretary—HARVEY S. SIEGEL, Safety Mgr., New York Times, New York, N. Y.

Newsletter Editor—HOWARD M. McCONNELL, Chief Electrical Engr., Harris Intertype Corp., Cleveland, Ohio

Associate Newsletter Editor—RALPH MUNDHENK, Safety Dir., Standard Register Co., Dayton, Ohio

Associations Committee—RODNEY BORUM, Pres., Printing Industries of America, Inc., Arlington, Va.; WILLIAM J. EVANS, Insurance Dir., Printing Industries of America, Arlington, Va.; WILLIAM J. STEVENS, Pres., National Assn. of Photo Lithographers, New York, N. Y. *ALFRED A. JASSER, President, Anchor Chemical Co., Hicksville, N. Y.

Membership Committee—*ALFRED A. JASSER, Pres., Anchor Chemical Co., Hicksville, N. Y.; GORDON H. ROSBERG, Service Offset Corp., Chicago, Ill.

Newspaper Liaison Committee—E. C. DENNY, Safety & Maint. Engineer, Courier-Journal & Times, Louisville, Ky.; JIM GOUMAS, Safety Dir., The Chicago Tribune, Chicago, Ill.; HARVEY S. SIEGEL, Dir., Plant Prot. & Safety, New York Times, New York, N. Y.

Training Aids Committee—JOHN (JERRY) SCHILLO (Chairman), Consulting Safety Engineer, Utica Mutual Insurance Co., Utica, N. Y.; WILBERT R. MAY, Safety Officer, Treasury Dept., Bureau of Engraving & Printing, Washington, D. C.; PHILIP W. BATTAGLIA, Executive Secretary, National Assn. of Photo Lithographers, New York, N. Y.; CHARLES SHAPIRO, Publications Editor, Graphic Arts Technical Foundation, Pittsburgh, Pa.; ED A. CAMPBELL, Safety Consultant, Columbus, Ohio; A. ROSS DUNCAN, Director of Safety & Plant Protection, Western Publishing Co., Inc., Racine, Wis.

Program Committee—*PAUL O'NEILL, Safety Director and Consultant, Rand McNally & Co., Hammond, Ind.

Engineering Committee—*HOWARD CODLING, Consultant, Riverdale, Md.; ED. C. DENNY, Safety & Maint. Engr., Courier-Journal & Times, Louisville, Ky.; HOWARD McCONNELL, Chief Elect. Engr., Harris-Seybold Co., Cleveland, Ohio; PAUL McGUIRE, Corp. Mgr. of Safety, Meredith Printing Co., Des Moines, Iowa *Material Handling*—JAMES R.

WRIGHT, Asst. Safety Officer, U. S. Govt. Printing Office, Washington, D. C.; *Guaranty and Controls*—F. N. BURT, Mgr., Trip Control Div., Minneapolis Honeywell Regulator Co., Freeport, Ill.; FRANK NEIDHART, Personnel Mgr., Michle-Goss-Dexter, Inc., Chicago, Ill.; *Fire*—WILBERT R. MAY, Safety Officer, Treasury Dept., Bureau of Printing & Engraving, Washington, D. C.

Nominating Committee—PAUL O'NEILL (Chairman), Gen. Safety Dir., Rand McNally & Co., Hammond, Ind.

Advisory Committee—*HOWARD CODLING, (Eng. Committee); *PAUL O'NEILL, Consultant, Hammond, Ind.; *BERNARD J. TAYMANS, Consultant, Washington, D. C.; WILLIAM STEVENS Association Comm.); FRANK NEIDHART (Program Comm.); *ALFRED JASSER Membership Comm.)

Membership at Large—KEN E. BROWN, Safety Supt., Weldon, Williams & Lick, Ft. Smith, Ark.; PHIL GARNER, Safety Dir., Hallmark Cards, Inc., Kansas City, Mo.; HUGH GAYLORD, Safety Coordinator, J. W. Clement Co., T. C. Industrial Pk., Depew, N. Y.; RICHARD C. KIDWELL, Safety Dir., R. R. Donnelley & Sons Co., Chicago, Ill.; BERNARD W. MENKE, Plant Supt., Government Printing Office, Chicago, Ill.; ROBERT L. MOHLE, Judd & Detweiler, Inc., Washington, D. C.; MIKE A. RUTHERFORD, Safety Coordinator, Kingsport Press Inc., Kingsport, Tenn.

Staff Representative—RAY F. SMITH, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

Honorary Member—LILLIAN STEMPE GARZOTTO, Lakeland, Fla. (Editor emeritus, Graphic Arts Safety Manual)

*Past General Chairman

000000

000000

0

1970

VOLUME 22

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**RAILROAD
SAFETY**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

RAILROAD SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—G. J. BARRY, Supt. of Safety, Chicago, Milwaukee, St. Paul & Pacific R. R., Chicago, Ill.

Vice Chairman—R. C. LINDQUIST, Dir. Safety & Rules-Sys., Burlington Northern, St. Paul, Minn.

Vice Chairman—M. M. ECHOLS, Supt. Safety, Norfolk & Western Ry., Portsmouth, Ohio

Secretary and Newsletter Editor—N. J. ANDREWS, Dir. of Safety, Illinois Central System, Chicago, Ill.

Associate Newsletter Editors—Canada—T. L. JAMIESON, Supt. of Safety, Canadian National Ry's, Montreal, Quebec, Canada

East—D. L. ECKMAN, Supvr. Safety, Western Maryland Ry, Hagerstown, Md

Southeast—D. K. BIELEFELD, JR., Staff Asst., Safety & Fire Prevention, Louisville & Nashville R. R., South Louisville, Ky.

Central—P. L. DEMPSEY, Asst. Supt. of Safety, Chicago, Milwaukee, St. Paul & Pacific R. R., Chicago, Ill.

West—G. W. MONTGOMERY, Asst. Supt. of Safety, Southern Pacific Transportation Co., San Francisco, Calif.

Southwest—G. S. POLLARD, Asst. Supt. Safety, St. Louis-San Francisco Ry., Springfield, Mo.

Audio Visual Aids Committee—C. W. BAILEY (Chairman), Dir. of Safety & Plant Protection, Duluth, Missabe & Iron Range Ry., Proctor, Minn.; R. S. VAN NESS (Vice Chairman), Reg. Dir. Safety & Rules, Burlington Northern, Minneapolis, Minn.; D. O. ANDERSON, Gen. Inspector & Instructor, Chicago, Milwaukee, St. Paul & Pacific R. R., Chicago, Ill.; H. R. BORNGREBE, Reg. Dir. Safety & Rules, Burlington Northern, St. Omaha, Neb.; G. R. STEPHEN, Asst. to Dir. Safety & Rules, Burlington Northern, St. Paul, Minn.; B. L. WAGNER, Asst. Trainmaster & Rules Examiner, Duluth, Missabe & Iron Range Ry., Proctor, Minn.

Home and Off-the-Job Committee—C. W. LEWEY (Chairman), Asst. Gen. Mgr. Safety, Norfolk & Western Ry., Roanoke, Va.; F. C. LAING (Vice Chairman), Supt. Safety, Southern Railway, Knoxville, Tenn.; R. W. BOWMAN, Supt. Safety & Claims, Bessemer and Lake Erie R. R., Greenville, Pa.; O. P. DOWLING, Gen. Supt. Safety, Seaboard Coast Line R. R., Jacksonville, Fla.; D. L. ECKMAN, Supvr. Safety, Western Maryland Ry., Hagerstown, Md.; C. H. SPENCER, Asst. Mgr. Safety & Fire Prevention, Chesapeake & Ohio-Baltimore & Ohio R. R., Baltimore, Md.

Membership Committee—J. H. GILLEFILLAN (Chairman), Supt. of Safety, Chicago, Rock Island & Pacific R. R., Kansas City, Kans.; R. E. DAVIS (Vice Chairman), Supt.

Safety & Fire Prevention, Denver & Rio Grande Western R. R., Denver, Colo.; D. D. BAIRD, Supt. Safety, Atchison, Topeka & Santa Fe Ry., Chicago, Ill.; W. B. GROOME, Mgr. Safety & Courtesy, Union Pacific R. R., Omaha, Neb.

Nominations and Elections Committee—*R. P. LITTLE (Chairman), Mgr. of Safety, Elgin, Joliet & Eastern Ry., Joliet, Ill.; *H. A. LINDERER (Vice Chairman), Supt. Safety & Rules, St. Louis-San Francisco Ry., Springfield, Mo.; *D. K. MILLER, Supt. of Safety, Southern Pacific Transportation Co., San Francisco, Calif.

Program Committee—M. M. ECHOLS (Chairman), Supt. Safety, Norfolk & Western Ry., Portsmouth, Ohio; R. S. VAN NESS (Vice Chairman), Reg. Dir. Safety & Rules, Burlington Northern, Minneapolis, Minn.; H. H. BRADLEY, Asst. Vice Pres., Safety & Freight Claim Prev., Southern Railway Sys., Atlanta, Ga.; *H. C. DAULTON, Dir. of Safety, Louisville & Nashville R. R., Louisville, Ky.; *H. A. LINDERER, Supt. Safety & Rules, St. Louis-San Francisco Ry., Springfield, Mo.

Publications Committee—N. A. SUTTON (Chairman), Asst. Supt. Safety & Fire Prevention, St. Louis-San Francisco Ry., Springfield, Mo.; G. J. THOMPSON (Vice Chairman), Supt. Safety, Union Pacific R. R., Omaha, Nebr.; K. E. CRANK, Supt. Program Development, Southern Railway Sys., Atlanta, Ga.; W. R. OTTER, JR., Safety Officer, Chicago & North Western Ry., Chicago, Ill.; R. R. SWIFT, Asst. Supt. of Safety, Southern Pacific Transportation Co., Houston, Texas

Railroad Highway Traffic Safety Committee—P. F. SATTERWHITE, JR. (Chairman), Supt. of Safety, Southern Pacific Transportation Co., St. Louis Southwestern Lines, Houston, Texas; *D. P. RUSSELL (Vice Chairman), Supvr. Bureau of Safety, Loss & Damage Prevention, Canadian Pacific Rail, Montreal, Quebec, Canada; P. L. DISINGER, Coordinator of Safety, Detroit, Toledo & Ironton R. R., Dearborn, Mich.; M. T. LENAHEAN, Div. Safety Officer, Chicago, Rock Island & Pacific Ry., El Reno, Okla.; C. C. McLEAN, Dir. Chicago Reg. Safety & Rules, Burlington Northern, Chicago, Ill.; T. F. NORVELL, Asst. Supt. Safety, St. Louis-San Francisco Ry., Tulsa, Okla.

Research and Contest Committee—H. H. BRADLEY (Chairman), Asst. Vice Pres., Safety & Freight Claim Prev., Southern Railway Sys., Atlanta, Ga.; G. W. GEARHART (Vice Chairman), Gen. Mgr. Safety, Norfolk & Western Ry., Roanoke, Va.; C. S. BURNHAM, Mgr.-Planning, Safety & Freight Claim Prev., Southern Railway Sys., Atlanta, Ga.; D. L. ECKMAN, Supvr. Safety, Western Maryland Ry., Hagerstown, Md.; FRANK STUART, Safety Supvr., Florida East Coast Ry., St. Augustine, Fla.

Training Committee—J. P. FERRON (Chairman), Supt. of Safety, Pacific Fruit Express Co., San Francisco, Calif.; R. D. SHAVER (Vice Chairman), Asst. to Gen. Mgr.-Safety, Atchison, Topeka & Santa Fe Ry., Topeka, Kans.; AAGE BAKKEN, Asst. Supt. of Safety, Southern Pacific Transportation Co., Los Angeles, Calif.; W. F. GRIFFIN, Supt. of Safety & Courtesy, Union Pacific R. R., Los Angeles, Calif.

Staff Representative—F. J. PARKER, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

*Past General Chairman

1970

VOLUME 23

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**SCHOOL and
COLLEGE
SAFETY**



NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611

OFFICERS OF THE

SCHOOL AND COLLEGE CONFERENCE SECTIONS AND COMMITTEES

NATIONAL SAFETY COUNCIL 1970-71

Vice President for Schools and Colleges—JAMES D. LOGSDON, Professor, Florida Atlantic University, Boca Raton, Fla.

Chairman of the Conference—DALIBOR KRALOVEC, Director of Safety, Board of Education, Philadelphia, Pa.

Vice Chairman for Elementary Education—JACOB MACIAG, William C. Bryant School, Chicago, Ill.

Vice Chairman for Secondary Education—MARGARET JOHNSON, Director, Driver Education High School, Northbrook, Ill.

Vice Chairman for College and University—C. FRAZIER DAMRON, Professor, University of Wisconsin, Madison, Wis.

Vice Chairman for Driver Education—RICHARD TOSSELL, Assistant Director, Safety Center, Central Missouri State College, Warrensburg, Mo.

Vice Chairman for Administration and Special Areas—HEMBY MORGAN, Supervisor, Safety Education, State Dept. of Education, Baton Rouge, La.

Secretary—KENNETH F. LICHT, Manager, School and College Dept., National Safety Council, Chicago, Ill.

1970 CONGRESS PROGRAM COMMITTEE

Chairman—FRANKLIN HAERING, Montgomery County Public Schools, Rockville, Md.

Secretary—IVAN ELAND University of Northern Iowa, Cedar Falls, Iowa

Members—JAMES R. BERRY, Oakdale, Iowa; RICHARD BOYER, Montevalo; ROSS CHERRY, San Antonio, Tex.; DEAN COOK, Hartford, Conn.; LARRY FINK, Washington, D.C.; JOHN HARTMAN, Pittsburgh, Pa.; CURT HULTEEN, Richmond, Ky.; DONALD SANFORD, Seattle, Wash.; ERIC SPENCER, Providence, R. I.

Staff Representative—ELLEN BENDRY, National Safety Council, Chicago, Ill.

1971 CONGRESS PROGRAM COMMITTEE

Chairman—ROBERT H. KIRK, Knoxville, Tenn.

Members—DONALD GEHRMAN, Madison, Wis.; EDMUND HERNDON, Lansing, Mich.; FRANK JELICH, Dover, Del.; RUTH JEWELL, Raleigh, N. C.; MARGARET JOHNSON, Northbrook, Ill.; DUANE KIRK, Boise, Ida.; ROBERT KLOSTERMANN, Platteville, Wis.; MONROE MAYO, Lakewood, Colo.; ALBERT ORSBORN, Lansing, Mich.; DONALD RECTOR, Los Angeles, Calif.; LILLIAN SCHWENK, Ames, Iowa, THOMAS SEALS, San Diego, Calif.

Staff Representative—ELLEN BENDRY, National Safety Council, Chicago, Ill.

CONGRESS PROGRAM COMMITTEE

Chairman — ROBERT C. MERRIMAN, Ft. Atkinson, Wis.

Members — FREDERICK ROSS, Chicago, Ill.; WILMA ARCHER (Alternate), Chicago, Ill.; RICHARD TOSSELL, Warrensburg, Mo.; JOHN MORRIS, Champaign, Ill.; HEMBY MORGAN, Baton Rouge, La.; HARVIN COOK (Alternate) ORLANDO SAVASTANO, Providence, R. I.; IVAN ELAND (Alternate) Cedar Falls, Iowa.

Staff Representative — ELLEN BENDRY, National Safety Council, Chicago, Ill.

UNIVERSITY EDUCATION SECTION

Chairman — RICHARD TOSSELL, Central Missouri State College, Warrensburg, Mo.

Immediate Past Chairman — DONALD KOROCH, State Department of Education, Des Moines, Iowa

Vice-Chairman — I. RUSSELL HUTTER, Department of Public Instruction, Madison, Wis.

Secretary — HARVIN COOK, Department of Public Instruction, Springfield, Ill.

Staff Representative — GARY ANDERSON, National Safety Council, Chicago, Ill.

ELEMENTARY SCHOOL SECTION

Chairman — JACOB MACIAG, Wililam C. Bryant School, Chicago, Ill.

Immediate Past Chairman — LORRAINE GILES, Corrigan School, Omaha, Neb.

Vice-Chairman — JEAN BROWN, Grambling College Laboratory School, Grambling, La.

Secretary — MARSNALL NELSON, Lutheran Schurch-Missouri Synod, St. Louis, Mo.

Staff Representative — DIANE IMHULSE, National Safety Council, Chicago, Ill.

COLLEGE AND UNIVERSITY SECTION

Chairman — C. FRAZIER DAMRON, University of Wisconsin, Madison, Wis.

Immediate Past Chairman — IVAN L. ELAND, University of Northern Iowa, Cedar Falls, Iowa

Vice-Chairman — LEON BRODY, New York University, New York, N. Y.

Secretary — RICHARD BISHOP, Florida State University, Tallahassee, Fla.

Staff Representative — JACK N. GREEN, National Safety Council, Chicago, Ill.

CAMPUS SAFETY ASSOCIATION, COLLEGE AND UNIVERSITY SECTION

Chairman — MARVIN WELLS, California Institute of the Arts, Valencia, Calif.

Immediate Past Chairman — DUGALD PINYAN, Lawrence Radiation Laboratory, Livermore, Calif.

Vice-Chairman — EARL BOYD, University of Wisconsin, Madison, Wis.

Secretary — RAY KETCHMARK, University of Illinois at Chicago Circle, Chicago, Ill.

Staff Representative — ERIC SPENDER, Brown, University, Providence, R. I.

Treasurer — RAYMOND HALL, University of Colorado, Boulder, Colo.

Staff Representative — JACK N. GREEN, National Safety Council, Chicago, Ill.

TEACHER EDUCATION AND RESEARCH, COLLEGE AND UNIVERSITY SECTION

Chairman — THOMAS SEALS, San Diego County Schools, San Diego, Calif.

Immediate Past Chairman — RICHARD BISHOP, Florida State University, Tallahassee, Fla.

Vice-Chairman — AUGUST SHULTZ, Stout State University, Menomonie, Wis.

Secretary — LILLIAN C. SCHWENK, Iowa State University, Ames, Iowa.

Staff Representative — JACK N. GREEN, National Safety Council, Chicago, Ill.

DIVISION OF COLLEGE AND UNIVERSITY SAFETY CENTERS, COLLEGE AND UNIVERSITY SECTION

Chairman — BERNARD L. LOFT, Indiana University, Bloomington, Ind.

Immediate Past Chairman — ROBERT O. NOLAN, Michigan State University, East Lansing, Mich.

Vice-Chairman — RICHARD TOSSELL, Central Missouri State College, Warrensburg, Mo.

Secretary — MILTON D. RHOADS, Oklahoma State University, Stillwater, Okla.

Staff Representative — JACK N. GREEN, National Safety Council, Chicago, Ill.

DIVISION OF SCIENCE AND ENGINEERING, COLLEGE AND UNIVERSITY SECTION

Chairman — IVAN ELAND, University of Northern Iowa, Cedar Falls, Iowa

Immediate Past Chairman — ROBERT H. KIRK, The University of Tennessee, Knoxville, Tenn.

Vice-Chairman — DENIS KIGIN, Arizona State University, Tempe, Ariz.

Secretary — PATRICK EAKER, University of Wisconsin at Milwaukee, Milwaukee, Wis.

Staff Representative — JACK H. GREEN, National Safety Council, Chicago, Ill.

SCHOOL SAFETY ADMINISTRATION AND SUPERVISION

Chairman — HEMBY MORGAN, State Department of Education, Baton Rouge, La.

Immediate Past Chairman — LOUIS L. DEGIACOMO, Public Schools, Boston, Mass.

Vice Chairman — DANIEL DEMAURO, Broward County Schools, Fort Lauderdale, Fla.

Secretary — FRANKLIN HAERING, Montgomery County Public Schools, Rockville, Md.

Staff Representative — FRACK C. MISKOW, National Safety Council, Chicago, Ill.

DIVISION OF STANDARD REPORTING OF STUDENT AND SCHOOL EMPLOYEE ACCIDENTS

SCHOOL SAFETY ADMINISTRATION AND SUPERVISION

Chairman — LONNIE GILLILAND, Central State College, Edmond, Okla.

mediate Past Chairman — DANIEL DEMAURO, Broward County Schools, Fort Lauderdale, Fla.

e-Chairman — JOHN HARTMAN, Public Schools, Pittsburgh, Pa.

retary — ROBERT MERRIMAN, Ft. Hill High School, Ft. Atkinson, Wis.

ff Representative — DIANE IMHULSE, National Safety Council, Chicago, Ill.

AMERICAN VOCATIONAL ASSOCIATION NATIONAL SAFETY COUNCIL JOINT SAFETY COMMITTEE

irman — JAMES O. REYNOLDS, Public Schools, Dayton, Ohio

ff Representative — HAROLD HELDRETH, Manager, Youth Department, National Safety Council, Chicago, Ill.

NATIONAL SCHOOL SAFETY HONOR ROLL COMMITTEE

irman — RUTH JEWELL, State Department of Public Instruction, Raleigh, N. C.

ges — IVAN L. ELAND, Cedar Falls, Iowa; LILLIAN GILLILAND, Oklahoma City, Okla.; FRANKLIN HAERING, Rockville, Md.; DALIBOR KRALOVEC, Philadelphia, Pa.; MILTON LITTERST, Peoria, Ill.; EDWARD MASOOD, Baltimore, Md.; ORLANDO SAVASTANO, Providence, R. I.; CLARENCE WHEELER, Hamilton, Ohio; ED WILLIAMSON, Tallahassee, Fla.

ff Representative — ELIZABETH LENNOX, National Safety Council, Chicago, Ill.

PLAN NOW TO ATTEND THE

1971 NATIONAL SAFETY CONGRESS OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

1972 The Congress is always a big week, a worthwhile week for the 13,000 safety people who attend.

1973 At the '71 Congress you can meet other safety people, with the same problems and responsibilities as yourself. You can exchange views and ideas on accident prevention, health, hygiene, and fire prevention . . . on safety in industry, traffic, school, at home and on the farm.

1974 You can see the largest of all safety equipment exhibits at the Congress . . . an opportunity for you to make well-informed buying decisions for your company.

This four-day educational program, planned and presented by the National Safety Council, can be your most thought-provoking, most worthwhile safety experience in 1971.

Make plans early to attend the 1971 Congress and bring the other people in your organization who have safety responsibilities.

FUTURE CONGRESS DATES

1971	October	25-28
1972	Oct. 30 - Nov. 2	
1973	Oct. 29 - Nov. 1	
1974	Sept. 30 - Oct. 3	

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

1970

VOLUME 24

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**TRAFFIC;
DRIVER
IMPROVEMENT**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

5
8
10
14

16
18
20
23
25
27
31
33
34
45
60

5
1
5
1

MEMBERS OF THE EXECUTIVE COMMITTEE

TRAFFIC CONFERENCE

NATIONAL SAFETY COUNCIL 1970-71

Chairman of the Conference—LOUIS P. SPITZ

Vice Chairman—DOUGLAS M. FERGUSON

Vice President—JAMES P. ECONOMOS

Standing Committee Chairmen: Nominating and Membership Committee—JOSEPH E. LEMA; Traffic Education and Training Committee—STANLEY A. ABERCROMBIE; Highway Safety Program Services Coordinating Committee—DANIEL J. HANSON; Traffic Accident Data Project Committee—DAVID M. BALDWIN; Congress Program Committee—GLENN V. CARMICHAEL; Committee on Alcohol and Drugs—KURT M. DUBOWSKI; Committee on Winter Driving Hazards—ROSS G. WILCOX; Committee on Motor Vehicle Traffic Safety at Railroad Grade Crossings—H. H. BRADLEY; Problems and Needs Study Committee—LEE N. HAMES; Awards Committee—JOHN E. BAERWALD; Policies Committee—ROBERT L. MARSHALL; Safety Belt Usage Committee—M. R. DARLINGTON, JR.; Ad Hoc Committee on Motor Vehicle Safety—E. A. WHITEHURST

Conference Representatives of the National Safety Council Board of Directors—M. R. DARLINGTON, JR.; MATTHEW C. SIELSKI; DOUGLAS M. FERGUSON; ROY C. HAEUSLER; JAMES L. KARNs; GORDON H. SHEEHE; JAMES M. SLAVIN; LOUIS P. SPITZ

Members-at-Large—BERNARD F. HILLENBRAND; J. OLAN COOPER; WILLIAM H. FRANEY; A. B. KELLEY; ROBERT F. BORKENSTEIN

NA677

1970

VOLUME 25

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**WOOD PRODUCTS;
TEXTILE
INDUSTRIES**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

MEMBERS OF THE EXECUTIVE COMMITTEE

WOOD PRODUCTS SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—DENTON SHELL, Safety & Personnel Dir., Tremont Lumber Co., Joyce, La.

Vice Chairman & Program Chairman—E. PAUL, LeROY, Safety Coordinator, Timberlands, Weyerhaeuser Co., Tacoma, Wash.

Newsletter Editor—C. R. RUSTEMEYER, Mgr. of Safety, Canadian Forest Products Ltd., Vancouver 1, B. C., Canada

Secretary and Membership Chairman—JERRY W. NETTERVILLE, Supervisor, Industrial Relations, Southern Timber Operations, Crown Zellerbach Corp., Bogalusa, La.

Sawmilling Committee—JOSEPH C. BECKMAN (Chairman), Dir. of Safety, Weyerhaeuser Co., Tacoma, Wash.; S. L. GREGORY, Safety Dir., Pope & Talbot, Inc., Portland, Ore.; ROY EVANS, Connor Forest, Wausau, Wis.; *ROY F. POWELL, Safety Dir., Potlatch Forests, Inc., Warren, Ark.; A. S. (STAN) MORRIS, Ass't. Mgr., Forest Products Accident Prevention Assn., Toronto 1, Ont., Canada; JOHN J. HARPER, Safety Dir., Koppers Co., Inc., Forest Products Div., Pittsburgh, Pa.; *W. M. ALLISON, Mgr. of Accident Control Dept., Council of the Forest Industries, Vancouver 1, B. C., Canada; RALPH H. HARDING, Jr., International Paper Co., Long Bell Div., Amboy, Wash.; LIONEL LANDRY, Secretary, Southern Forest Products Assn., New Orleans, La.; ELMER BOE, Personnel Coordinator, Crown Zellerbach Canada Ltd., Ladysmith-Nanaimo Lakes Div., Ladysmith, B. C., Canada; LOUIS L. POSEY, Diamond National Co., Northwest Lumber Div., Coeur d'Alene, Idaho; *THOMAS L. RASMUSSEN, Consultant, Connor Forest Industries, Laona, Wis.; TROY BRASHEARS, Safety Engineer, Lumbermen Reciprocal Insurance Exchange, Little Rock, Ark.; WAYNE PARKER, Personnel & Safety Dir., Hunt Lumber Co., Inc.; Ruston, La.; M. MALONEY, Safety Dir., Boise Cascade Corp., Boise, Idaho

Logging Committee—J. K. LEWIS (Chairman), Personnel Mgr., I. T. T. Rayonier Inc., Hoquiam, Wash.; *JOE T. DUNLOP, Div. Safety Supervisor, Weyerhaeuser Co., Dierks Div., De Queen, Ark.; HAYWOOD NUTT, Roy O. Martin Lumber Co., Alexandria, La.; CLYDE HILL, Safety Supervisor, Alaska Lumber & Pulp Co., Inc.; Sitka, Alaska; HARRY ZWIG, Safety Services Mgr., St. Regis Paper Co., Tacoma, Wash.; MELVIN H. COUSINS, Safety Supervisor, Canadian Forest Products Ltd., Woss Lake, Beaver Cove, B. C., Canada; ROBERT O'CONNOR, Personnel & Safety Supervisor, Crown Zellerbach Corp., Portland, Ore.; TONY W. SHILLINGER, Dir. & Coordinator, TOC Safety Div., Timber Operators Council Inc., Portland, Ore.; WILLIAM D. THOMSON, Mgr. Accident Prevention, Northern Interior Lumbermens Assn., Prince George; B. C., Canada; L. A. KINGMAN, MacMillan Bloedel, Ltd., Vancouver, B. C., Canada; GEORGE L. BURNS, Dir. of Accident Control, Council of Forest Industries, Vancouver 1, B. C., Canada; HANTZ ROTZ, Logging Safety Supervisor, Simpson Timber Co., Shelton, Wash.; THOMAS E. NORTH, Ass't. Mgr. of Ind. Relations, Rayonier Inc., Vancouver, B. C., Canada; LAWRENCE S. PENKAVA, Safety Services Mgr., State Accident Insurance Fund, Salem, Ore.; *E. H. REEVES, Gen. Mgr., Forest Products Accident Prevention Assn., Toronto, 1, Ont., Canada; DONALD W. DALE, Timberland Safety Coordinator, Dierks Div., Weyerhaeuser Co., Queen, Ark.

Veneer and Plywood Committee—G. S. FARMER (Chairman), Safety Dir., Georgia-Pacific Corp., Crossett, Ark.; J. JOEL O'BRIANT, Personnel Mgr. of Miss. Oper., Georgia-

Pacific Corp., Louisville, Miss.; JOHN D. TAYLOR, Personnel Mgr. of La. Oper., Georgia-Pacific Corp., Ureana, La.; *J. S. BOWMAN, Dir. of Loss Prevention Services, U. S. Plywood-Champion Papers, Inc., New York, N. Y.; STANLEY J. BUTCHER, Chief, Div. of Curriculum Dev., Bureau of Labor Standards, U. S. Department of Labor, Washington, D. C.; D. L. CAMERON, Hartford Insurance Group, Little Rock, Ark.; GEORGE W. NORRIS, Asst. Mgr., Council of the Forest Industries, Vancouver, B. C., Canada; FRANCIS E. ELY, Dir. Field Operations, State Accident Ins. Fund, Salem, Ore.; L. W. HAGERUP, Lumbermens Mutual Casualty Co., Mutual Insurance Bldg., Chicago, Ill.; DALE J. HOWARD, Mgr. Loss Control, Evans Products Co., Portland, Ore.; JOHN D. MEALEY, Regional Mgr., Safety & Health Services, Employers Insurance of Wausau, Portland, Ore.; TOM HOLLAS, Loss Prevention Coordinator, United States Plywood, Weldwood Canada, Ltd., Vancouver 3, B. C., Canada; HERB PASHKOWSKI, Oregon Div., U. S. Plywood-Champion Papers, Inc., Eugene, Ore.; FRANK N. BERGLUND, Corp. Safety Dir., Roseburg Lumber Co., Roseburg, Ore.; THOMAS E. SIVILS, Personnel Mgr., Georgia-Pacific Corp., Crossett, Ark.

Furniture and Millwork Committee—V. K. ANDERSON (Chairman), Safety Dir., Kroehler Manufacturing Co., Naperville, Ill.; ROBERT J. DUNNAGAN, Area Safety Supervisor, North Carolina Department of Labor, Winston-Salem, N. C.; *R. C. CHILDRRESS, Personnel Mgr., Cooperage Div., National Distillers Products Co., Memphis, Tenn.; C. H. WRIGHT, Plant Engineer, Jos. E. Seagram & Sons, Inc., Louisville, Ky.; DOUGLAS BRACKETT, Dir. of Services, Southern Furniture Mfg. Assn., High Point, N. C.; WILLIAM C. CORROTTO, Personnel & Safety Mgr., Riverside Furniture Corp., Fort Smith, Ark.; THOMAS B. KNIGHT, Ind. Safety Inspector, North Carolina Department of Labor, Greensboro, N. C.

Noise Control Committee—JOHN D. MEALEY (Chairman), Regional Mgr., Safety & Health Services, Employers Insurance of Wausau, Portland, Ore.; DAN ADAIR, Safety Coordinator, Pacific Coast Assn. of Pulp & Paper Mfg., Portland, Ore.; *HOWARD A. CURTIS, Gen. Safety Supervisor, Simpson Timber Co., Shelton, Wash.; *K. L. GIPSON, Corp. Dir. of Safety & Workmen's Comp., Georgia-Pacific Corp., Portland, Ore.; JOSEPH C. BECKMAN, Dir. of Safety, Weyerhaeuser Co., Tacoma, Wash.; TONY W. SHILLINGBURG, Dir. & Coordinator TOC, Safety Div., Timber Operators Council, Inc., Portland, Ore.; E. PAUL LeROY, Safety Coordinator, Timberlands, Weyerhaeuser Company, Tacoma, Wash.; K. L. PATRICK, Dir. of Safety, Western Woods Products Assn., Portland, Ore.; J. K. LEWIS, Personnel Mgr., I. T. T. Rayonier, Inc., Hoquiam, Wash.; G. S. FARMER, Safety Dir., Georgia-Pacific Corp., Crossett, Ark.; V. K. ANDERSON, Safety Dir., Kroehler Manufacturing Co., Naperville, Ill.

Liaison with Cooperage Association—C. H. WRIGHT, Plant Engineer, Jos. E. Seagram & Sons, Louisville, Ky.

Coordinator with Cameron Award—*HOWARD A. CURTIS, Gen. Safety Supervisor, Simpson Timber Co., Shelton, Wash.

Nominating Committee—*HOWARD A. CURTIS, Gen. Safety Supervisor, Simpson Timber Co., Shelton, Wash.; *K. L. GIPSON, Corp. Dir. of Safety & Workmen's Comp., Georgia-Pacific Corp., Portland, Ore.; *ROY F. POWELL, Safety Dir., Potlatch Forests, Inc., Warren, Ark.

Staff Representative—EDWARD J. SEDLACEK, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

*Past General Chairman

MEMBERS OF THE EXECUTIVE COMMITTEE

TEXTILE SECTION

NATIONAL SAFETY COUNCIL 1970-71

General Chairman—JOHN M. McALPINE, Celanese Fibers Co., Rock Hill, S. C.

First Vice Chairman—W. E. VINSON, American Mutual Ins. Companies, Atlanta, Ga.

Second Vice Chairman—S. L. SWEARENGIN, Fiber Industries, Inc., Salisbury, N. C.

Secretary—VIRGIL EACKLES, Celanese R&D, Charlotte, N.C.

Newsletter Editor—JOHN C. JORIS, American Mutual Insurance Cos., New Orleans, La.

Engineering and Health Committee—B. HEFLIN HAYNES (Chairman), V.P.-Personnel, Avondale Mills, Sylacauga, Ala.; J. L. COFIELD, The Rossville Cos., Rossville, Ga.; *A. E. CONNELLY, E. I. duPont de Nemours & Co., Cape Fear Plant, Wilmington, N.C.; HOWARD J. GORDON, Div. Supt., Rock Hill Printing & Finishing Co., Rock Hill, S. C.

Education and Training Committee—J. H. PRICE (Chairman), Vice Pres., Texas Cotton Ginn Assn., Dallas, Tex.; KENNETH BAGGETT, Field Crest Mills, Inc., Spray, N. C.; *I. M. DAVIDSON, Division Engineering Manager, American Mutual Ins. Cos., Atlanta, Ga.; W. P. GRIER, JR., Safety Coord., Spring Mills, Inc., Fort Mill, S. C.

Synthetic Fiber Committee—JOHN O. EXLEY III (Chairman), Safety Supt., E. I. duPont de Nemours & Co., Martinsville, Va.; RAYMOND D. WILSON, Monsanto Textiles, Decatur, Ala.; S. L. SWEARENGIN, Supvr., Safety and Plant Protection, Fiber Industries, Inc., Salisbury, N. C.

Cotton Ginning Committee—VERNON P. MOORE (Chairman), U.S.D.A. Research Lab., Leland, Miss.; ARTHUR B. BOND, Spec. Prod. Mktg. Div., National Cotton Council, Memphis, Tenn.; ROBERT COLLINS, Southern Ginners Assn., Memphis, Tenn.; *CHARLES L. TROMMER, Mohasco Industries, Inc., Amsterdam, N. Y.

Membership Committee—*C. L. TROMMER (Chairman), Mohasco Industries, Inc., Amsterdam, N. Y.; FRED SNOGRASS, Beaunit Fibers, Elizabethton, Tenn.; JAMES STROTHER, Director of Employers Ins., West Point-Pepperell, Inc., West Point, Ga.

Off-the-Job Committee—*GUY BOOKER (Chairman), Monsanto Co., Pensacola, Fla.; *A. E. CONNELLY, Safety Supvr., E. I. duPont Nemours & Co., Inc., Cape Fear Plant, Wilmington, N. C.

Fire Committee—HERBERT J. KOLODNER (Chairman), Celanese Corp., Charlotte, N. C.; *JOHN G. SAYERS, JR., Safety Consultant, Employers Ins. of Wausau, Charlotte, N. C.

Publicity and Association Committee—S. L. SWEARENGIN, Fiber Industries, Inc., Salisbury, N. C.; *MRS. IDA C. AYERS, Asst. to Director of Personnel, Collins & Aikman, Albemarle, N. C.; *JOHN G. SAYERS, Safety Consultant, Employers Ins. of Wausau, Charlotte, N. C.

Contest Committee—*E. L. PERMENTER (Chairman), Textile Loss Prevention Dept., Liberty Mutual Co., Spartanburg, S. C.; HOWARD J. GORDON, Rock Hill Printing & Finishing Co., Rock Hill, S. C.

Standards Committee—W. E. VINSON (Chairman), American Mutual Ins. Cos., Atlanta, Ga.; RAYMOND D. WILSON, Monsanto Textiles, Decatur, Ala.; *FRED DERRICK, S. C. Industrial Commission, Columbia, S. C.; B. HEFLIN HAYNES, V. P.-Personnel, Avondale Mills, Sylacauga, Ala.; *E. L. PERMENTER, Div. Serv. Mgr. Textile, Textile Loss Prevention Dept., Liberty Mutual Ins. Co., Spartanburg, S. C.

Nomination Committee—*I. M. DAVIDSON (Chairman), Div. Engr. Mgr., American Mutual Ins. Cos., Atlanta, Ga.; *C. L. TROMMER, Mohasco Industries, Amsterdam, N. Y.; *GUY A. BOOKER, Monsanto Co., Pensacola, Fla.

Advisory Committee—B. S. STRENGTH (Chairman), GUY A. BOOKER, MRS. IDA C. AYERS, A. E. CONNELLY, FORREST N. PETTY, E. L. PERMENTER, H. S. BAUCOM, C. L. TROMMER, R. I. BARR, GLENN G. FLEMMING, JOHN G. SAYERS, I. M. DAVIDSON, FRED DERRICK

Staff Representative—E. E. KOCH, National Safety Council, 425 N. Michigan Ave., Chicago, Ill. 60611

*Past General Chairman

1970

VOLUME 28

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**HOME
SAFETY**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**

After all, physical fitness is a quality of life we should retain as long as possible. We can all agree that the years in later life should be happy ones, full of promise if we have the energy and zest to use them well. The only way to remain alert is to be lively, and to continue that way we must have opportunity. Designers can provide it for us or deprive us of it. Of course, location of the housing often will determine the amount of outdoor space which, in turn, is related to land costs.

Housing for older people should be in active areas, close to facilities of all kinds and providing easily accessible and regular public transportation. In smaller towns, main street is an ideal location, as it is in large cities if land costs permit. If on an outlying site, transportation becomes more critical and overcoming isolation equally so. In suburban areas we might consider planning in conjunction with large shopping centers or build jointly with other public and private programs that bring the community to or near the housing site. This might include specialty shops, garden club headquarters, church social buildings, educational installations, or other people-attracting developments. All to defeat isolation and increase interest. We have seen housing for retirees successfully joined with gymnasiums for high school youth, community centers jointly used by university students, and housing for the elderly on the same site; some floors of hotels or of office buildings in downtown areas—each such combination contributing to opportunities for the older person to be part of an active environment of all age groups.

We could not close any discussion of home related accidents without reflecting the unreasonable risk of injuries due to household products. The report of the National Committee on Product Safety, as this organization knows, states that 20 million Americans are injured each year in the home as a result of incidents connected with consumer products. Of the total, 110,000 are permanently disabled and 30,000 are killed. The report

states that a majority of American homes contain potential fire hazards due to worn or defective wiring, overloaded circuits, or an absence of grounding. They further state that injuries result from dim lighting, uneven floors, irregular steps, slippery surfaces, obstacles, and steep inclines. From experience we know that stove design may cause or decrease burns; that unvented gas heaters are hazardous; and that unmarked and non-shatterproof glass on sliding doors can be very dangerous, particularly if sight is dim. Safety must be the first concern with design and equipment with proper engineering and product safety the determinants when selecting equipment for the elderly.

The National Safety Council is doing yeoman service and its efforts must be backed up by the housing designer by combining the prospect of not only a longer life but a safe and fulfilling one.

In conclusion, shelter often is the basis of man's emotional and psychological posture in society. To the degree that it is satisfying, he will in the older years often sacrifice other needs to sustain it. Dignity and self esteem may be lost when the living environment is insensitive or substandard, rendering it damaging to the body, the psyche, or emotions, the sense of security and status. Proper design of the housing environment will minimize these physical and psychological components of living and also will reduce accidents and the serious disruption they cause by innumerable falls, broken bones, pain, incapacity, or death.

Life for most of us, regardless of income or age is a continuous, if often subconscious certainty that the beautiful images we gather on the way must, in the near future, become realities and transform our hum-drum existence. For some, thoughtful and safe retirement housing makes this dream, this human aspiration, this eternal hope come true, at least in the later years. What a worthy goal and, happily, an accomplishable one. Let's be about it.

MEMBERS OF THE EXECUTIVE COMMITTEE

HOME CONFERENCE

NATIONAL SAFETY COUNCIL 1970-71

DUDLEY G. ANDERSON, Chief, Accident Prevention Div., Department of Human Resources, Health Services Admin., Washington, D. C.; SIDNEY F. ASCHER, Product Safety Consultant, Food & Drug Admin., New York, N. Y.; J. ALAN BERGMAN, Staff Director, Council on Family Health, New York, N. Y.; CAESAR BRANCHINI, Croton-on-Hudson, N. Y.; H. E. BREHM, Director, Corporate Product Safety, Research and Engineering Center, Whirlpool Corp., Benton Harbor, Mich.; WILLARD E. BRYANT, Director of Technical Services, National Association of Home Builders, Washington, D. C.; FRANK BURGMEIER, Frank Burgmeier Co., Syracuse, N. Y.; ROBERT BURNSIDE, Asst. National Director, Safety Programs, American National Red Cross, Washington, D. C.; CHARLES M. CAMERON, JR., M.D., Professor & Chairman, Dept. of Health Administration, School of Health, University of Oklahoma Medical Center, Oklahoma City, Okla.; J. P. CARROLL, Manager, Loss Prevention, The Society of the Plastics Industry, Inc., New York, N. Y.; MRS. MARILEE B. CAVENDER, Public Health Advisor, Bureau of Product Safety, FDA, Washington, D. C.; WARREN L. CHEEK, Director of Training, National Rifle Association of America, Washington, D. C.; AUSTIN C. CHIDESTER, JR., Asst. Manager, Delaware Safety Council, Inc., Wilmington, Del.; ALLAN B. COLEMAN, M.D., Chairman, Committee on Accident Prevention, American Academy of Pediatrics, Washington, D. C.; MRS. VIRGINIA C. COLFLESH, R.N., Medical Research Scientist I, Bureau of Planning, Evaluation & Research, Pennsylvania State Department of Health, Harrisburg, Pa.; WILLIAM S. COMSTOCK, Director of Public Affairs, Association of Home Appliance Manufacturers, Chicago, Ill.; MISS NETTIE DAY, Chief, Accident Prevention Section, North Carolina State Board of Health, Raleigh, N. C.; MISS HELENE DEMING, Director, Division of Injury Control, Iowa State Department of Health, Des Moines, Iowa; EDMOND D. DUFFY, JR., Coordinator, Accident Prevention and Poison Control Program, New Jersey State Department of Health, Trenton, N. J.; DONALD A. DUKELOW, M.D., Asst. Director, Department of Health Education, American Medical Association, Chicago, Ill.; ROBERT G. FRAZIER, M.D., Executive Director, American Academy of Pediatrics, Evanston, Ill.; MRS. SALLY GENDREW, Director, Home Division, Louisville Safety Council, Louisville, Ky.; DAN D. GOWINGS, Assistant Professor, Department of Physiology & Health Services, Ball State University, Muncie, Ind.; GEORGE W. HARPER, Professor of Industrial Engineering, University of Illinois, Urbana, Ill.; VIRGINIA G. HARRIS, M.D., Director, Bureau of Maternal and Child Health, Onondaga County Health Department, Syracuse, N. Y.; STANLEY L. HARRISON, M.D., Director, Department of Committees, American Academy of Pediatrics, Evanston, Ill.; HAROLD HOWE, Executive Secretary, Outdoor Power Equipment Institute, Inc., Washington, D. C.; GEORGE M. JAMES, Housing Manager, Washington Park Homes, CHA, Chicago, Ill.; WALTER U. JOHNSON, Public Health Advisor, Bureau of Product Safety, FDA, Washington, D. C.; RUDARD A. JONES, Director, Research Professor of Architecture, Small Homes Council—Building Research Council, University of Illinois, Champaign, Ill.; (Represents Am. Institute of Architects); DAVID JEFFREYS, Vice President for Organizational Relations, National Center for Voluntary Action, Washington, D. C.; WILLIAM J. KERNS, Refinery Safety Advisor, Humble Oil & Refining Co., Linden, N. J.; THOMAS C. KLAPPERICH, Regional Program Chief, Injury Control, U.S. Public Health Service, Chicago, Ill.; DAVID KLEIN, Professor of Social Science and Human Development, Department of Social Science, Michigan State University, East Lansing, Mich.; MISS DOROTHEA J. LEWIS, Director, Information Division, Administration on Aging, HEW, Washington, D. C.; CARMEN F. MANDIA, Supervisor, Emergency Medical Care and Injury Control Section, New York State Department of Health, Albany, N. Y.; MRS. MARJORIE B. MAY, Director, Education and Home Division, Greater New York Safety Council, New York, N. Y.;

MRS. MARIE C. McGUIRE, Program Advisor for Elderly and Handicapped, HUD, Washington, D. C.; D. COMPTON McKERAHAN, Chief, Division of Safety Management, U. S. Bureau of Indian Affairs, DOI, Albuquerque, N. M.; LEVITTE MENDEL, Assoc. Director, National Health Council, New York, N. Y.; ROGER J. MEYER, M.D., Evanston, Ill.; PAUL O'CONNOR, Technical Assistance Director, American Nursing Home Association, Washington, D. C.; FLOYD B. OGLESBAY, Chief, Injury Control Branch, Bureau of Community Environmental Management, U.S. Public Health Service, Cincinnati, Ohio; HENRY OMSON, Director, Standards Division, Mobile Homes Manufacturers Association, Chicago, Ill.; LARRY A. PAHIGIAN, North Andover, Mass. (Represents Academy of General Practice of Pharmacy); ALBERT L. PHILLIPS, Manager, Employee Safety, American Gas Association, Arlington, Va.; MISS GLENDA PIFER, Housing and Equipment Specialist, University of Illinois, Urbana, Ill.; NICHOLAS POHLIT, Executive Director, National Environmental Health Association, Denver, Colo.; GEORGE H. POPE, Managing Engineer, Casualty & Chemical Hazards Dept., Underwriters' Laboratories, Inc., Northbrook, Ill.; MARVIN H. POWELL, Deputy Manager, Utah Safety Council, Salt Lake City, Utah; MISS JEANNE PRIESTER, Program Leader, Home Economics, Extension Service, USDA, Washington, D. C.; J. A. PROVEN, Executive Manager, Power Tool Institute, Inc., Evanston, Ill.; ALAN REED, Mgr., Engineering Services, Daniel Woodhead Co., Northbrook, Ill.; DEUEL RICHARDSON, Director of Public Information, National Fire Protection Association, Boston, Mass.; WILLIAM H. ROCKWELL, Assistant Secretary, Director of Certification, American National Standards Institute, Inc., New York, N. Y.; MANUEL RODSTEIN, M.D., Sr. Associate Medical Director, The Equitable Life Assurance Society of the U. S., New York, N. Y.; A. B. ROSENFELD, M.D., Director, Division of Special Services, Minnesota State Department of Health, Minneapolis, Minn.; RICHARD L. SANDERSON, Executive Director, Building Officials and Code Administrators International, Inc., Chicago, Ill.; FREDERIC L. SCHOEN, M.D., Fort Wayne, Ind. (Represents American Academy of General Practice); MISS MARIE SCOTT, Manager, Communication Service & Division Safety Coordinator, Maxwell House Div., General Food Corp., Hoboken, N. J. (Represents American Society of Safety Engineers); HILLA SHERIFF, M.D., Asst. State Health Officer, South Carolina State Board of Health, Columbia, S. C.; PERCY H. SHUE, Assistant Secretary for Program Development, Kiwanis International, Chicago, Ill.; RUBY M. SMITH, Ph.D., Professor, School of Home Economics, Eastern Illinois University, Charleston, Ill. (Represents Illinois Home Economics Assn.); THOMAS R. THIEBAUT, Program Analyst, Bureau of Product Safety, FDA, Washington, D. C.; MRS. ALICE TICE, Executive Director, Roanoke Valley Safety Council, Roanoke, Va.; RAYMOND L. TYLER, Chief, Accident Control Section, Environmental Community Health Services, Philadelphia Department of Public Health, Philadelphia, Pa.; JAMES T. WADKINS, Managing Director, Richmond Area Safety Council, Richmond, Va.; JULIAN A. WALLER, M.D., Professor of Community Medicine, University of Vermont, Burlington, Vt.; WILLIAM F. WASLICK, Director of Marketing, Advanced Learning Systems, Inc., Princeton, N. J.

PLAN NOW TO ATTEND THE

1971 NATIONAL SAFETY CONGRESS OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

1972 The Congress is always a big week, a worthwhile week for the 13,000 safety people who attend.

1973 At the '71 Congress you can meet other safety people, with the same problems and responsibilities as yourself. You can exchange views and ideas on accident prevention, health, hygiene, and fire prevention . . . on safety in industry, traffic, school, at home and on the farm.

1974 You can see the largest of all safety equipment exhibits at the Congress . . . an opportunity for you to make well-informed buying decisions for your company.

This four-day educational program, planned and presented by the National Safety Council, can be your most thought-provoking, most worthwhile safety experience in 1971.

Make plans early to attend the 1971 Congress and bring the other people in your organization who have safety responsibilities.

FUTURE CONGRESS DATES

1971	October	25-28
1972	Oct. 30	- Nov. 2
1973	Oct. 29	- Nov. 1
1974	Sept. 30	- Oct. 3

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

PB-3375-143-SB
75-69T
C
B/T

1970

VOLUME 27

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**PUBLIC
SAFETY**



NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611

OFFICERS OF THE PUBLIC SAFETY CONFERENCE NATIONAL SAFETY COUNCIL 1970-71

Vice President—ROBERT A. OLEN, Vice President, Crane Carrier, Canada, Ltd., Rexdale, Ontario, Canada.

Chairman—JOHN T. COLLIER, Director of Special Projects, Social & Rehabilitation Service, U. S. Department of Health, Education and Welfare, Washington, D. C.

Vice Chairman—EDMOND J. MONGEON, National Director, Water Safety Programs, American National Red Cross, Washington, D. C.

Chairman, Water Safety Committee—DONALD M. HIGGINS, Director, Health & Safety Services, Boy Scouts of America, New Brunswick, N. J.

Chairman, Shooting Safety Committee—STANLEY A. MATE, Director, Competitions, Training & Facilities Division, National Rifle Association of America, Washington, D. C.

Chairman, Winter Sports Safety Committee—JAMES GARRICK, M.D., Dir. of Sports, Social Rehabilitation Medicine, University of Washington, Seattle, Wash.

Chairman, Camping Safety Committee—JOHN H. HAST, Chief, Division of Safety, National Park Service, Department of the Interior, Washington, D. C.

Chairman, Evaluation and Planning Committee—ALAN L. KLING, Long Island, N. Y.

Chairman, Eye Protection Committee—JOHN M. KANAK, Safety Officer, U. S. Dept. of Health, Educ. & Welfare, Washington, D. C.

Chairman, Distinguished Service to Safety Awards Committee—CAPTAIN DAVID OLIVER, Secretary, American Boat & Yacht Council, New York, N. Y.

Chairman, Falls in Public Places Committee—ALBERT P. ISKRANT, Statistician, National Center for Health Services, Research and Development, Rockville, Md.

Chairman, Safety Congress Program Planning Committee—STANLEY A. MATE, Director, Competitions, Training & Facilities Division, National Rifle Association of America, Washington, D. C.

Chairman, Nominating and Membership Committee—LOUIS F. LUCAS, Executive Director, National Rifle Association of America, Washington, D. C.

Secretary, Public Safety Conference and Manager, Public Safety Department, NSC—JOHN P. FLEMING, National Safety Council, Public Safety Department, 425 N. Michigan Avenue, Chicago, Ill. 60611.

PB-3375-143-SB

75-69T

C

B/T

PLAN NOW TO ATTEND THE

1971

NATIONAL SAFETY CONGRESS

OCTOBER 25-28, 1971 / CONRAD HILTON HOTEL, CHICAGO

1972

The Congress is always a big week, a worthwhile week for the 13,000 safety people who attend.

1973

At the '71 Congress you can meet other safety people, with the same problems and responsibilities as yourself. You can exchange views and ideas on accident prevention, health, hygiene, and fire prevention . . . on safety in industry, traffic, school, at home and on the farm.

1974

You can see the largest of all safety equipment exhibits at the Congress . . . an opportunity for you to make well-informed buying decisions for your company.

This four-day educational program, planned and presented by the National Safety Council, can be your most thought-provoking, most worthwhile safety experience in 1971.

Make plans early to attend the 1971 Congress and bring the other people in your organization who have safety responsibilities.

FUTURE CONGRESS DATES

1971	October 25-28
1972	Oct. 30 - Nov. 2
1973	Oct. 29 - Nov. 1
1974	Sept. 30 - Oct. 3

NATIONAL SAFETY COUNCIL
425 NORTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60611

62-841-0500-09
100-200

1970

NA677

VOLUME 26

**NATIONAL SAFETY CONGRESS
TRANSACTIONS**

**EARLY
MORNING
SESSIONS**



**NATIONAL SAFETY COUNCIL
425 North Michigan Avenue
Chicago, Illinois 60611**