NATIONAL FIRST-AID AND MINE RESCUE CONTEST, FORT WAYNE, IND., SEPTEMBER 29 AND 30 AND OCTOBER 1, 1953

BY R. G. WARNCKE

* * * * * * * * * * **Information Circular 7710**

UNITED STATES DEPARTMENT OF THE INTERIOR
Douglas McKay, Secretary
BUREAU OF MINES
J. J. Forbes, Director

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March 1955

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by

R. G. Warncke[1/]

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In the 1953 National First-Aid and Mine Rescue Contest, 58 teams from 9 States participated, 14 teams from 6 States in mine rescue and 47 teams from 9 States in first aid. Three of the teams were combination teams in that the same team participated in both the mine rescue and first-aid contests. The States represented and the number of teams from each State are shown in table 1.

TABLE 1. - States represented at contest

	Number of mine rescue teams	Number of first-aid teams
Illinois	2	1
Indiana	0	1
Kentucky[1/]	6	13
Maryland	1	0
Ohio[1/]	1	4
Pennsylvania	1	7
Tennessee	0	1
West Virginia[1/] ..	3	19
Wyoming	0	1
	14	47

1/ Each of these States had 1 combination team.

The contest was conducted in accordance with the general rules prepared by the Rules Committee and approved by the General Committee of the National First-Aid and Mine Rescue Committee.

Although the number of teams and the States represented were not as large as in some former contests, the competitive spirit and enthusiasm displayed by the participating teams was a major factor in making this contest a great success.

No limitations were placed on the number of teams that could enter this contest. Any organization, club, union, or company connected with the mineral or allied industry could enter any number of teams. For future contests, it is planned that only winning teams from a State or regional contest will be eligible to enter the contest.

INTRODUCTION

Since its organization in 1910, the Bureau of Mines has assisted mining companies and other organizations connected with the mineral industries in conducting first-aid and mine rescue contests by providing instructors to train teams, judges, and other officials; by furnishing problems and outlines for working them, score cards, and contest rules; and by assisting in any way they were requested.

The Bureau always has encouraged authentic contests between first-aid and mine rescue teams because they stimulate interest in organizing such teams. Annually, a

large number of first-aid contests are held by many mining companies, mine organizations, and State mining departments with the assistance of the Bureau of Mines. Although many such contests are among teams competing within the same company, other contests are district meets where several company teams may compete. In some States winners of district contests compete in a statewide contest, and in some instances the winners of district or State contests compete in the national contest.

National contests are held to determine the most proficient team in the country and because contests of this type stimulate more interest in accident prevention and first-aid and mine rescue training.

The 1953 National First-Aid and Mine Rescue Contest was held in the Allen County Memorial Coliseum, Fort Wayne, Ind., September 29 and 30 and October 1. The contest, the second held after a lapse of 21 years, was held under the auspices of the Federal Bureau of Mines and the Joseph A. Holmes Safety Association and was sponsored by the National Coal Association, United Mine Workers of America, and various State mining departments.

FORMER CONTESTS

To stimulate interest in first-aid and mine rescue training, the Bureau of Mines, in cooperation with State mining departments, operators' associations, and other organizations, has held national or international contests since 1911. Table 2 lists former contests.

TABLE 2. - National or international contests

Place held	Date	First-aid teams	Mine rescue teams	States represented
Pittsburgh, Pa.	October 1911	41	4	10
Terre Haute, Ind.	September 1914	29	8	3
San Francisco, Calif...	September 1915	26	11	12
Pittsburgh, Pa.	September 1919	83	24	16
Denver, Colo.	September 1920	73	20	20
St. Louis, Mo.	September 1921	63	16	1/17
Salt Lake City, Utah ..	August 1923	55	21	2/13
Springfield, Ill.	September 1925	55	10	15
San Francisco, Calif...	September 1926	44	14	13
Pittsburgh, Pa.	August 1927	47	17	12
Butte, Mont.	August 1928	45	12	11
Kansas City, Mo.	September 1929	40	9	18
Louisville, Ky.	September 1930	48	6	12
Pittsburgh, Pa.	October 21, 1950	16	0	3/ 4
Columbus, Ohio	October 1951	55	14	10
Fort Wayne, Ind.	Sept.-Oct. 1953	47	14	9

1/ Includes Canada.
2/ Includes Mexico.
3/ This was more of a 4-State contest and was held to stimulate interest in reviving national contests. The time was too short to notify other States when it was decided to hold this contest.

THE NATIONAL FIRST-AID AND MINE RESCUE COMMITTEE

The 1951 and 1953 contests were conducted by a committee, which was established at a conference called in Washington, D. C., March 22, 1951, by Dr. James Boyd, then Director of the Federal Bureau of Mines. The conference was called at the request of

several organizations interested in reviving the national contests. The committee is composed of representatives of the National Coal Association, United Mine Workers of America, State departments of mines, State and local operators' associations, local mining institutes, insurance companies, American Mining Congress, and others.

Various committees take charge of arranging, financing, and conducting the contest. The work of the committees is coordinated under the direction of the general chairman and the director of the contest and the national contest secretary, who keeps the participating teams and companies fully informed regarding all matters pertaining to the contests.

When the general committee was established in 1951, J. J. Forbes was appointed general chairman and director of the contest and continued to serve during the 1953 contest.

At the banquet following conclusion of the contest in Columbus, October 1951, a vote was taken and passed unanimously in favor of holding a contest the following year. At a meeting of the general committee in April 1952, the sentiment for a meeting in 1952 had changed, but it was decided that preparations should be made for holding a contest in 1953. The general chairman reappointed the chairman and members of the 1951 contest and requested that all committees work toward a contest in 1953. He also instructed the chairman of the Publicity Committee to contact chambers of commerce advising them of the proposed contest. The Arrangements Committee was to contact cities that showed definite interest in holding the contest.

At a meeting on November 18, 1952, the Arrangements Committee submitted a report of the cities, with approximate cost, etc., that had expressed a desire to play host to the contest. The Arrangements Committee was then requested to visit certain cities to inspect their facilities and accommodations and ascertain costs and report their findings to a special committee empowered to select the site and set the date of the contest. Fort Wayne, Ind., was selected as the site for the 1953 meet.

The funds necessary to cover the cost of the contest were raised by popular subscription from various coal associations (national, State, and local), mining institutes, mining companies, labor organizations, manufacturers, and others. Funds were collected by the Finance Committee.

Prizes and awards to winning teams were donated by various companies and organizations (donors will be found under the section on Banquet and Awarding of Prizes). The many prizes donated were obtained under the supervision of the Prize Committee.

The public was informed of the contest by newspapers, magazine articles, and radio recordings by the Publicity Committee.

Invitations announcing the contest and giving place, dates, and closing dates for entries were prepared and sent with entry blanks by the Bureau of Mines through the contest secretary to mining companies, organizations, and State departments of mines inviting them to enter teams and participate in the contest. Regional and district offices of the Health and Safety Division, Bureau of Mines, also distributed invitations and entry blanks in their respective regions. The Assistant Secretary of the Department of the Interior sent invitations to the governors of mining States inviting them to be present or to send a representative.

The smooth functioning of all the committees was a big factor in making the contest an outstanding success.

A list of the names of officials and members of the National First-Aid and Mine Rescue Contest Committee is given as table 3.

TABLE 3. - Members of the National First-Aid and Mine Rescue Contest Committee

Office	Name	Title and company or organization	Address
Director	Forbes J. J.	Director, Federal Bureau of Mines	Washington, D. C.
Assistant directors	Westfield, James	Chief, Health and Safety Division, Federal Bureau of Mines	Do.
	Ash, S. H.	Chief, Safety Branch, Federal Bureau of Mines	Do.
Advisors to director	Allen, Thomas	Chief inspector of coal mines	Denver, Colo.
	Ankeny, M. J.	Safety director, Bituminous Coal Operators Association	Washington, D. C.
	Bierer, Joseph	Chief, West Virginia Department of Mines	Charleston, W. Va.
	Clements, W. J.	Secretary, Pennsylvania Department of Mines	Harrisburg, Pa.
	Delplace, John	Chief, mine inspection division, Department of Labor	Pittsburg, Kans.
	Dusz, H. J.	Chief, Ohio Division of Mines	Columbus, Ohio
	Fearn, Lyman	State inspector of coal mines	Rock Springs, Wyo.
	Ferguson, Charles	Acting director, Safety division, United Mine Workers of America	Washington, D. C.
	Fitzjarrell, J. W.	State coal-mine inspector	Fort Smith, Ark.
	Gandy, H. N.	Safety director, National Coal Association	Washington, D. C.
	Hanlin, J. C.	Chief of safety and inspection, Department of Industrial Relations	Birmingham, Ala.
	Kelly, C.P.	Chief inspector, Division of Mines, Virginia Department of Labor and Industry	Big Stone Gap, Va.
	Malloy, John	State mine inspector	Oklahoma City, Okla.
	Miller, J. R.	Chief, Tennessee Division of Mines	Knoxville, Tenn.
	Purcell, C. A.	Director, Bureau of Mines and Mining	Terre Haute, Ind.
	Schull, B. H.	Director, State Department of Mines and Minerals	Springfield, Ill.
	Sisk, A. D.	Chief, Kentucky Department of Mines and Minerals	Lexington, Ky.
	Stowell, E. A.	Mine inspector, Maryland Bureau of Mines	Westernport, Md.
Secretary	Tomlinson, W. H.	Chief, Accident Prevention and Health Division, Bureau of Mines, Region VIII	Pittsburgh, Pa.
Treasurer	Farley, H. P.	West Virginia Department of Mines	Charleston, W. Va.
Arrangements Committee	Warncke, R. G. (chairman)	Mining engineer, Federal Bureau of Mines	Washington, D. C.
	Anderson, Robert	President, District 11, U.M.W.A.	Terre Haute, Ind.
	Ferguson, Charles	Acting director, Safety Division, U.M.W.A.	Washington, D. C.

TABLE 3. - Members of the National First-Aid and Mine Rescue Contest Committee (Con.)

Office	Name	Title and company or organization	Address
Arrangements Committee	Gandy, H. N., Jr.	Safety Director, National Coal Association	Washington, D. C.
	Pacifico, Adolph	President, District 6, U.M.W.A.	Columbus, Ohio
	Sampson, Ford	Commissioner, Ohio Coal Association	Bridgeport, Ohio
Grounds Committee	Westfield, James (chairman)	Chief, Health and Safety Division, Federal Bureau of Mines	Washington, D. C.
	Burdelsky, Harry	Coal-mine inspector, Federal Bureau of Mines	Pittsburgh, Pa.
	Dickson, Robert	Secretary, Kentucky River Mining Institute	Hazard, Ky.
Finance Committee	Farley, H. P.	Safety commissioner, West Virginia Department of Mines	Charleston, W. Va.
	Allen, Thomas	State inspector of mines	Denver, Colo.
	Baima, George	President, District 1, P.M.W.A.	Springfield, Ill.
	Boardman, John	Director of safety, Anaconda Copper Co.	Butte, Mont.
	Blizzard, William	President, District 17, U.M.W.A.	Charleston, W. Va.
	Buckingham, D. F.	Secretary, Montana Coal Operators Association	Billings, Mont.
Prize Committee	Roll, W. H. (chairman)	Executive assistant, Kentucky Department of Mines and Minerals	Lexington, Ky.
	Batman, H. T.	General manager and counsel, Lynch Coal Operators' Reciprocal Association	Terre Haute, Ind.
	Bierer, Joseph	Acting chief, West Virginia Department of Mines	Charleston, W. Va.
	Busarello, John	President, District 5, U.M.W.A.	Pittsburgh, Pa.
	Currie, R. D.	Engineer, General Reinsurance Corp.	Trucksville, Pa.
	Donahue, C. M.	Manager, Mining Department, Mine Safety Appliances Co.	Pittsburgh, Pa.
	Ferguson, Charles	Acting director, Safety Division, U.M.W.A.	Washington, D. C.
	Gandy, H. N., Jr.	Safety director, National Coal Association	Do.
	Grafton, H. J.	Chief mining engineer, Eureka Casualty Co.	Philadelphia, Pa.
	Herbert, C. F.	Superintendent, Safety Engineering Department, Bituminous Casualty Corp.	Rock Island, Ill.
	Legg, Charles	Mine rescue instructor, Pennsylvania Department of Mines	Ebensburg, Pa.
Rules Committee	Burdelsky, H. R. (chairman)	Coal-mine inspector, Federal Bureau of Mines	Pittsburgh, Pa.
	Berry, J. V.	Supervisor of safety, Bethlehem Collieries Corp.	Johnstown, Pa.
	Johnson, L. H.	Safety engineer, Peabody Coal Co.	Taylorville, Ill.
	Jones, C. E.	Safety director, U.M.W.A.	Beckley, W. Va.

TABLE 3. - Members of the National First-Aid and Mine Rescue Contest Committee (Con.)

Office	Name	Title and company or organization	Address
Rules Committee	Jones, C. W.	First-aid instructor, Pennsylvania Department of Mines	Girardville, Pa.
	Kirk, Nathaniel	Superintendent, Green Valley mine, Snow Hill Coal Corp.	Terre Haute, Ind.
	Legg, Charles	Mine rescue instructor, Pennsylvania Department of Mines	Ebensburg, Pa.
	Mosgrove, Jed	Safety director	Pikeville, Ky.
	Schuster, W. J.	Safety director, Hanna Coal Co.	Adena, Ohio
Publicity Committee	Owen, Cecil	Assistant editor, United Mine Workers' Journal	Washington, D. C.
	Allai, Henry	President, District 14, U.M.W.A.	Pittsburg, Kans.
	Bayless, I. N.	President, Union Pacific Coal Co.	Omaha, Nebr.
	Boyle, W. A.	President, District 27, U.M.W.A.	Billings, Mont.
	Bradford, R. D.	Chief, McAlester section, Accident Prevention and Health Division, Federal Bureau of Mines, Region VI	McAlester, Okla.
	Brennan, M. F.	President, District 7, U.M.W.A.	Hazleton, Pa.
	Brinley, J. E.	President, District 22, U.M.W.A.	Rock Springs, Wyo.
	Caddy, Samuel	President, District 30, U.M.W.A.	Lexington, Ky.
	Cartwright, Harvey	Commissioner, Indiana Coal Operators' Association	Terre Haute, Ind.
	Clark, R. W.	Secretary, Coal Producers' Association of Washington	Seattle, Wash.
	Christiansen, A.J.	Secretary, Illinois Coal Strippers Association	Chicago, Ill.
	Colley, J. W.	Secretary, Logan Coal Operators' Association	Logan, W. Va.
	Condra, Allen	President, District 28, U.M.W.A.	Norton, Va.
	Davis, C. W.	Secretary, Southern Appalachian Coal Operators' Association	Knoxville, Tenn.
	Deringer, B. W.	Labor commissioner, Central Pennsylvania Coal Producers' Association	Altoona, Pa.
	Esser, G. H.	President, Virginia Coal Operators' Association	Norton, Va.
	Farley, H. P.	West Virginia Department of Mines	Charleston, W. Va.
	Ferguson, Charles	Acting director, Safety Division, U.M.W.A.	Washington, D. C.
	Fowler, David	President, District 21, U.M.W.A.	Muskogee, Okla.
	Gandy, H. N., Jr.	Safety director, National Coal Association	Washington, D. C.
	Ghizzoni, John	Acting president, District 2, U.M.W.A.	Ebensburg, Pa.
	Glaeser, Oscar	Assistant to vice president and general manager, Western Operations, U. S. Smelting, Refining and Mining Co.	Salt Lake City, Utah
	Hefferly, Frank	President, District 15, U.M.W.A.	Denver, Colo.
	Higgins, Aubin	Secretary, Western Kentucky Mining Institute	Earlington, Ky.
	Higgins, S. C.	Secretary, New River Coal Operators' Association	Mount Hope, W. Va.

TABLE 3. - Members of the National First-Aid and Mine Rescue Contest Committee (Con.)

Office	Name	Title and company or organization	Address
Publicity Committee	Homan, H. S.	Executive secretary, Southern Coal Producers Association	Knoxville, Tenn.
	Housman, B. B.	Secretary, Pocahontas Operators' Association	Bluefield, W. Va.
	Hughes, Frank	President, District 3, U.M.W.A.	Greensburg, Pa.
	Hynes, William	President, District 4, U.M.W.A.	Uniontown, Pa.
	Inman, I. D.	Secretary, West Kentucky Mining Institute	Madisonville, Ky.
	Kaczinski, Charles	Safety director, District 1, U.M.W.A.	Scranton, Pa.
	Keenan, Dennis	General superintendent, Sterling Coal Co.	Elmora, Pa.
	Kennedy, H. G.	Executive secretary, Kanawha Coal Operators' Association	Charleston, W. Va.
	Kershetsky, Joseph	President, District 9, U.M.W.A.	Shamokin, Pa.
	Kirkwood, Walter	Chief inspector, Tennessee Coal Iron, & Railroad Co.	Birmingham, Ala.
	Kosik, Mike	Anthracite Board of Conciliation	Hazelton, Pa.
	Letton, R. L.	Commissioner, Southwestern Interstate Coal Operators' Association	Pittsburg, Kans.
	Malin, Jerry	Regional information officer, Region VI, Federal Bureau of Mines	Amarillo, Tex.
	Malloy, J. M.	Chief mine inspector, State of Oklahoma	Oklahoma City, Okla.
	Markel, M. L.	Somerset County Coal Operators Association	Somerset, Pa.
	McCarthy, Justin	Director, U.M.W.A. News Bureau	Washington, D. C.
	Mitch, William	President, District 20, U.M.W.A.	Birmingham, Ala.
	Mooney, Stanley	Safety director, Woodward Iron Co.	Woodward, Ala.
	Morgan, E. J.	President, District 11, U.M.W.A.	Terre Haute, Ind.
	Nicholls, Sam	President, District 10, U.M.W.A.	Renton, Wash.
	Nicolai, E. R.	Regional information officer, Region VIII, Federal Bureau of Mines	Pittsburgh, Pa.
	Norcross, Robert	Assistant secretary, West Virginia Coal Association	Charleston, W. Va.
	Olsen, E. C.	Safety engineer, Geneva Steel Co.	Graygerton, Utah
	O'Rear, N. B.	Assistant chief, Office of Minerals Reports, Federal Bureau of Mines	Washington, D. C.
	Rayner, Andrew	Safety director, District 4, U.M.W.A.	Uniontown, Pa.
	Rouzer, I. W.	President, Alabama Mining Institute	Birmingham, Ala.
	Sampson, Ford	Labor commissioner, Ohio Coal Association	Bridgeport, Ohio
	Scott, H. M.	Secretary, Winding Gulf Operators Association	Beckley, W. Va.
	Stachura, J. A.	General superintendent, Enoco Collieries, Inc.	Vincennes, Ind.

TABLE 3. - Members of the National First-Aid and Mine Rescue Contest Committee (Con.)

Office	Name	Title and company or organization	Address
Publicity Committee	Stewart, H. C.	Regional information officer, Region IV, Federal Bureau of Mines	Denver, Colo.
	Sturgill, W. B.	Hazard Coal Operators Association	Hazard, Ky.
	Stusnick, J. J.	Assistant safety director, District 1, U.M.W.A.	Scranton, Pa.
	Sutter, H. A.	Executive vice president, Western Pennsylvania Coal Operators' Association	Pittsburgh, Pa.
	Titler, G. J.	President, District 29, U.M.W.A.	Beckley, W. Va.
	Thomason, Ray	President, District 19, U.M.W.A.	Middlesboro, Ky.
	Urbaniak, C. J.	President, District 31, U.M.W.A.	Fairmont, W. Va.
	VanHorn, Ezra	Executive vice president, Ohio Coal Association	Cleveland, Ohio
	White, Hugh	President, District 12, U.M.W.A.	Springfield, Ill.
	Willing, R. P.	Information specialist, Region V, Federal Bureau of Mines	Minneapolis, Minn.
	Younger, Stephen	Safety director, Pond Creek Colliery	Williamson, W. Va.
Program Committee	Fene, W. J. (chairman)	Assistant chief, Health and Safety Division, Federal Bureau of Mines	Washington, D. C.
	Tomlinson, W. H.	Chief, Accident Prevention and Health Division, Region VIII, Federal Bureau of Mines	Pittsburgh, Pa.

MINE RESCUE CONTEST

This contest was held on the ground floor in the exhibit hall of the Coliseum, which has an area of approximately 315 by 190 feet. The simulated mine was outlined with 3-foot-high, woven-wire fencing, property of the coliseum. The contest began at 8:00 a.m., September 29, with preliminary examinations of the teams. The last team to enter the mine completed working the problem about 5:30 p.m.

The gallery was designed to conform with the layout of the exhibit hall. The main entry was approximately 180 feet long, from which 2 rooms, approximately 80 feet long, were turned. The coal was supposedly transported by a room conveyor to the main-entry conveyor.

The problem worked was as follows:

> When the fire bosses arrived at No. 2 mine, North East Coal Co., Fort Wayne, Ind., dense smoke was being exhausted from the return airway. A preliminary examination indicated that the conveyor belt was burning freely, and the supply crew (four men) had not checked out of the mine. Explore the mine, and locate the four men or their bodies. Any live men found should be brought to the surface.

Working time of the problem was 30 minutes.

The details of the gallery and problem are shown on the key map of the mine, figure 1.

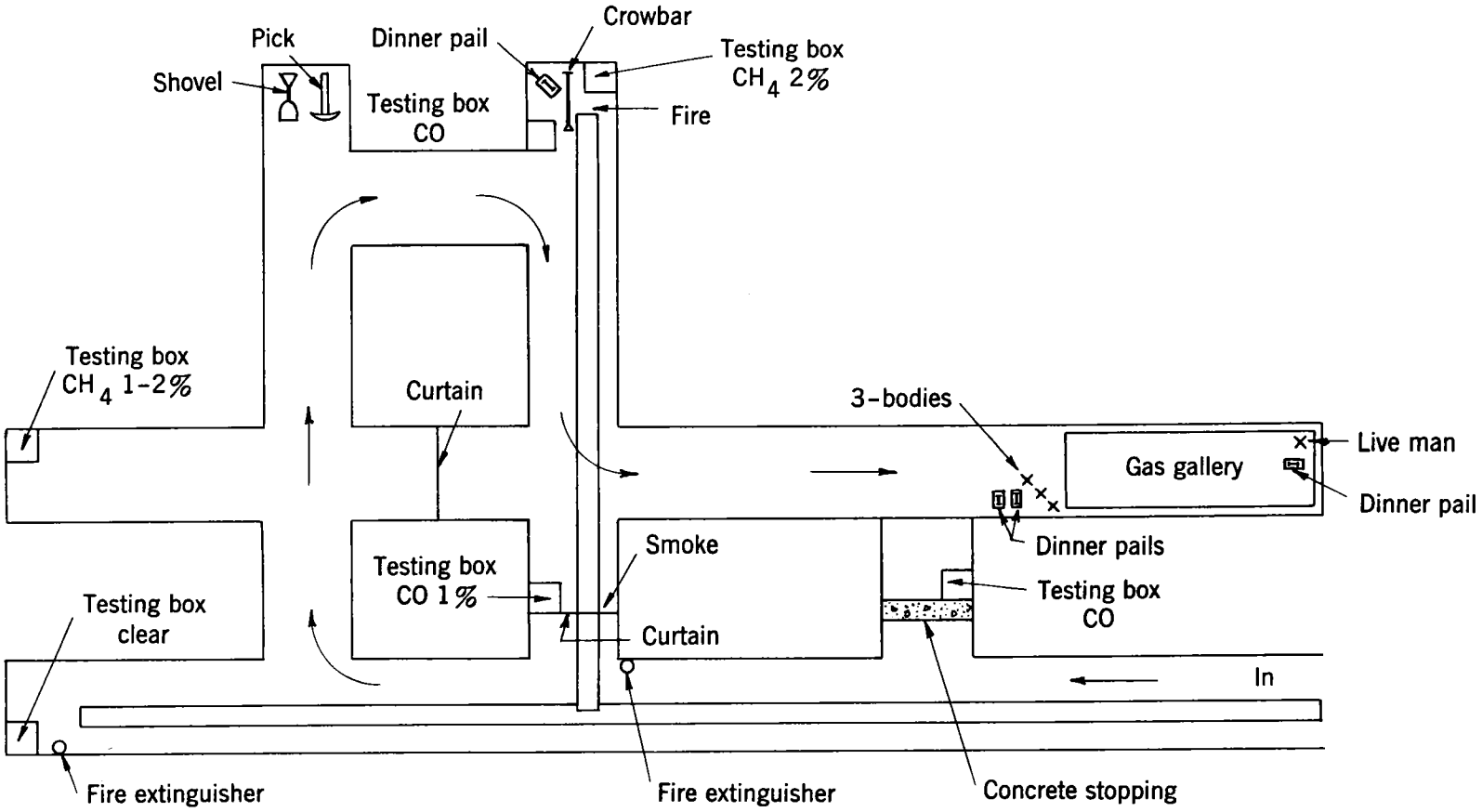

Figure 1. - Key map of mine used in mine rescue problems.

The arrangement of the equipment, tools, and positions of the dead men and the live man, who had taken refuge behind a barricade, and other conditions simulated actual conditions found in a mine after a fire.

The problem was to rescue any live men and bring them to the surface through noxious gases (see figs. 2-5).

Teams were judged on the accuracy of their observations while in the mine, their procedure while rescuing the man behind the barricade, and other matters and their conduct while in the mine.

Team rating was based on four separate categories, as follows:

A. Preliminary examination.

B. Checking apparatus and other procedure before entering the mine.

C. Working the problem.

D. Procedure after working the problem and leaving the mine.

Teams of judges composed of personnel from the Bureau of Mines and members from various State departments of mines were assigned to each of the above categories. A predetermined number of points were discounted for each failure to work properly or any substandard method of working any category of the problem. Each category had a separate discount sheet, and the total of all discounts determined the standing of the teams. Sample copies of the judge's discount sheets will be found under Appendix C.

The preliminary examination was based on a series of questions, which could be answered by "right" or "wrong". This type of questionnaire was an inovation in a national meet and expedited the preliminary examination. Copies of the questions are shown under Appendix B.

A list of the teams, the companies represented, and the standing of the teams is shown in table 4, and a list of the officials and judges will be found in table 5.

TABLE 4. - Mine rescue teams participating in contest and their standing

Place	Company or sponsoring organization	Mine	Address	Total discounts
1	International Harvester Co.	Wisconsin Steel Coal No. 2	Benham, Ky.	22
2	Consolidation Coal Co. (Ky.)	Hendrix	Jenkins, Ky.	23
	Eastern Coal Corp.	Stone Nos. 4 and 8	Stone, Ky.	31
4	Inland Steel Co.	Wheelwright	Wheelwright, Ky.	43
5	Consolidation Coal Co. (Ky.)	No. 204	Jenkins, Ky.	49
6	Peabody Coal Co.	No. 40	Galatia, Ill.	63
7	United States Steel Corp., Frick District Coal Division	Robena	Uniontown, Pa.	64
8	United Mine Workers of America, District 16	State of Maryland	Kitzmiller, Md.	70
9	United States Steel Corp.	Nos. 30, 31, and 32	Lynch, Ky.	71
10	Union Colliery Co.	New Kathleen	Du Quoin, Ill.	79
11	Red Jack Coal Corp.	Local Union - Mitchell Branch	Red Jacket, W. Va.	81
12	Hanna Coal Co.	Dun Glen No. 11	Dun Glen, Ohio.	88
13	Consolidation Coal Co.	No. 63	Fairmont, W. Va.	95
14	Jamison Coal & Coke Co.	Jamison No. 9	Farmington, W.Va.	128

Figure 2. - Rescue team entering mine.

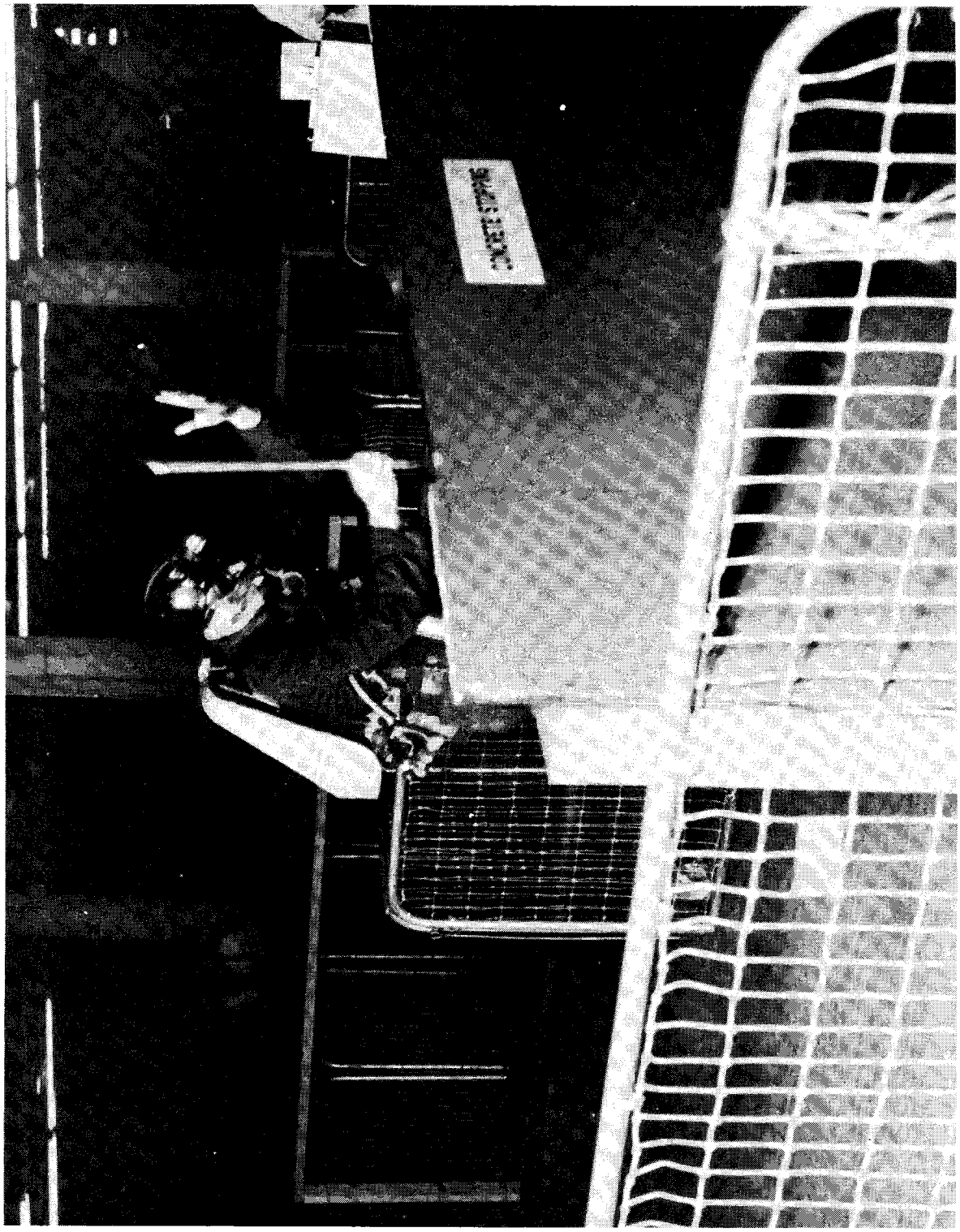

Figure 3. - Team testing roof.

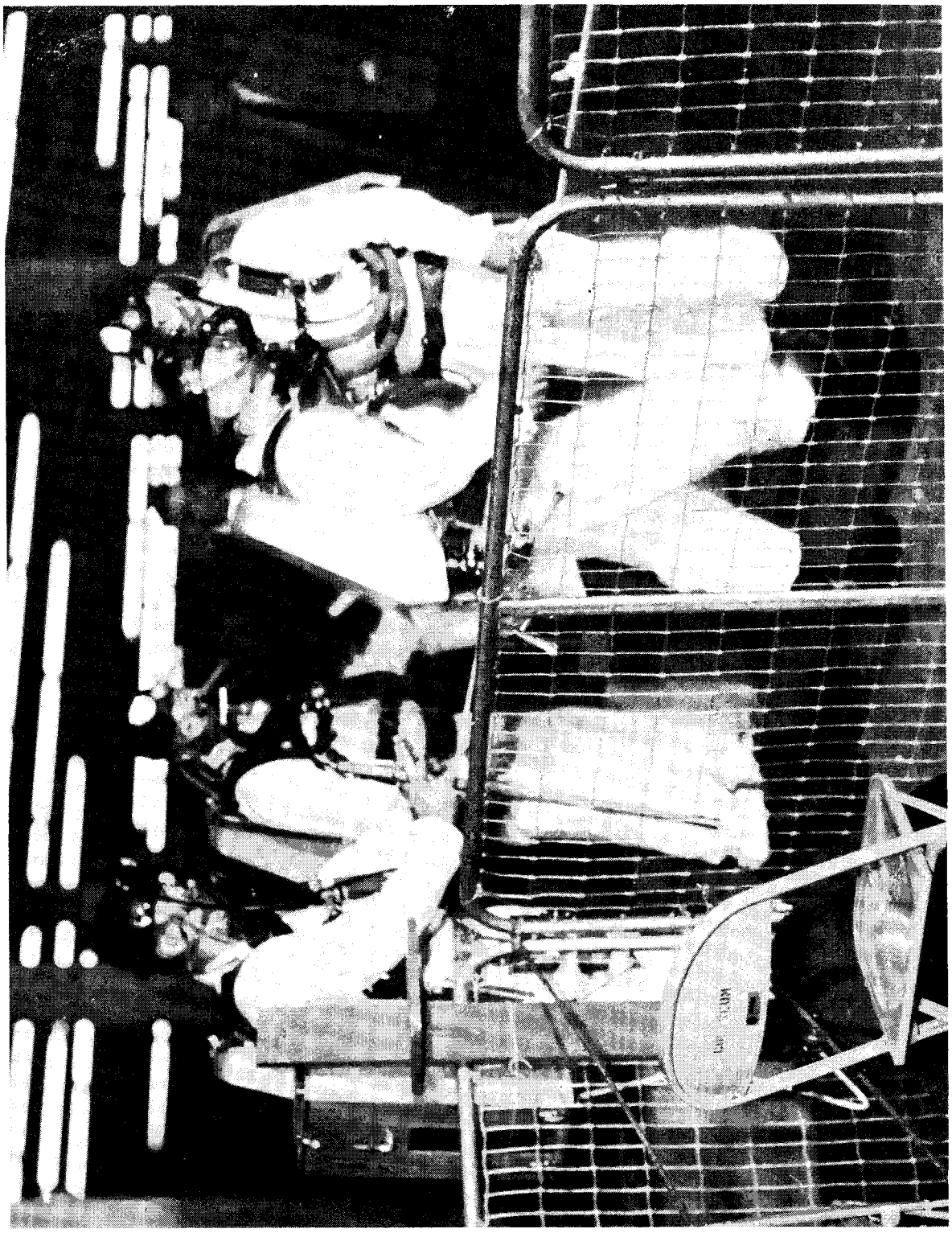

Figure 4. - Rescue team leaving "C" entry after extinguishing fire.

Figure 5. - Erecting stopping.

TABLE 5. - Officials and judges, mine rescue contest

Office	Name	Title and company or organization	Address
Director of contest	Forbes, J. J.	Director, Federal Bureau of Mines	Washington, D. C.
Assistant directors	~~Ash, S. H.~~	~~Chief, Safety Branch, Health and Safety Division, Federal Bureau of Mines~~	~~Do.~~
	Walker, Don.		
	~~Westfield, James~~	Chief, Health and Safety Division, Federal Bureau of Mines	Do.
Recorders	Bird, J. H.	Chief, Accident Prevention and Health Division, Region III, Federal Bureau of Mines	Berkeley, Calif.
	Berry, William	Inspector-at-large, West Virginia Department of Mines	Fairmont, W. Va.
	McDowell, C. A.	Mine Inspectors' Institute of America, secretary	California, Pa.
	McKenna, J. V.	Deputy secretary, Pennsylvania Department of Mines	Waynesburg, Pa.
	~~Phelan, J. H.~~	~~Inspector-at-large, Kentucky Department of Mines and Minerals~~	~~Madisonville, Ky.~~
	~~Trewek, L.~~	~~South Dakota inspector of Mines~~	~~Lead, S. Dak.~~
	~~Woodburn, Orr~~	~~Globe-Miami District Mine Rescue and First-Aid Association~~	~~Globe, Ariz.~~
Timekeepers	~~Benson, J. B.~~	~~Chief, Norton Branch, Federal Bureau of Mines~~	~~Norton, Va.~~
	Eric Brown		
	Forsyth, John	Inspector-at-large, Kentucky Department of Mines and Minerals	Pikeville, Ky.
	Andrew Raynor		
	~~Jones, C. E.~~	~~United Mine Workers of America~~	~~Beckley, W. Va.~~
	Malesky, J. S.	Chief, Barbourville Section, Federal Bureau of Mines	Barbourville, Ky.
	Sampson, Ford	Commissioner, Ohio Coal Association	Bridgeport, Ohio
	~~Smith, C. M.~~	~~Safety representative, Federal Bureau of Mines~~	~~Washington, D.~~ C.
Announcer	~~Walker, W. D., Jr.~~	Chief, Pittsburgh Branch, Accident Prevention and Health Division, Region VIII, Federal Bureau of Mines	Pittsburgh, Pa.
	Tomlinson		
	Bill Park		
Chief judge	~~Ash, S. H.~~	Chief, Safety Branch, Federal Bureau of Mines	Washington, D. C.
Assistant chief judges	Berry, J. V.	Supervisor of safety, Bethlehem Mines Corp.	Johnstown, Pa.
	~~Bank, W. R.~~	Chief, Mount Hope Branch, Accident Prevention and Health Division, Region VIII, Federal Bureau of Mines	Mount Hope, W. Va.
	Clem Dividus		
Preliminary examination judges	Cagley, W. C.	Coal-mine inspector, Federal Bureau of Mines	Johnstown, Pa.
	Glennon, J. R.	Safety representative, Federal Bureau of Mines	Albany, N. Y.
	Haley, J. F.	Coal-mine inspector, Federal Bureau of Mines	Montgomery, W. Va.

TABLE 5. - Officials and judges, mine rescue contest (Con.)

Office	Name	Title and company or organization	Address
Preliminary examination judges	Layne, Elmer	Inspector-at-large, Kentucky Department of Mines and Minerals	Pikeville, Ky.
	Marshalek, Joseph	Coal-mine inspector, Federal Bureau of Mines	Elkins, W. Va.
	~~Sheridan, J. B.~~	do.	Vincennes, Ind.
Judges for checking apparatus	Adams, N. L.	do.	Hazard, Ky.
	Capps, Roy	do.	Duluth, Minn.
	~~Devidas, C. M.~~	do.	Vincennes, Ind.
	~~Krill, L. D.~~	Mining engineer, Federal Bureau of Mines	Salt Lake City, Utah
	Rose, Paul	District mine inspector, Kentucky Department of Mines and Minerals	Middlesboro, Ky.
	Trunko, Lex	Coal-mine inspector, Federal Bureau of Mines	Logan, W. Va.
Team judges	Bradford, R. D.	do.	McAlester, Okla.
	Buckner, Marion	District mine inspector, Kentucky Department of Mines and Minerals	Hazard, Ky.
	Cochran, R. L.	Coal-mine inspector, Federal Bureau of Mines	Big Stone Gap, Va.
	Colbert, G. W.	do.	Norton, Va.
	Dobis, J. J.	do.	Fairmont, W. Va.
	Farren, G. C.	Safety instructor, Federal Bureau of Mines	Birmingham, Ala.
	Ferraro, J. S.	Coal-mine inspector, Federal Bureau of Mines	Mount Hope, W. Va.
	Furin, F. J.	do.	Do.
	Ingraham, M. L.	Safety representative, Federal Bureau of Mines	Wilkes-Barre, Pa.
	Keasler, W. W.	Coal-mine inspector, Federal Bureau of Mines	Staunton, Ill.
	Mark, T. R., Jr.	do.	Barbourville, Ky.
	Marron, E. J.	do.	St. Clairsville, Ohio
	Reid, G. E.	Safety inspector, Federal Bureau of Mines	Berkeley, Calif.
	Risner, O. L.	District mine inspector, Kentucky Department of Mines and Minerals	Ashland, Ky
	See, Raymond	do.	Lexington, Ky.
	Webb, Arlie	Inspector-at-large, Kentucky Department of Mines and Minerals	Jenkins, Ky.
Lifeline	Berger. ~~Berger, B. W.~~	Coal-mine inspector, Federal Bureau of Mines	Barbourville, Ky.
	Mears. ~~Mears, G. L.~~	do.	Norton, Va.
Map examiners	~~Cox, Otis~~	Inspector-at-large, Kentucky Department of Mines and Minerals	Cary, Ky.
	~~Naus, L. L.~~	Mining health and safety engineer, Federal Bureau of Mines	Salt Lake City, Utah

TABLE 5. - Officials and judges, mine rescue contest (Con.)

Office	Name	Title and company or organization	Address
Map examiners	Stewart, W. R.	Coal-mine inspector, Federal Bureau of Mines	Norton, Va.
Messengers	Gilley, J. L.	do.	Welch, W. Va.
	~~Lyons, W. B.~~ Farren	do.	Uniontown, Pa.
Guards for mine rescue team	Bukovitz, S. J.	do.	Jellico, Tenn.
	Elkins, Pearl	Inspector-at-large, Kentucky Department of Mines and Minerals	Lexington, Ky.
	Curry- ~~McCune, J. A.~~	Coal-mine inspector, Federal Bureau of Mines	Vincennes, Ind.
	~~Nee, George~~ - Stout -	do.	Welch, W. Va.
	Null, V. D.	do.	Johnstown, Pa.
Mine attendants	Callahan, J. T.	do.	St. Clairsville, Ohio
	Treas, G. L.	Mechanical engineer, Federal Bureau of Mines	Pittsburgh, Pa.
Gas-box attendants	Baker, F. D.	Coal-mine inspector, Federal Bureau of Mines	Do.
	Brooks, Chester	District mine inspector, Kentucky Department of Mines and Minerals	Harlan, Ky.
	-Rejonis- ~~Duncan, M. I.~~	Coal-mine inspector, Federal Bureau of Mines	Pikeville, Ky.
	-Arthur- ~~Kelley, K. K.~~	do.	Pittsburgh, Pa.
	Warren, Wallace	District mine inspector, Kentucky Department of Mines and Minerals	Mortons Gap, Ky.
	Webb, William	do.	Stone, Ky.

FIRST-AID CONTEST

The first-aid contest was held in the arena of the coliseum; it had a floor area approximately 220 by 108 feet, which was laid out in rectangular working spaces for each team (see fig. 6). The contest was opened at 1:00 p.m., September 30, with welcoming addresses by the Hon. Crawford Parker, Indiana Secretary of State, and Hon. Harry W. Baals, mayor of Fort Wayne. The response was made by the Hon. Felix E. Wormser, Assistant Secretary, United States Department of the Interior, Washington, D. C.

After the opening ceremonies, the teams completed working the 5 problems by 5:00 p.m. The following day, October 1, the contest resumed at 9:00 a.m. Five regular problems and the extra problem were completed about 3:00 p.m. The extra problem was worked so that it could be used to break any ties. Ten regular problems and a tie problem were worked during the 2 days. Copies of the problems appear in Appendix E.

The contest was conducted under rules published by the Rules Committee (a copy of which is in Appendix D), under the supervision of the chief judge and his assistants.

Team judges were selected from the personnel of the Bureau of Mines and the mine-inspection departments of the various States. To qualify to act as a judge, a person was required to possess a Bureau of Mines first-aid judge's certificate.

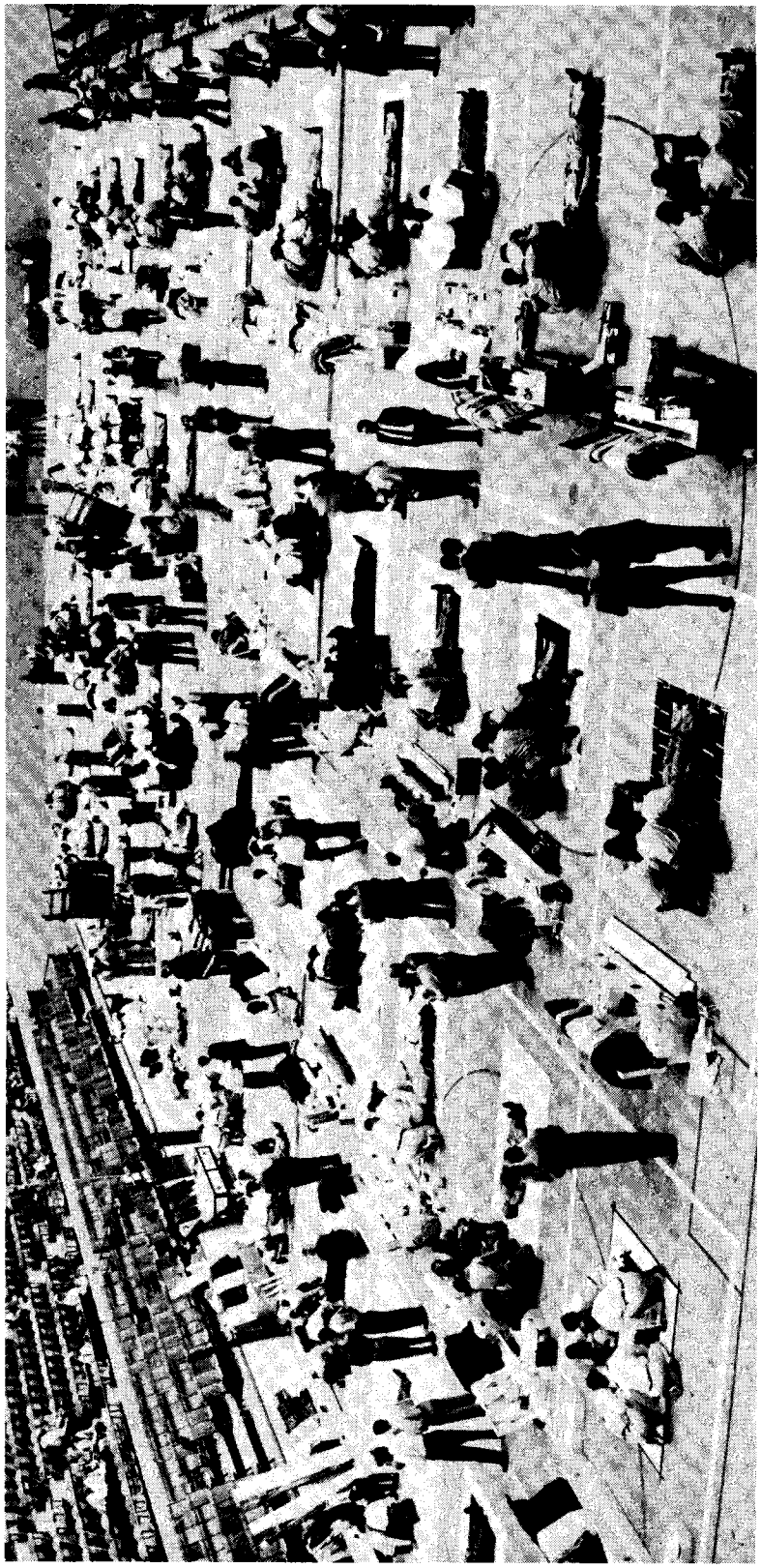

Figure 6. - Teams working problems.

A team judge was assigned to each team. After each problem was completed, the team judge moved to the next team; thus each team was judged by a different judge for every problem worked. Supervising judges were assigned to a group of several teams and after each problem was completed they moved to the next group.

The method of distributing the problems and collecting the discount sheets helped to prevent confusion and expedited the working of the problems. The chief of the problem distributors had several assistants who received the problems and cards and distributed them to the supervising judges who in turn delivered them to the team judges. At the sound of the first gong, the team judge handed the problem to the captain of the team that he was to judge. The supervising judges collected the discount sheets from the team judges and gave them to the problem distributor for delivery to the chief distributor. The chief distributor turned them over to the recorders for evaluation.

Although the contest was open to any team or teams from the mineral industries, only teams from the coal industry were represented in this contest. It is hoped that teams representing other branches of the mineral industries will participate in future contests.

The team finishing first in the contest had a score of 98.36 percent, while the team finishing last had 92.52 percent; the average of all teams was 97.19 percent. The scores at this year's contest were considerably lower than those made 2 years ago at the contest in Columbus, Ohio.

A list of the teams, with the sponsoring company and their locations, showing their scores and their standing in the contest, is given in table 6.

TABLE 6. - First-aid teams participating in contest and their standing

Place	Title and company or organization	Mine	Address	Percent
1	Pardee & Curtin Lumber Co.	Bergoo No. 4	Bergoo, W. Va.	98.36
2	United States Steel Corp. Frick District, Coal Division	National No. 3	Uniontown, Pa.	98.22
3	do.	Kyle-Collier	do.	98.10
4	Consolidation Coal Co.	214	Jenkins, Ky.	97.98
5	United States Steel Corp.	Group of mines (No. 1 team)	Gary, W. Va.	97.94
6	Pittsburgh Coal Co.	Montour No. 10	Library, Pa.	97.92+
7	Cresent Coal Co.	Briar Creek	Central City, Ky.	97.92-
8	Northern West Virginia Coal-Mining Institute South Union Coal Co.	Jamison No. 11	Edna, W. Va.	97.88
9	Pond Creek Collieries	Pond Creek	Williamson, W. Va.	97.86
10	Consolidation Coal Co. (W. Va.)	No. 32 (team 2)	Fairmont, W. Va.	97.84
11	Hanna Coal Co.	Piney Fork No. 1	Piney Fork, Ohio	97.82+
12	do.	Georgetown No. 12 (team 1)	Adena, Ohio	97.82-
13	Pittsburgh Coal Co.	Westland	Westland, Pa.	97.80
14	Philadelphia & Reading Coal & Iron Co.	St. Nicholas Central Breaker	St. Nicholas, Pa.	97.78
15	Hanna Coal Co.	Dun Glen No. 11 (team 2)	Dun Glen, Ohio	97.76
16	Princess Elkhorn Coal Co., Inc.	David No. 1	David, Ky.	97.74

TABLE 6. - First-aid teams participating in contest and their standing (Con.)

Place	Title and company or organization	Mine	Address	Percent
17	Consolidation Coal Co. (Ky.)	No. 204 (team 2)	Jenkins, Ky.	97.68
18	United States Steel Corp.	Various mines (team 2)	Gary, W. Va.	97.68
19	Inland Steel Co.	Wheelwright	Wheelwright, Ky.	97.68
20	Blue Diamond Coal Co.	Leatherwood	Leatherwood, Ky.	97.68
21	Jamison Coal & Coke Co.	Jamison No. 21	Hostetter, Pa.	97.64
22	Imperial Smokeless Coal Co., United Mine Workers of America, District 29	No. 2	Quinwood, W. Va.	97.62
23	Jamison Coal & Coke Co.	Jamison No. 9	Farmington, W. Va.	97.54
24	Stewart Coke & Coal Co.	Whitney	Whitney, Pa.	97.52
25	Blue Diamond Coal Co.	Blue Diamond	Blue Diamond, Ky.	97.50+
26	Warner Collieries Co.	Jensie	East Springfield, Ohio	97.50-
27	Eastern Gas & Fuel Associates, United Mine Workers of America, District 29	Keystone	Keystone, W. Va.	97.36
28	Central West Virginia Coal Mining Inst.	No. 32 (Owings No. 1)	Clarksburg, W. Va.	97.34
29	Consolidation Coal Co. (Ky.)	No. 204 (team 1)	Jenkins, Ky.	97.32
30	Consolidation Coal Co. (W. Va.)	No. 93	Fairmont, W. Va.	97.22
31	Consolidation Coal Co. (Ky.)	Hendrix	Jenkins, Ky.	97.16+
32	Northern West Virginia Mining Inst.	Scott No. 2 (team 2)	Shinnston, W. Va.	97.16-
33	Big Jim Coal Co.	Big Jim	Blanche, Ky.	97.10
34	Northern West Virginia Mining Inst.	Williams	Worthington, W. Va.	97.06
35	Union Pacific Coal Co.	Superior D. O. Clark	Superior, Wyo.	96.88
36	Coal River Mining Inst., Armco Steel Corp.	Nellis	Nellis, W. Va.	96.86
37	Truax-Traer Coal Co.	Mines of West Virginia Division	Kayford, W. Va.	96.68
38	Allied Chemical & Dye Corp.	Harewood (team 1)	Longacre, W. Va.	96.66
39	New River & Pocahontas Consolidation Coal Co., United Mine Workers of America, District 29	Layland	Layland, W. Va.	96.48
40	Leckie Collieries Co.	Leckie Collieries	Aflex, Ky.	96.24
41	Peabody Coal Co.	No. 10	Pawnee, Ill.	96.20
42	Red Jacket Coal Corp., United Mine Workers of America - Foreman's Club	Wyoming	Wyoming, W. Va.	96.10
43	Wolfe-Koenig Corp.	Sunshine	Bicknell, Ind.	95.90
44	Allied Chemical & Dye Corp.	Harewood (team 2)	Longacre, W. Va.	95.76
45	Bell & Zoller Coal Co.	Iriole	Madisonville, Ky.	95.12
46	Southern Collieries and United Mine Workers of America, Local 3164	Pee Wee	Lake City, Tenn.	94.76
47	New River & Pocahontas Consolidation Coal Co., United Mine Workers of America, District 29	Berwind No. 11	Capels, W. Va.	92.52

Officials and judges who participated in the first-aid contest are listed in table 7.

TABLE 7. - Officials and judges, first-aid contest

Office	Name	Title and company or organization	Address
Director of contest	Forbes, J. J.	Director, Federal Bureau of Mines	Washington, D. C.
Assistant directors	Ash, S. H.	Chief, Safety Branch, Health and Safety Division, Federal Bureau of Mines	Do.
	Walker, Don.		
	~~Westfield, James~~	Chief, Health and Safety Division, Federal Bureau of Mines	Do.
Registrars and recorders	Bird, J. H.	Chief, Accident Prevention and Health Division, Region III, Federal Bureau of Mines	Berkeley, Calif.
	Berry, William	Inspector-at-large, West Virginia Department of Mines	Fairmont, W. Va.
	Dougherty, J. J.	Chief, Fairmont Section, Federal Bureau of Mines	Do.
	Forsyth, John	Inspector-in-charge, Kentucky Department of Mines and Minerals	Pikeville, Ky.
	Kingery, D. S.	Chief, Haulage Safety Section, Federal Bureau of Mines	Washington, D. C.
	McDowell, C. A.	Secretary, Mine Inspectors' Institute of America	California, Pa.
	McKenna, J. V.	Deputy secretary, Pennsylvania Department of Mines	Waynesburg, Pa.
	~~Rhodes, J. H.~~	Kentucky mine inspector	Madisonville, Ky.
	~~Reeder, R. D.~~	Chief, Utah-Wyoming Section, Accident Prevention and Health Division, Region IV, Federal Bureau of Mines	Salt Lake City, Utah
	Treweek, J.	South Dakota inspector of Mines	Lead, S. Dak.
	Woodburn, Orr	Director, Globe-Miami District Mine Rescue and First-Aid Association	Globe, Ariz.
Timekeepers	~~Benson, J. B.~~	Chief, Norton Branch, Federal Bureau of Mines	Norton, Va.
	Cox, Otis	Inspector-at-large, Kentucky Department of Mines and Minerals	Cary, Ky.
	Jones, C. E.	United Mine Workers of America	Beckley, W. Va.
	Malesky, J. S.	Chief, Barbourville Section, Federal Bureau of Mines	Barbourville, Ky.
	Sampson, Ford	Commissioner, Ohio Coal Association	Bridgeport, Ohio
	Smith, G. M.	Safety representative, Federal Bureau of Mines	Washington, D. C.
Announcer	~~Walker, W. D.~~	Chief, Pittsburgh Branch, Accident Prevention and Health Division, Region VIII, Federal Bureau of Mines	Pittsburgh, Pa.

TABLE 7. - Officials and judges, first-aid contest (Con.)

Office	Name	Title and company or organization	Address
Chief judge	Burdelsky, H. R.	Coal-mine inspector, Federal Bureau of Mines	Pittsburgh, Pa.
Assistant chief judges	Davis, M. L.	Safety representative, Federal Bureau of Mines	Washington, D. C.
	Keak, Murrell	Assistant director, Illinois Department of Mines and Minerals	Springfield, Ill.
Score-card examiners	Demkowicz, W. M.	Coal-mine inspector, Federal Bureau of Mines	Johnstown, Pa.
	Elkins, Pearl	Inspector-at-large, Kentucky Department of Mines and Minerals	Lexington, Ky.
	Griffith, F. E.	Chief, Coal-Mine Fire-Control Section, Federal Bureau of Mines	Pittsburgh, Pa.
	Johnson, J. A.	Chief, Accident Prevention and Health Division, Region V, Federal Bureau of Mines	Duluth, Minn.
	Park, W. R.	Chief, Mount Hope Branch, Federal Bureau of Mines	Mount Hope, W. Va.
Supervising judges	Dodge, C. H.	Chief, Jellico Branch, Accident Prevention and Health Division, Region VII, Federal Bureau of Mines	Jellico, Tenn.
	Layne, Elmer	Inspector-at-large, Kentucky Department of Mines and Minerals	Ashland, Ky.
	McCall, M. C.	Chief, Accident Prevention and Health Division, Region VII, Federal Bureau of Mines	Birmingham, Ala.
	McGuire, L. H.	Chief, Accident Prevention and Health Division, Region II, Federal Bureau of Mines	Seattle, Wash.
	Moschetti, A. C.	Coal-mine inspection supervisor, Federal Bureau of Mines	Denver, Colo.
	Poteet, John	West Virginia Department of Mines	Charleston, W. Va.
	Quenon, E. E.	Chief, Vincennes Branch, Federal Bureau of Mines	Vincennes, Ind.
	Risner, O. L.	District mine inspector, Kentucky Department of Mines and Minerals	Ashland, Ky.
Problem distributors	Bosley, J. G.	Coal-mine inspector, Federal Bureau of Mines	Logan, W. Va.
	Davis, M. L., in charge	Safety representative, Federal Bureau of Mines	Washington, D. C.
	Dobbie, M. G.	Inspector, West Virginia Department of Mines	Fairmont, W. Va.
	Freas, G. L.	Mechanical engineer, Federal Bureau of Mines	Pittsburgh, Pa.
	Gooding, C. R.	Inspector, West Virginia Department of Mines	Buckhannon, W. Va.

TABLE 7. - Officials and judges, first-aid contest (Con.)

Office	Name	Title and company or organization	Address
Problem distributors	Kemrite, F. E.	Coal-mine inspector, Federal Bureau of Mines	Elkins, W. Va.
	McDonald, T. J.	Safety representative, Federal Bureau of Mines	Washington, D. C.
	Meadows, W. L.	Coal-mine inspector, Federal Bureau of Mines	Pikeville, Ky.
	Pieper, L. W.	General supply clerk, Federal Bureau of Mines	Vincennes, Ind.
	Rachunis, William	Mine safety representative, Federal Bureau of Mines	Beckley, W. Va.
	Reardon, J. C.	Coal-mine inspector, Federal Bureau of Mines	Cambridge, Ohio
	Yanity, J. B.	do.	Norton, Va.
Team judges	Adams, N. L.	Coal-mine inspector, Federal Bureau of Mines	Hazard, Ky.
	Artis, Harry	West Virginia Department of Mines	Matewan, W. Va.
	Baker, F. D.	Coal-mine inspector, Federal Bureau of Mines	Pittsburgh, Pa.
	Barger, D. W.	do.	Barbourville, Ky.
	Barr, R. E.	do.	St. Clairsville, Ohio
	Basinger, H. E.	do.	Harlan, Ky.
	Betchy, G. M.	do.	Big Stone Gap, Va.
	Bickelman, Henry	do.	Norton, Va.
	Bosley, J. G.	do.	Mount Hope, W. Va.
	Bradford, R. D.	do.	McAlester, Okla.
	Brooks, Chester	District mine inspector, Kentucky Department of Mines and Minerals	Harlan, Ky.
	Buchanan, P. J.	Coal-mine inspector, Federal Bureau of Mines	Norton, Va.
	Buckner, Marion	District mine inspector, Kentucky Department of Mines and Minerals	Hazard, Ky.
	Bukovitz, S. J.	Coal-mine inspector, Federal Bureau of Mines	Jellico, Tenn.
	Cagley, W. C.	do.	Johnstown, Pa.
	Callahan, J. T.	do.	St. Clairsville, Ohio
	Capps, Roy	do.	Duluth, Minn.
	Chastain, G. W.	do.	Waynesburg, Pa.
	Clawson, J. H.	do.	Norton, Va.
	Cochran, R. L.	do.	Big Stone Gap, Va.
	Colbert, G. W.	do.	Norton, Va.
	Cordray, W. M.	Health and safety engineer, Federal Bureau of Mines	Mount Hope, W. Va.
	Cress, F. A.	Coal-mine inspector, Federal Bureau of Mines	Norton, Va.
	Curry, T. F.	do.	Birmingham, Ala.
	Dobis, J. J.	do.	Fairmont, W. Va.
	Dovidas, C. M.	do.	Vincennes, Ind.

TABLE 7. - Officials and judges, first-aid contest (Con.)

Office	Name	Title and company or organization	Address
Team judges	Dumire, J. H.	Coal-mine inspector, Federal Bureau of Mines	Pittsburgh, Pa.
	Duncan, M. I.	do.	Pikeville, Ky.
	Dupree, C. H.	do.	Vincennes, Ind.
	Elkins, Omar	do.	Berlin, Pa.
	Emershaw, J. G.	do.	Norton, Va.
	Engel, H. H.	Instrument maker, Federal Bureau of Mines	Pittsburgh, Pa.
	Farren, C. G.	Safety instructor, Federal Bureau of Mines	Birmingham, Ala.
	Farris, J. D.	Coal-mine inspector, Federal Bureau of Mines	Barbourville, Ky.
	Ferraro, J. S.	do.	Mount Hope, W. Va.
	Fitzgerald, L. G.	Explosives engineer, Federal Bureau of Mines	Do.
	Forsyth, John	District mine inspector, Kentucky Department of Mines and Minerals	Pikeville, Ky.
	Furin, F. J.	Coal-mine inspector, Federal Bureau of Mines	Mount Hope, W. Va.
	Ferguson, J. H.	Inspector, West Virginia Department of Mines	Richwood, W. Va.
	Gay, T. W.	Coal-mine inspector, Federal Bureau of Mines	Mount Hope, W. Va.
	Gaylor, W. E.	do.	Welch, W. Va.
	Gilley, J. L.	do.	Do.
	Glennon, J. R.	Safety representative, Federal Bureau of Mines	Albany, N. Y.
	Haley, J. F.	Coal-mine inspector, Federal Bureau of Mines	Montgomery, W. Va.
	Harris, O. W.	do.	Mount Hope, W. Va.
	Henson, N. M.	do.	Barbourville, Ky.
	Hock, H. M.	do.	Mount Hope, W. Va.
	Holcomb, J. W.	do.	Pittsburgh, Pa.
	Hyde, C. E.	do.	Barbourville, Ky.
	Hynal, J. B.	Safety representative, Federal Bureau of Mines	McAlester, Okla.
	Ingraham, M. L.	do.	Wilkes-Barre, Pa.
	Johnston, L. S.	Coal-mine inspector, Federal Bureau of Mines	Kittanning, Pa.
	Jones, J. E.	do.	Hazard, Ky.
	Kelley, K. K.	do.	Pittsburgh, Pa.
	Kessler, W. W.	do.	Staunton, Ill.
	Knill, L. D.	Mining engineer, Federal Bureau of Mines	Salt Lake City, Utah
	Kuhn, Macle	Service man-pinspector, West Virginia Department of Mines	Hugheston, W. Va.
	Linville, R. T.	Coal-mine inspector, Federal Bureau of Mines	Big Stone Gap, Va.
	Look, A. D.	Mining engineer, Federal Bureau of Mines	Phoenix, Ariz.
	Lyons, W. L.	Coal-mine inspector, Federal Bureau of Mines	Uniontown, Pa.

TABLE 7. - Officials and judges, first-aid contest (Con.)

Office	Name	Title and company or organization	Address
Team judges	McCune, J. A.	Coal-mine inspector, Federal Bureau of Mines	Vincennes, Ind.
	Mark, T. R., Jr.	do.	Barbourville, Ky.
	Marron, E. J.	do.	St. Clairsville, Ohio
	Marshalek, Joseph	do.	Elkins, W. Va.
	Matsko, John	do.	Mount Hope, W. Va.
	Mears, G. L.	do.	Norton, Va.
	Melville, W. R.	do.	Fairmont, W. Va.
	Merrick, J. A.	do.	Mount Hope, W. Va.
	Muir, J. C.	do.	Logan, W. Va.
	Naus, L. L.	Mining health and safety engineer, Federal Bureau of Mines	Salt Lake City, Utah
	Noe, George	Coal-mine inspector, Federal Bureau of Mines	Welch, W. Va.
	Null, V. D.	do.	Johnstown, Pa.
	O'Connor, J. A.	Mining engineer, Federal Bureau of Mines	Vincennes, Ind.
	Orlando, J. F.	Coal-mine inspector, Federal Bureau of Mines	Fairmont, W. Va.
	Reid, G. E.	Safety representative, Federal Bureau of Mines	Berkeley, Calif.
	Reid, G. M.	Coal-mine inspector, Federal Bureau of Mines	Rainelle, W. Va.
	Rejonis, J. A.	do.	Birmingham, Ala.
	Riley, F. E.	do.	Fairmont, W. Va.
	Rose, Paul	District mine inspector, Kentucky Department of Mines and Minerals	Middlesboro, Ky.
	See, Raymond	do.	Lexington, Ky.
	Sheridan, J. P.	Coal-mine inspector, Federal Bureau of Mines	Vincennes, Ind.
	Sinicrope, A. A.	do.	Wilkes-Barre, Pa.
	South, C. L.	do.	Benton, Ill.
	Stepan, J. B.	Mining engineer, Federal Bureau of Mines	Duluth, Minn.
	Stevenson, P. F.	Coal-mine inspector, Federal Bureau of Mines	Norton, W. Va.
	Stewart, W. R.	do.	Norton, Va.
	Summary, J. F.	do.	Vincennes, Ind.
	Senio, P. P.	Motion-picture specialist, Federal Bureau of Mines	Pittsburgh, Pa.
	Trunko, Lex	Coal-mine inspector, Federal Bureau of Mines	Logan, W. Va.
	Turner, Everett	do.	Pittsburgh, Pa.
	Van Gilder, J. A.	do.	Mount Hope, W. Va.
	Vickers, W. R.	do.	Do.
	Ward, T. J.	do.	Fairmont, W. Va.
	Warren, Wallace	District mine inspector, Kentucky Department of Mines and Minerals	Mortons Gap, Ky.

TABLE 7. - Officials and judges, first-aid contest (Con.)

Office	Name	Title and company or organization	Address
Team judges	Webb, Arlie	Inspector-at-large, Kentucky Department of Mines and Minerals	Jenkins, Ky.
	Webb, William	District mine inspector, Kentucky Department of Mines and Minerals	Stone, Ky.
	Whittaker, R. W.	Health and safety engineer, Federal Bureau of Mines	Vincennes, Ind.
	Wiley, H. H.	Coal-mine inspector, Federal Bureau of Mines	Richlands, Va.
	Williams, W. J.	Superintendent, mine rescue station, Illinois Department of Mines and Minerals	Springfield, Ill.
	Wilson, H. F.	Coal-mine inspector, Federal Bureau of Mines	Schulykill Haven, Pa.
	Zaverl, L. L.	Mining engineer, Federal Bureau of Mines	Duluth, Minn.

COMBINATION FIRST-AID AND MINE RESCUE CONTEST

Three teams entered the contest as combination teams; that is, each team competed in both the mine-rescue and first-aid contests.

The following teams competed in both contests and finished in the order indicated.

TABLE 8. - Combination teams

Standing	Company	Mine	Address
1	Consolidation Coal Co. (Ky.)	No. 204	Jenkins, Ky.
2	Hanna Coal Co.	Dun Glen No. 11, team 2	Dun Glen, Ohio
3	Jamison Coal & Coke Co.	Jamison No. 9	Farmington, W. Va.

Three major trophies were donated for this contest; and, as only three teams competed, each team received a trophy.

BANQUET AND AWARDING OF PRIZES

After the contest was completed, a banquet was held in the Van Orman Hotel at 6:00 p.m., October 1, to announce the winners and present prizes to the winning teams. Unlike banquets of former contests, the 1953 banquet was not paid for entirely from contest funds. Tickets were sold to cover the cost of the dinner, and all other necessary expenses were covered by contest funds.

The banquet was attended by approximately 600 team members, officials, judges, and guests. Prizes and awards were made to the winning teams after the dinner.

Awards were made to teams that had the 6 highest scores in the mine rescue contest and to teams having the 14 highest scores in the first-aid contest. As only 3 teams were entered in the combination contest, all 3 teams were awarded prizes.

The Congressional Medallions awarded to the teams placing first in the mine rescue and first in the first-aid contest were presented by James Westfield, Chief, Health and Safety Division, Bureau of Mines, Washington, D. C., who represented J. J. Forbes, Director.

The Mine Safety Appliances Co. awarded trophies to the teams winning first in the first-aid contest, second in the mine rescue contest, and third in the combination contest. These trophies were presented by George H. Dieke, chairman of the board, Mine Safety Appliances Co.

Percy Tetlow, assistant to the president, United Mine Workers of America, presented the trophies donated by his organization to the teams finishing first in the combination contest, second in the first aid, and third in mine rescue.

The trophies donated by the National Coal Association were presented by Tom Pichett, executive vice president, to the teams placing first in mine rescue, second in the combination contest, and third in first aid.

Trophies for first-place teams in each contest were identical, as were those for second and third place.

Trophies donated by Coal Age and prizes given to teams other than the first three teams in each contest were presented by Howard T. Batman, general manager and counsel, Lynch Coal Operators' Association, Terre Haute, Ind., who was toastmaster.

Names of the winners, prizes given, and donor of prizes for each contest are listed in tables 9, 10, and 11.

TABLE 9. - First aid - winners and prizes

Team	Score	Prize	Awarded by
First place			
Pardee & Curtin Lumber Co. Bergoo No. 4 mine Bergoo, W. Va. George Bonivich, captain	98.36	Congressional Medallion Trophy, individual first-aid kits Silver cup	Federal Bureau of Mines, Mine Safety Appliances Co., Coal Age
Second place			
U. S. Steel Corp. - Frick district National No. 3 mine Uniontown, Pa. J. Ray St. Clair, captain	98.22	Trophy, individual silver keys	United Mine Workers of America
Third place			
U. S. Steel Corp. - Frick district Kyle-Collier mines Uniontown, Pa. Verner Hoover, captain	98.10	Trophy, individual silver keys	National Coal Assoc.
Fourth place			
Consolidation Coal Co. (Ky.) Mine 214 Jenkins, Ky. Warnie Flint, captain	97.98	21-inch companion bags	Jeffrey Manufacturing Co.

TABLE 9. - First aid - winners and prizes (Con.)

Team	Score	Prize	Awarded by
Fifth place U. S. Steel Corp. Group of mines (team 1) Gary, W. Va. John Dickinson, captain	97.94	Eversharp pen and pencil sets	Bituminous Casualty Co.
Sixth place Pittsburgh Coal Co. Montour No. 10 mine Library, Pa. Albert Waggett, captain	97.92+	Ronson lighters	Anonymous
Seventh place Crescent Coal Co. Briar Creek mine Central City, Ky. C. T. Franklin, captain	97.92-	Top-grain cowhide Doppkitt cases	Goodman Manufacturing Co.
Eighth place North West Virginia Coal Mining Institute South Union Coal Co. Jamison No. 11 mine Edna, W. Va. John McCullouch, captain	97.88	Cuff-link sets	Lee Norse Co.
Ninth place Pond Creek Collieries Pond Creek mine Williamson, W. Va. Chamler Gibson, captain	97.86	Note cases and billfolds	Cincinnati Mine Machinery Co.
Tenth place Consolidation Coal Co.(W.Va.) Mine 32 Fairmont, W. Va. Lowell H. Kelly, captain	97.84	Rite-point lighters	General Re-Insurance Co.
Eleventh place Hanna Coal Co. Piney Fork No. 1 mine Piney Fork, Ohio Andy Janoski, captain	97.82+	Zippo lighters	Le-Roi Co.
Twelfth place Hanna Coal Co. Team 1 - Georgetown No. 12 mine Adena, Ohio Adolph Raymer, captain	97.82-	Billfolds	American Mine Door Co.
Thirteenth place Pittsburgh Coal Co. Westland mine Westland, Pa. Edward Rettinger, captain	97.80	Zippo lighters	National Mine Service Corp.
Fourteenth place Philadelphia and Reading Coal and Iron Co. St. Nicholas Central Breaker mine St. Nicholas, Pa. John J. Starkey, captain	97.78	Fisher pens	Guyan Machinery Co.

TABLE 10. - Combination teams - winners and prizes

Team	Score	Prize	Awarded by
First place Consolidation Coal Co. (Ky.) Mine 204 Jenkins, Ky. Raymond Wetzel, captain		Trophy - silver keys	United Mine Workers of America
Second place Hanna Coal Co. Team 2 - Dun Glen No. 11 mine Dun Glen, Ohio Lewis Jesalosky, captain		do.	National Coal Assoc.
Third place Jamison Coal & Coke Co. Jamison No. 9 mine Farmington, W. Va. Harry Floyd, Jr., captain		Trophy - first aid kits	Mine Safety Appliances Co.

TABLE 11. - Mine rescue - winners and prizes

Team	Total discounts	Prize	Awarded by
First place International Harvester Co. Wisconsin Coal mine 2 Benham, Ky. Robert P. Hightower, captain	22	Congressional Medallion Trophy and silver keys Silver cup	Federal Bureau of Mines, National Coal Association, Coal Age
Second place Consolidation Coal Co. (Ky.) Hendrix mine Jenkins, Ky. Douglas Damron, captain	23	Trophy and Individual first-aid kits	Mine Safety Appliances Co.
Third place Eastern Coal Corp. Stone No. 4 and 8 mines Stone, Ky. Harry Hager, captain	31	Trophy and Individual silver keys	United Mine Workers of America
Fourth place Inland Steel Co. Wheelwright mine Wheelwright, Ky. Virgil Blevins, captain	43	Individual Parker "51" pen and pencil sets	Eureka Casualty Co.
Fifth place Consolidation Coal Co. (Ky.) Mine 204 Jenkins, Ky. Raymond Wetzel, captain	49	Brush sets	American Re-Insurance Co.
Sixth place Peabody Coal Co. No. 40 mine Galatia, Ill. Fred Rice, captain	63	Ronson lighters (inscribed)	Coal Operators Casualty Co.

State Winners

The standing of teams in both contests were used as a basis for deciding the State winners. The team from each State having the highest score was selected as the winner in its respective State. Several State departments of mines awarded State banners to the winning teams indicating the championship of that State. However, several States were represented by only one team.

State winners for each contest are shown in table 12.

TABLE 12. - State winners - mine rescue

State	Company	Mine and address	Total discounts	Position in contest
Kentucky	International Harvester Co.	Wisconsin Steel, Benham	22	1
West Virginia	Red Jacket Coal Corp.	Mitchell Branch, Red Jacket	81	11
Illinois	Peabody Coal Co.	No. 40, Galatia	63	6
Maryland	United Mine Workers of America, District 16	State of Maryland, Kitzmiller	70	8
Pennsylvania	United States Steel Corp.	Robena, Uniontown	64	7 - No banner
Ohio	Hanna Coal Co.	Dun Glen No. 11, Dun Glen	88	9 - No banner

First aid

State	Company	Mine and address	Score	Position in contest
Kentucky	Consolidation Coal Co.(Ky.)	No. 214, Jenkins	97.98	4
West Virginia	Pardee & Curtin Lumber Co.	Bergoo No. 4, Bergoo	98.36	1
Illinois	Peabody Coal Co.	No. 10, Pawnee	96.20	41
Wyoming	Union Pacific Coal Co.	Superior D. O. Clark, Superior	96.88	35
Tennessee	Southern Collieries	Pee Wee, Lake City	94.76	46
Indiana	Wolfe-Koenig Corp.	Sunshine, Bicknell	95.90	43 - No banner
Pennsylvania	United States Steel Corp. Frick district	National No. 3, Uniontown	98.22	2 - No banner
Ohio	Hanna Coal Co.	Piney Fork No. 1, Piney Fork	97.82+	11 - No banner

Kentucky used the standing of the teams in the National Contest to determine the winners for the State in lieu of holding a State contest. Trophies and other prizes donated by various organizations in Kentucky were to be awarded at a later date by these organizations.

COST OF FIRST-AID AND MINE RESCUE CONTEST

It would be difficult to determine the exact cost of the contest, as most of the work in preparing and conducting the contest was performed by committee members, and no cost was charged to the contest. However, it was necessary to obtain funds to cover the expenses for the use of the coliseum, printing, badges, and other miscellaneous expenses. The necessary amount was raised by popular subscription from mining institutes, operators' associations, mining companies, mining labor organizations, and others. The members of the finance committee were responsible for collecting funds. Personnel of the Bureau of Mines are not permitted to solicit

funds or allowed to take part in activity for raising funds. The following organizations contributed money for the 1953 contest:

Contributors of Funds

Big Horn Coal Co., Sheridan, Wyo.
Big Sandy-Elkhorn Coal Mining Institute, Pikeville, Ky.
Central Pennsylvania Coal Producers' Assoc., Altoona, Pa.
Cumberland Valley Mining Institute, Middlesboro, Ky.
Gunn Quealy Coal Co., Quealy, Wyo.
Harlan County Coal Operators' Association, Harlan, Ky.
Indiana Coal Operators' Association, Terre Haute, Ind.
Kanawha Coal Operators' Association, Charleston, W. Va.
Kemmerer Coal Co., Frontier, Wyo.
Kentucky River Mining Institute, Hazard, Ky.
Logan Coal Operators' Association, Logan, W. Va.
National Coal Association, Washington, D. C.
Northern West Virginia Coal Operators' Association, Fairmont, W. Va.
Nuggett Coal Co., Hanna, Wyo.
Ohio Coal Association, Cleveland, Ohio
Operators' Association of the Williamson Field, Williamson, W. Va.
Pocahontas Operators' Association, Bluefield, W. Va.
Pond Creek-Tug River Mining Institute, Williamson, W. Va.
The Colony Coal Co., Rock Springs, Wyo.
Union Pacific Coal Co., Rock Springs, Wyo.
United Mine Workers of America, Washington, D. C.
Western Kentucky Mining Institute, Madisonville, Ky.
Winding Gulf & New River Coal Operators' Association, Beckley, W. Va.
Wyodak Coal Co., Gillette, Wyo.

The expenses of participating teams was borne by the company or organization that they represented. The expenses of judges, officials, and others were covered in the same manner.

The cost of the banquet held in the evening following the close of the contest was met by selling tickets to those attending, at $5.75 each. However, the flowers and other decorations used for the banquet were paid for from contest funds.

The gallery used in the mine rescue contest was constructed by Bureau of Mines personnel, and most of the material and equipment was furnished by the Bureau. The fencing used to outline the mine was loaned by the coliseum. The gallery was erected by committee members, and much of the equipment and material used was used in previous contests, thus little expenditure was required.

Early in the year the Finance Committee made a tentative budget to ascertain the amount of money needed to conduct the contest. The treasurer and members of the Finance Committee raised $5,234.05 to defray the cost of the contest. The disbursements covering all expenses amounted to $3,712.11, leaving a balance of $1,521.94, which was returned to the contributors on a pro rata basis.

An itemized list of disbursements is shown in table 13.

TABLE 13. - Disbursements

Watts Printing Co.		$ 103.00	
Hotel Cleveland		41.66	
Allen County Memorial Coliseum	$600.00		
	150.00		
	835.00	1,585.00	
Frank W. King Agency		145.90	
R. G. Warncke (Neuman Studio)	4.00		
(Aflex Tickets)	40.25	44.25	
Sound Studios, Inc., of Washington		259.30	
W. H. Tomlinson	31.00		
	92.07	123.07	
Graphic Arts Press, Inc.	45.90		
	329.72	375.62	
Berthold Nebel		618.15	
Hotel Van Orman	79.10		
	152.50	231.60	
Wayne Decorating Co.		60.00	
Cornelius Printing Co.		15.30	
Frances Clements		100.00	
Railway Express		9.26	$3,712.11
Balance in Charleston National Bank 1/13/54			$1,521.94

APPENDIX A: GENERAL RULES FOR CONDUCTING THE NATIONAL FIRST-AID AND MINE RESCUE CONTEST, 1953

GENERAL RULES FOR CONDUCTING THE NATIONAL FIRST-AID AND MINE RESCUE CONTEST, THE NEW ALLEN COUNTY MEMORIAL COLISEUM, FORT WAYNE, IND., SEPTEMBER 29, 30, AND OCTOBER 1, 1953

1. The first-aid and mine rescue contests will be held in the New Allen County Memorial Coliseum, Fort Wayne, Ind., September 29, 30, and October 1, 1953.

2. There will be no limitations as to the number of teams admitted to this contest from any State, district, company, or organization.

3. The members of all teams must be bona fide employees of the mine or mines, smelter or smelters, mill or mills, petroleum refinery or other branch of the petroleum industry, quarry or quarries, or plant of an allied industry, represented by the team and may be underground or surface workers in or about the mine, smelter, mill, metallurgical plant, petroleum operation, quarry, or allied industry.

4. Any organization, union, club, or local benefit society may enter a team. The members of such team shall be actual members of the said organization and shall be employed in or about a mine, smelter, mill, petroleum plant, quarry, or allied industry plant in the local district covered by the membership of the organization.

5. No physician, trained nurse, safety engineer, safety inspector, former Bureau of Mines safety instructor, State safety instructor, or a full-time paid first-aid instructor regularly employed by a company shall be a member of a team.

6. Entry shall be submitted in writing or by wire to Mr. W. H. Tomlinson, Secretary, National First-Aid and Mine Rescue Contest, c/o Federal Bureau of Mines, 4800 Forbes Street, Pittsburgh 13, Pa., on or before September 12, 1953. On or prior to this date, the name of the captain of each contesting team must be submitted. Substitutes will, however, be allowed after September 12, 1953, if necessary,

by proper statement in writing. No entries will be received after September 12, 1953, except that in cases where participation in the National contest is determined through elimination processes in district, State, or other contests held on or after September 12, 1953, teams from these contests will be permitted to enter the National meet subsequent to September 12, 1953. Provided further, that no notice of entry of any teams will be accepted after 12 o'clock noon, Saturday, September 26, 1953. Entry blanks may be obtained by application to the nearest Bureau of Mines Branch or Section Office.

7. The same team may enter the mine rescue and first-aid contests.

8. The same team members who participate in the first-aid contests, exclusive of the patient, must constitute the mine rescue team in order to qualify for combination prizes.

9. Each team entering for the mine rescue contest and each team entering for the first-aid contest will be given a number to determine its order of performance and field location. Such numbers will be assigned by lot and drawn by the teams as they register.

10. Registration of first-aid and mine rescue teams, judges, and contest officials will be at Hotel Van Orman, Ft. Wayne, Ind., between 1:00 p.m. and 10:00 p.m., September 28, 1953. Registration will be continued at the coliseum between 8:00 a.m. and 8:45 a.m., September 29, 1953.

11. Evidence must be presented to the contest officials that each member of a mine rescue team has had a thorough physical examination by a qualified physician not more than 30 days before the contest. At the time of registering, the captain of each team will be required to turn over to the registrars a Bureau of Mines Physician's Examination Form signed by the examining physician, showing that each member is physically sound and capable of performing strenuous work under oxygen. Physician's Examination Form (Bureau of Mines Form 6-141) may be obtained from the nearest Bureau of Mines Branch or Section Office.

12. Any team not on the field and ready, when the first event for which it is entered is announced, will be disqualified for the contest.

13. Subject to possible later revision, the preliminary examination and testing of rescue crews and apparatus will commence at the Coliseum, Fort Wayne, Ind., at 8:00 a.m., Fort Wayne time, September 29, 1953. The mine rescue contest proper will be held at approximately the same time. Each team after completing the preliminary examination will be conducted to the contest gallery where it will work the mine rescue problem.

14. Subject to possible later revision, the first-aid contest will begin at 1:00 p.m., September 30, and at 9:00 a.m., October 1, 1953, and continue until the completion of the contest.

15. The use of any type of mechanical resuscitating device will not be permitted in the first-aid or mine rescue events. Provided that this rule will not prohibit the use of any device approved by the United States Bureau of Mines which will afford the proper protection for a subject (patient) under the conditions specified in the problem.

16. After the completion of the first-aid and mine rescue contests, teams with their equipment must remain on the field until announcements are made regarding ties, if any.

17. Any team which has left the field or whose equipment is not available when called upon to compete in ties will be disqualified.

18. Possible ties in contests will be decided by special events; if time does not permit, they may, by mutual agreement, be decided by lot.

19. Information regarding cups and prizes will be found in the program of the meet which will be given to the teams when they register.

20. The first-aid and mine rescue teams winning prizes will be officially announced during the evening of October 1, by a person or persons designated for this purpose.

21. Following the awarding of prizes, the captain of each team will be furnished with his team rating.

22. All rules relating to the contest will be rigidly enforced.

APPENDIX B: RULES GOVERNING MINE RESCUE CONTEST

RULES GOVERNING NATIONAL MINE RESCUE CONTEST, 1953

1. Each team shall be composed of five men, one of whom shall act as captain. Each team member shall be provided with an oxygen-breathing apparatus (2-hour type) and closed lights of a type approved by the United States Bureau of Mines. Provision for six men if telephone is used.

2. Each team should bring one substitute to be available for use in case of sickness or for any other reason a team member is unable to compete or to act as patient if a patient is required in the problem.

3. The substitute or patient shall weigh approximately the same as the average weight of the team members.

4. Members of mine rescue teams must not be over fifty (50) years of age, as older men than this will not be permitted to participate.

5. Prior to the beginning of the mine rescue contest the team captain will present to the chief judge a medical certificate, dated not over 30 days prior to the contest, showing that each member of his team (including the captain) is physically sound and capable of performing strenuous work under oxygen.

6. Each crew shall provide its own apparatus, including goggles for each member of team.

7. Goggles should be in place but need not be worn over eyes unless conditions actually require their use.

8. Any oxygen or other self-contained breathing apparatus approved by the United States Bureau of Mines that will afford the proper protection for a subject under the conditions specified in the problem amy be used on the subject.

9. Teams will be required to bring with them a sufficient supply of regenerating material and apparatus accessories for both preliminary examination and performance of problem or problems.

10. Each team will be given a preliminary right or wrong written or oral examination and will perform one or more problems. The teams will be furnished a

problem and 10 minutes will be allowed for its study prior to putting on apparatus and other preparations before entering the mine.

11. Before reporting to the mine entrance all apparatus must be fully assembled and ready to wear. Oxygen bottles shall be charged to 100 atmospheres or above, but not to exceed 150 atmospheres. It will be the teams' responsibility to have the apparatus sufficiently charged with oxygen for the contest.

12. In the event a crew is not ready to proceed with the preliminary examination or the working of the problem it may, with the approval of the chief judge, waive its numerical position in favor of the next crew which is ready. A crew which waives its numerical place shall automatically take the position of the team which replaces it.

13. Life lines, tools, stretchers, brattice boards, canvas, nails, or other material necessary for constructing bulkheads or stoppings, and fire-fighting equipment (if necessary in problem) will be furnished by the field committee. However, obtaining this material will be the teams' responsibility.

14. Each team should have its own canary birds and cages or United States Bureau of Mines approved carbon monoxide detectors and flame safety lamps; however, if a team does not have such equipment it will be furnished by the field committee on request.

15. Apparatus will be furnished by the field committee on request for the recovery of men supposed to be entombed. Teams may, however, bring their own apparatus for this purpose if they so desire.

16. All teams not performing problems will be placed in a location where they are unable to obtain information regarding the problem being worked. No person excepting designated officials will be allowed to communicate with the teams waiting to perform problems. Teams which have performed will not be permitted to communicate with teams awaiting their turn.

17. Accompanying officials, substitutes, or friends of a team shall remain away from the team and make no effort to communicate with it before or during the preliminary examination or the working of the problem.

18. After the team leaves the mine on the completion of the problem and the judges have examined the team, apparatus, etc., the crew will be given 10 additional minutes for checking and marking the map.

19. The chief judge and his assistants will be men trained in the assembly, use, and care of the different types of oxygen-breathing apparatus, gas masks, etc., and will not be connected with any of the crews, employers of competing crews, or the manufacturers or agents of breathing apparatus, gas masks, or gas-detecting devices.

20. Infractions of any of the rules governing the mine rescue contest, if such infractions are not covered in the table of discounts, may at the discretion of a committee of judges result in the disqualification of the team or teams involved.

Preliminary Examination of Crews

1. The preliminary examination of crews will be held in a place designated and assigned by the contest committee and chief judge.

2. Examination of crews will be conducted in the order of the number drawn for position.

3. A judge or judges will examine the captain and other team members as to their knowledge of the proper operation, assembly, and testing of oxygen or other self-contained breathing apparatus, gas masks, self-rescuers, gas-detecting devices, and methods of procedure.

4. Teams being examined will be supervised by 2 or more judges, at least one of whom will be a Bureau of Mines employee. The committees of judges will work under the chief judge.

5. The judges will observe the captain and other team members as to their knowledge of proper operation, assembly, and testing of self-contained breathing apparatus, gas masks, self-rescuers, gas-detecting devices, and methods of procedure during the 10-minute preparation period.

6. Judges shall not ask questions that do not relate to the problem or appear on the score card.

Procedure of Rescue Crews in Performing Problems

1. Teams will report to the judges when called upon. Ten minutes will then be allowed for study of the problem and inspection of apparatus and equipment. At the end of the ten-minute period, a whistle or gong will be sounded.

2. Each team will be given a written problem. The problem will indicate clearly the specified procedure of the team and will show the working time permitted.

3. During the 10-minute preparation period, team members must check apparatus for working condition and air tightness. High and low pressure tests, admission valve opening and closing tests and whistle valve test must be made.

4. Each team member must clear his apparatus before getting under oxygen and then proceed to perform the problem.

5. The team will check life-line signals with the judge at the life-line reel, procure mine map, procure and place in operating condition gas detecting devices, procure stretcher, and any other materials needed for working the problem.

6. Standard life-line signals will be used by all teams as follows:

1 Pull - "Stop" if traveling or "all right" if at rest
2 Pulls - "Advance"
3 Pulls - "Retreat" (from fresh-air base to team, "return at once")
4 Pulls - "Distress"

7. If telephone is used, it will replace the use of the life-line.

8. Teams must count off.

9. Horns or other audible signals between team members will be the same as given for life-line signals.

10. Crew members will keep life-line taut at all times when traveling in order to be able to give or receive signals.

11. Persons selected by the United States Bureau of Mines will operate the life line at the fresh-air base for all crews.

12. The entire gallery, enclosed area, or roped-off space used to represent a portion of a mine shall be assumed to be filled with unbreathable atmosphere, unless otherwise specified in problem.

13. The captain will examine gages, apparatus, etc., twice while advancing into the mine and once while coming out.

14. Each crew on reaching the face or breast of a room, chamber, entry, drfit, crosscut, etc., will mark the initials or name of the captain or crew, also, the day, month, and year of the trip, in order to indicate that the area has been explored. Places so marked should be indicated by the crew on the map, which must be turned over to the judges after the 10-minute time allotted as mentioned elsewhere in these rules.

15. The working time for the problem will start when the team leaves the fresh-air base and continue until the team completes the problem and leaves the gallery, enclosed area, or roped-off space, and the captain indicates to the judges by raising his hand that the problem has been completed.

16. A penalty for overtime for each minute or fraction thereof will be made in accordance with the points shown on the discount sheet.

17. After the crew completes the working of the problem, have had their apparatus examined by the judges, and removed their mouthpieces and nose clips, 10 minutes will be given to check and mark the map before turning it over to the judges.

18. The marked map as submitted by the team will be compared with the problem by the judges and credited or charged against the team as marked.

19. Each team as it performs a problem will be rated by a committee of judges. Bureau of Mines employee will be the chairman for the judges, and he will work under a chief judge.

Judging

1. Insofar as possible, only men trained in the assembly, use and care of the different types of mine rescue equipment and trained in mine rescue procedure will be used as judges.

2. Groups of 5 men will judge the preliminary examination and groups of 5 men will judge during the 10-minute preparation period. Judges will be stationed in the mine and will score the teams on the particular part of the problem assigned to them. Judges will be assigned to act as time keepers and will indicate on the score card where the apparatus is cleared and where life-line or other signaling is performed. These same or a separate group of judges will score the teams in the smoke room and will check maps.

3. The judge or judges will mark a score card for work done by each team in their specified area. All judges will sign discounts where given. Discount sheets will be marked and delivered to the score-card examiner promptly.

Miscellaneous

1. Problems will be on a flat layout, having no inclines or ladders unless the team has been notified to the contrary prior to the date of the contest.

2. Only problems which can be worked in 25 to 35 minutes will be given, and insofar as possible, materials rather than placards will be used in the mine.

3. The captain and one or more team members may advance a maximum of 35 feet inby the rest of the team or the rear man may go back from the team a like distance when in an atmosphere reasonably free of smoke.

4. Roof examinations must be made from rib to rib at working faces. Roof examinations need not be made along ribs unless material or placards are along the rib.

5. Stations or stops in the discount sheet means any place in the mine where the entire team is stopped for any purpose.

6. Lamp and detector tests must be made in the entire face area as well as in boxes if testing boxes are being used. Examinations should begin on the side of the place opposite the testing box and the face area should be examined before a test is made in the box.

7. Roof tests should be made by the sound-and-vibration method.

8. Examinations for gas may be made with a walking or traveling flame or with a nonluminous flame.

INTERPRETATIONS FOR JUDGES AND TEAM TRAINERS

Previous to entering the mine or leaving fresh-air base

1. Apparatus should be evacuated of air before turning on oxygen as shown on page 97 of the 1941 edition of the Bureau of Mines Manual on Self-Contained Oxygen Breathing Apparatus.

2. The captain must examine the gages and apparatus of team members and have a team member examine the captain's gage and apparatus before entering the mine.

3. Extra apparatus must be tested for air tightness and proper working condition. High and low pressure tests, admission valve opening and closing tests, and whistle valve tests must be made. Tester should not put mouthpiece in his mouth while testing.

4. Hand or audible counting off is acceptable. Team members must "count off" immediately before leaving fresh-air base or surface. It is not necessary to "count off" on reentering the mine during the working of the problem.

5. Team member will be discounted for breathing external air or for failure to place the nose clip promptly after oxygen has been turned on.

After entering the mine and beyond fresh-air base

1. This section is not intended to cover horn signals but covers only life-line signals. Signals must be given before leaving fresh-air base.

2. Teams must not be discounted under other sections for wrong horn signaling.

3. Course of travel should be marked regardless of whether or not a life line is used. Arrows need be marked only around corners, but they must point toward place of entrance. Course of travel should only be used.

4. Items other than those listed specifically on the discount sheet need not be marked.

5. An interval of from 5 to 7 feet between any 2 members of the team will not be considered improper.

6. Teams will not be discounted under this section unless the safety of the crew is actually endangered. Examples of endangering the crew are traveling under unsupported, dangerous roof, carrying a lighted flame safety lamp into mixtures of methane-air, and proceeding with damaged flame safety lamp.

APPENDIX C: JUDGES' DISCOUNT SHEETS, MINE RESCUE CONTEST

A. Preliminary Examination

For the preliminary examination each team member was given a set of 10 questions to be answered "right" or "wrong." Five different sets of questions were used, each team member answering one set. A team member could receive 20 points by answering all questions correctly.

This type of examination greatly speeded the preliminary examinations.

The teams were socred as follows:

		Discounts
Team captain	20	-
Team member No. 1	20	-
Team member No. 2	20	-
Team member No. 3	20	-
Team member No. 4	20	-
Total	100	

The following five sets of questions, taken from the 1941 edition of the Bureau of Mines Self-Contained Oxygen Breathing Apparatus Handbook, were answered by team members:

PRELIMINARY MINE RESCUE QUESTIONS

	Right	Wrong
1. The self-rescuer can be used safely in any toxic atmosphere.	_____	_____
2. The reducing valve is in need of repair when the safety valve whistles.	_____	_____
3. The Universal gas mask will protect the wearer against all smoke, gases, and fumes, including carbon monoxide and oxygen contents below 15%.	_____	_____
4. The pressure gage indicates the number of pounds pressure per square inch in the oxygen bottle.	_____	_____
5. A rescue crew wearing oxygen breathing apparatus should not crawl more than 50 feet from fresh air.	_____	_____

	Right	Wrong
6. The safety cap attached to the oxygen bottle will permit the oxygen to escape if it is exposed to 94° Fahrenheit.	____	____
7. The volume of the oxygen bottle is 110 to 116 cubic inches.	____	____
8. The bypass valve is provided so that the wearer can obtain oxygen if the inhalation tube is broken.	____	____
9. The reducing valve is made without adjusting screws.	____	____
10. The safety valve should operate at about 7 pounds above atmospheric pressure.	____	____

Working time: 5 minutes

PRELIMINARY MINE RESCUE QUESTIONS

	Right	Wrong
1. The flexible corrugated-rubber tubes attached to the cooler permit free movement of the wearers head and do not interfere with the circulation of air in the apparatus.	____	____
2. The inhalation and exhalation valves are close to the wearer's mouth to reduce the dead-air space and restrict the negative pressure on inhalation breathing to a metal part.	____	____
3. About 8 to 10 percent carbon dioxide is given off in the exhaled breath.	____	____
4. The mouthpiece and breathing tubes should be sterilized by boiling.	____	____
5. When the admission valve is open to admit oxygen approximately 1/4-inch positive water-gage pressure is in the air circulating system.	____	____
6. The Universal gas-mask canister is good for 2 hours of continuous or intermittent use.	____	____
7. An oxygen bottle when fully charged to 135 atmospheres contains about 8.6 cubic feet of oxygen.	____	____
8. The bypass valve on an oxygen bottle should be opened 2 to 4 full turns to insure the wearer an adequate supply of oxygen at all times.	____	____
9. The air capacity of the breathing bag is about 8 quarts.	____	____
10. The inhalation check valve prevents the wearer from inhaling outside air when the release valve is open.	____	____

Working time: 5 minutes

PRELIMINARY MINE RESCUE QUESTIONS

	Right	Wrong
1. The Universal gas mask canister is painted red to show that it can only be used safely in coal mines.	_____	_____
2. A self-contained oxygen breathing apparatus will protect the wearer in any irrespirable atmosphere.	_____	_____
3. The four valves in the metal mouthpiece are the inhalation, exhalation, admission and release valve.	_____	_____
4. The pounds pressure at which a reducing valve shuts off the flow of oxygen is measured with a low-pressure gage.	_____	_____
5. A mine rescue crew is composed of 5 to 8 men, one of whom is the captain.	_____	_____
6. A permissible flame safety lamp is carried by a rescue crew only to detect explosive gases.	_____	_____
7. The high-pressure gage on the oxygen pump is used to measure the pressure of oxygen to the apparatus bottle.	_____	_____
8. The purpose of the metal mouthpiece is to provide a container for the valves and to prevent the wearer from talking.	_____	_____
9. The apparatus gage indicates the pressure of the oxygen in the cylinder and is a measure of the working time remaining.	_____	_____
10. The pressure gage indicates the number of pounds pressure per square inch in the oxygen bottle.	_____	_____

Working time: 5 minutes

PRELIMINARY MINE RESCUE QUESTIONS

	Right	Wrong
1. A colorimetric carbon monoxide tester is the only instrument available for a rescue crew to determine the presence of carbon monoxide.	_____	_____
2. A permissible Wolf flame safety lamp is the only such lamp approved for use of a mine rescue crew.	_____	_____
3. A self-rescuer is approved by the Bureau of Mines for self-rescue from carbon monoxide and smoke.	_____	_____
4. The self-rescuer will provide the wearer with protection from carbon monoxide for at least 2 hours.	_____	_____

	Right	Wrong
5. A lighted permissible flame safety lamp should always be carried with a team using Universal gas masks.	____	____
6. A gas-mask crew on an underground trip encountered a free-burning mine fire; oxygen content in an air sample collected at the fire showed 5 percent oxygen.	____	____
7. The admission valve is tested for proper working condition with a low-pressure gage.	____	____
8. The pressure gage indicates the number of pounds pressure per square inch in the oxygen bottle.	____	____
9. The safety valve is made to whistle to warn the wearer that there is too much pressure in the reducing valve.	____	____
10. The rescue crew may travel on a level, straight, unobstructed course, free from smoke, 5 feet or more in height, with a reserve crew at the fresh air base 2,000 feet (4,000 feet round trip).	____	____

Working time: 5 minutes

PRELIMINARY MINE RESCUE QUESTIONS

	Right	Wrong
1. The function of the reducing valve is to reduce the oxygen from a high pressure of 1,984.5 to a low-breathable pressure of 7 to 9 pounds.	____	____
2. The admission and reducing valves are closed when the main oxygen valve is closed.	____	____
3. If the pressure gage tube or the gage develops a leak or breaks, close the main bottle valve and return to fresh air.	____	____
4. The only lubricant used in an oxygen pump is a mixture of 1 part pure glycerin and 1 part distilled water.	____	____
5. The purpose of the breathing bag is to provide a flexible reservoir for the exhaled air and operate the admission valve and control the admission of oxygen.	____	____
6. The purpose of the perforated tube extending into the oxygen bottle is to prevent moisture and sediment from getting into the reducing valve.	____	____
7. The chemical material used to absorb carbon dioxide in the regeneration is Cardox.	____	____
8. The bypass valves should be opened 2 to 4 full turns to insure an adequate supply of oxygen for the wearer.	____	____
9. The flow of oxygen through the reducing valve is measured with a high-pressure gage.	____	____
10. The pounds pressure at which a reducing valve shuts off the flow of oxygen is measured with a low pressure gage.	____	____

Working time: 5 minutes

Team No. _____

B. Checking Apparatus and Other Procedure before Entering the Mine or Leaving Fresh-Air Base

Note: Teams will be additionally discounted for repetitions of the same mistake in the same problem. For example: Two members of crew breathing external air, 4 points discount.

		Discount
(a)	Apparatus improperly assembled, each man	3_____
(b)	Apparatus improperly adjusted to wearer, each man	1_____
(c)	Failure to evacuate apparatus completely of air before turning on oxygen, each man	3_____
(d)	Apparatus part or parts worn or deteriorated so as to be dangerous to wearer, each man	3_____
(e)	Oxygen supply of team member less than 90 or more than 135 atmospheres, each man	2_____
(f)	Insufficient or too great rate of oxygen feed, evidenced by flat or high inflated breathing bag, each apparatus	1_____
(g)	Failure to examine gauges and apparatus before entering the mine, each apparatus	2_____
(h)	Failure to take necessary equipment and gas-detecting devices to work the problem, each ommission	2_____
(i)	Failure to have equipment and gas-detecting devices ready for testing.	1_____
(j)	Failure to test completely extra apparatus or other protective device to be used when a live man is to be rescued	3_____
(k)	Failure of team to "count off" before entering mine	2_____
(l)	Failure of team to procure mine map	3_____
(m)	Failure of team to arrange standard life-line signals with fresh-air base	3_____
(n)	Failure of team to be under oxygen and ready to enter the mine at the end of the 10-minute preparation period. For each minute or fraction thereof over the 10-minutes	1_____
(o)	Team member talking to unauthorized person without permission of the supervisor or judge, each infraction	5_____
(p)	Breathing of external air after getting under oxygen, each man, each infraction	2_____
(q)	Failure to test stretcher	2_____
	TOTAL DISCOUNT	_____

_____ _____ _____

Judge Judge Judge

Team No._____

C. After Entering the Mine and Beyond Fresh-Air Base

Note: Teams will be additionally discounted for repetitions of the same mistake in the same problem. For example: Unnecessary use of bypass valve, each infraction 2 points discount; excessive use of relief valve, each team member committing the infraction, 2 points discount, etc.

		Discount
(a)	Failure to take lifeline into mine	10_____
(b)	Failure to signal properly by use of lifeline using standard signals, each infraction	2_____
(c)	None of team members having hold of lifeline, each infraction	2_____
(d)	Failure to maintain proper distance while traveling, each man	1_____
(e)	Failure to signal properly with horn or other similar device, each infraction	1_____
(f)	Failure to mark properly course of travel, each infraction	2_____
(g)	Failure to mark date, team member and initial, faces of rooms, entries, crosscuts, impassable falls, barricades and stoppings, each infraction	2_____
(h)	Failure of captain to direct or command crew properly, each infraction	2_____
(i)	Captain or other team member doing anything to endanger safety of the crew, each infraction	4_____
(j)	Failure of the captain to test, or to improperly test roof, each infraction	2_____
(k)	Failure to examine gauges and apparatus, and clear apparatus of excessive nitrogen at least every 15 minutes during working of problem, each infraction	4_____
(l)	Breathing external air while working problem, each team member, each infraction	6_____
(m)	Unnecessary use of bypass, each team member	2_____
(n)	Excessive use of relief valve	2_____
(o)	Insufficient or too great rate of oxygen feed, evidenced by flat or highly inflated breathing bag, each apparatus	1_____
(p)	If nose clip slips off while working the problem. If team member replaces clip without breathing outside air, do not discount, otherwise discount, each infraction	2_____
(q)	Working all or part of problem without nose clip in place, each team member	8_____

	Discount
(r) Failure to find fire, gas, smoke, barricades, stoppings, bodies, falls, doors and other conditions when actually in the mine or when indicated by signs or otherwise, each omission	3_____
(s) Failure to test all stations for poisonous, irrespirable or flammable gases, each infraction	3_____
(t) Failure of team to cover light or to indicate turning off cap lamp while testing for gas with flame safety lamp, each team member, each infraction	4_____
(u) Failure of team to cover light or to indicate turning off cap lamp while testing for gas with flame safety lamp, each team member, each infraction	1_____
(v) Failure to return to known fresh air when relighting flame safety lamp, each infraction	2_____
(w) Excessive talking, each team member	2_____
(x) Failure to find live men, each ommission	20_____
(y) Failure to properly protect live man or men, each omission	8_____
(z) Failure to clear apparatus before placing it on patient, each omission	2_____
(aa) Failure to test stretcher before loading patient on it, each omission	2_____
(bb) Rough or awkward handling of patient, each infraction	2_____
(cc) Failure to tie patient's arms, tie patient to stretcher or cover patient with blanket, each omission	2_____
(dd) Improper placing of patient on stretcher, each infraction	2_____
(ee) Transporting patient in unexplored territory, each infraction	4_____
(ff) Failure to erect temporary barricade when necessary, each infraction.	6_____
(gg) Failure to erect temporary barricade, seal, or stopping reasonably airtight, each infraction	2_____
(hh) Failure of team to explore or examine workings systematically and thoroughly, each ommission	4_____
(ii) Failure of one or more team members to leave fresh-air base, each team member	12_____
(jj) Failure to complete problem in the time specified, each minute or fraction of a minute	1_____
TOTAL DISCOUNTS	_____

_____ Judge _____ Judge _____ Judge

Team No. _____

D. After Working Problem and Leaving Mine

Note: Teams shall not shut off oxygen until judges examine apparatus.

		Discount
(a)	Oxygen supply of team member less than 30 atmospheres, each member ..	6_____
(b)	Failure to remain in smokeroom the entire specified period, each man.	6_____
(c)	Insufficient or too great rate of oxygen feed, as evidenced by flat or highly inflated breathing bag, each apparatus	1_____
(d)	Failure to turn over to judges marked map within 5 minutes after starting consultation. For each minute or fraction thereof, overtime	1_____
(e)	Failure to locate and record on map with reasonable accuracy conditions as found or indicated in the mine, each omission	2_____
	TOTAL DISCOUNT	_____

_____ Judge _____ Judge _____ Judge

APPENDIX D: RULES GOVERNING FIRST-AID CONTEST

RULES GOVERNING NATIONAL FIRST-AID CONTEST, 1953

1. A team will be composed of six persons, including a captain and patient. An additional person may be carried as a team member to act as an alternate or substitute.

2. No person who has trained or assisted in training a team shall serve as a substitute or team member.

3. If substitutes are on a team, they shall be placed in the stands or other place indicated by the chief judge.

4. Full team events only will be used.

5. Each team will perform 10 or more problems. This, of course, does not prevent running off ties between the individual teams concerned, but the points made in problems performed to decide a tie shall not be included in the total points for the whole contest.

6. The Bureau of Mines "Manual of First-Aid Instruction" (1940 edition) is hereby authorized for sole reference and guidance in contest work at this meet.

7. The teams will be numbered consecutively beginning with No. 1, and they must occupy the position assigned them on the field.

8. The use of banners, lettering, or emblems on garments, or marked first-aid boxes and equipment, or use of means of identification of teams other than by numbers officially assigned will not be permitted on the field.

9. Team members will not be permitted to mark patient to indicate the location of injuries.

10. No practicing will be allowed on the field before the beginning of the contest.

11. All problems will be worked in marked-off spaces which shall contain only the judges and the contesting teams.

12. All teams not performing a problem will be placed in a location where they are unable to obtain information regarding problem being worked.

13. No persons, excepting designated officials, will be allowed to communicate with teams waiting to perform problems or while working problems. Teams which have performed will not be permitted to communicate with teams waiting their turn.

14. Accompanying officials, substitutes, or friends of a team shall remain away from the team and make no effort to communicate with it during or between problems.

15. All teams and judges will be furnished copies of the contest rules sufficiently in advance of the contest so that they will have time to become familiar with them.

16. The patient shall take his position before the beginning of each problem by lying on his back, head toward team and arms extended alongside of body.

17. The cpatain, or other team member, may change the position of the patient as required by the problem, during the three minutes reading period.

18. In problems involving artificial respiration, 12 complete strokes of the Holger-Nielsen (back-pressure arm-lift) method and 15 complete strokes for the Schafer and Silvester methods of artificial respiration will be given per minute.

19. Teams shall not be discounted because of any special way of changing operators in artificial respiration so long as the rhythm is not broken.

20. The wearing or using of a watch during artificial respiration by team members is prohibited.

21. If conditions make it impracticable for the operator to straddle both thighs, he may assume the position where one thigh is straddled.

22. Support of fractures or dislocations and control of bleeding cannot be done at the same time; one person must support the limb, and another person should control the bleeding.

23. If problem reads, "prepare for transportation," patient must be loaded on stretchers unless otherwise stated in problem. If problem reads, "treat patient," stretcher does not have to be taken to the patient.

Dress

(a) Teams performing will wear overalls and jumpers or similar form of dress, such as a two-piece uniform. Jumpers or coats may be removed provided shirts are worn with full-length sleeves.

(b) The patient shall be dressed like other team members and when taking his position before each problem, he shall have the neckband of his shirt and waistband of his trousers buttoned and his belt in place. Shoes must be worn, except in injuries to the foot.

(c) The use of bathing suits is prohibited.

(d) The use of rubber bands or similar devices on the patient's arms and legs shall be prohibited.

(e) Bandages must be applied over the regular uniform worn by the patient.

Material

(a) Teams must bring their own first-aid material, including bandages, splints, blankets, etc.

(b) Only first-aid material as outlined in the Bureau of Mines Manual of First-Aid Instruction shall be used in this contest, with the exception that no roller bandages shall be used. Unsterile compresses can be used.

(c) Splints or boards shall be of proper size, shall not be previously marked, and shall have no cleats thereon.

(d) Horses, or large wooden blocks shall not be used for tying splints together, but can be used for elevation of stretchers, etc.

(e) Splints shall not be padded or wrapped prior to the beginning of any problem requiring their use.

(f) Splints, boards, and stretchers must be tested separately.

(g) No prepared padding will be permitted; however, triangular bandages or any suitable material that is found in or around mines, mills, quarries, petroleum plants, etc., may be used for padding, provided that this material is cut or torn and folded during the working of the problem.

(h) All materials except blankets, stretchers, and splints must be kept in boxes or kits until after the gong or whistle has been sounded to begin working of the problem.

(i) A team or team member will be penalized for leaving the patient to obtain material during working of problem.

Timing

(a) Problems will be kept in sealed envelopes, retained by the judges, and given to team captains (unopened) immediately after the sounding of the first gong.

(b) Three minutes will be allowed for reading problem and assembling first-aid material. This will be indicated by the sounding of a gong.

(c) At the sounding of the first gong, the patient will take his place on the mat.

(d) Unless otherwise specified in the problem, the patient will lie on his back with his head toward the team.

(e) A second gong will be sounded to indicate the time of starting the problem.

(f) A third gong will sound when the time for working the problem is up.

(g) Time consumed in excess of that allowed for the problem will be indicated by a gong at one-minute intervals until all teams have completed the problem.

(h) In any given problem, time will not be taken into consideration, unless the team performing exceeds the allotted time or fails to give treatment promptly.

(i) At the conclusion of any problem, the captain must raise his right hand and announce his team number. The team will remain at its post until relieved by the judges.

(j) Teams will be allowed a definite period for removing bandages between problems or leaving the field - approximately 5 minutes.

Judging

(a) Each team as it performs a problem will be rated by a judge or judges. If two or more judges are used, one will act as chairman and mark the score card.

(b) The judges will be members of the United States Bureau of Mines or an experienced first-aid judge or instructor, skilled in first-aid training and conversant with Bureau of Mines first-aid standards.

(c) Judges will work under a committee of chief judges, one of whom shall act as chairman.

(d) Judges will perform their work progressively. If two or more judges are judging the same team they may confer with each other when desirable.

(e) Judges will receive a score card and a copy of the problem, together with an outline of the correct method of working the problem according to the Bureau of Mines Manual of First-Aid Instruction.

(f) Judges should not ask questions or interfere in any way with a team while it is working the problem.

(g) Judges will be required to examine carefully the word done in each problem.

(h) Judges shall not inform a team as to the discounts inflicted, discuss discounts with a team within hearing of a team, or within hearing of officials or spectators.

(i) Judges should exercise care in marking the discount sheet so that the teams or spectators cannot see or get an idea of the discounts charged.

(j) Judges should mark plainly the team number, problem number, and discounts on the score card and sign the card in the space provided for that purpose. Do not use check marks for discounts. For example, if a team incurred a 1-point discount twice, the score card should be marked $1 + 1 = 2$; if a 2-point discount three times, $2 + 2 + 2 = 6$, etc.

(k) When the judges have completed the rating of each team, the score cards will be collected by a person or persons designated for this purpose.

(1) Judges should mark on the back of the discount sheet what the teams were discounted for.

Score-Card Examiners

(a) At least two (2) persons, who are not connected with or interested in any team and who are well versed in first-aid work, should be appointed to examine the score cards before they are turned over to the recorders.

(b) The score-card examiners shall carefully "check" the score cards to see that there are no improper discounts on the score cards, that the cards are properly signed, and that the totals are correct.

(c) Any score card or cards which are found improperly or not clearly marked shall be returned by messenger to the judge or judges responsible. Any erasures or corrections made by a judge shall be initialed by him.

(d) After the score-card examiners have completed their work, the score cards shall be turned over to the recorders.

(e) The score-card examiners shall keep the scores confidential at all times during the contest.

Recording

(a) The recorders will tabulate the scores from the score cards according to the numbers occupied by the teams on the field and not by names of teams.

(b) Scores shall be kept confidential by recorders and no scores shall be given to anyone before the conclusion and tabulation of the last problem, when they may be given to the chief judge who, in turn, will give the results of the contest to the proper authorized officials.

Ties

(a) Announcement of ties will be made and decided as soon as possible after the completion of the regular problem.

(b) All teams shall leave their material in place and remain on the field until scores are tabulated and announcement made regarding ties.

(c) Ties will be decided by one or more problems. Only one score card will be used regardless of how many judges are used for judging the event.

(d) Infraction of the above rules, if such infractions are not covered in the table of discounts, may result in the disqualification of the team or teams involved.

Miscellaneous

(a) Broken neck: Support neck until 5th bandage is tied. If other injuries, where slings are required, tie arms together of an unconscious patient for transportation. See page 168, Fig. 66.

(b) Crushed hand: If open wound is specified tourniquet loosely arm-pressure point.

(c) Compound fracture of foot: Either way in dressing of the foot will be correct.

(d) Stretchers: Army-type stretchers.

(e) Shock: Blanket must be used for shock treatments. Blanket must be placed on the patient after the completion of dressings.

(f) Dislocated jaw, fractured jaw, broken neck or back: Stimulants must be given by inhalation.

(g) Use of stimulants: Must be given at least twice during working of problems. Either raise or turn head when giving stimulants.

(h) Compound fractures of the extremities: Shall not be arched unless the bone protrudes toward the splint.

(i) Compound fracture of the kneecap: Start tying the bandages from the top of splint and come down.

(j) A tourniquet shall not be loosened unless the working time of the problem exceeds ten (10) minutes, then the tourniquet shall be loosened at the end of ten minutes. (This does not mean that during the working of a problem the tourniquet shall be kept so tight as to cut off the circulation.)

(k) Arching of a tourniquet is not required, but in no case shall a bandage or other first-aid dressing be applied so as to foul the tourniquet.

(l) Fracture of the upper extremities should be tied the same as dislocations - by starting the bandage on the arm, crossing under the splint and tying on arm.

Figure 7. - Team reading problem.

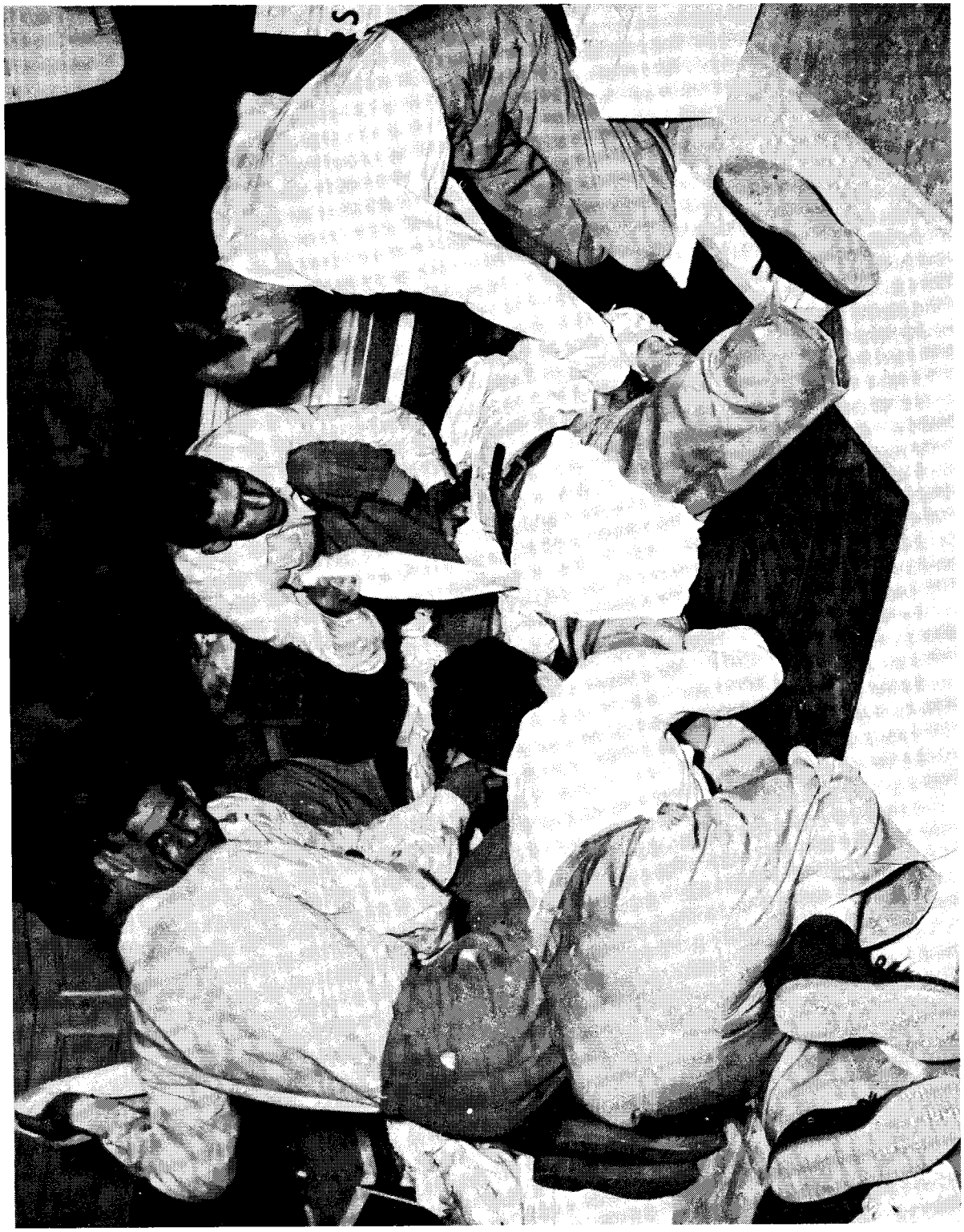

Figure 8. - Treating for burns lower part of abdomen.

Figure 9. - Administering artificial respiration.

Figure 10. - Standing at attention after completing a problem.

APPENDIX E: FIRST AID PROBLEMS WORKED IN CONTEST

(See figs. 2 to 10 inclusive.)

Problem 1

Three minutes will be allowed for reading problem and assembling material.

A shuttle-car operator dislodged some timber, and when found he had the following injuries: Fracture of five ribs on right side; blood spurting from a 2-inch wound on the outside left arm 2 inches above bend of elbow; a backward dislocation of the right hip; bone is protruding from a wound on the bottom of the left foot; blood is oozing from a wound on the right side of face; slight bleeding from a 2-inch wound on the chest midway between the shoulders. Patient is unconscious but suffering from shock. Treat, and prepare for transportation.

Working time - 8 minutes.

List of injuries:

1. Arterial bleeding, wound on left arm.
2. Physical shock
3. Wound on left arm.
4. Wound on bottom of left foot (compound fracture).
5. Wound on right side of face.
6. Wound on chest between shoulders.
7. Fracture of left foot (compound fracture)
8. Fracture of ribs right side.
9. Dislocation of right hip.
10. Prepare for transportation.

Outline for Working Problem

1. Arterial bleeding from wound on left arm.
   (a) Apply digital pressure at arm pressure point.
   (b) Apply tourniquet at arm pressure point.

2. Physical shock.
   (a) Head level with body. When patient is placed on splint, foot end of splint should be elevated.
   (b) Remove all foreign bodies from mouth. See that tongue is forward.
   (c) Loosen tight clothing from waist and neck.
   (d) Cover patient with blanket after completion of dressings.
   (e) Apply tested heated objects.
   (f) Give tested stimulants by inhalation.
   (g) Rub uninjured extremities toward body.

3. Wound on left arm.
   (a) Apply bandages as for wound of arm. (See p. 113 and fig. 34.)

4. Wound on left foot (compound fracture).
   (a) Apply tourniquet loosely at thigh pressure point.
   (b) Apply bandages as for wound of foot. (See p. 133 and fig. 51.)

5. Wound on right side of face.
   (a) Apply bandages as for wound of face. (See p. 104 and fig. 26c.)

Problem 1 (Con.)

6. Wound on chest between shoulders.
   (a) Apply bandages as for wound of chest between shoulders. (See p. 120 and fig. 42.)

7. Compound fracture of left foot.
   (a) Support fracture of foot.
   (b) Apply well-padded splint and bandages as for fracture of foot. (See p. 195 and fig. 79.)

8. Fracture of ribs on right side.
   (a) Apply bandages as for fracture of ribs. (See p. 181 and fig. 72.)

9. Dislocation of right hip.
   (a) Apply tested splint and bandages for dislocation of hip. (See p. 165 and fig. 65.)

10. Prepare patient for transportation.
   (a) Open stretcher.
   (b) Test stretcher.
   (c) Three men lift on least injured side and then load patient on stretcher.
   (d) Raise foot end of stretcher. (See pp. 231-266.)

Problem 2

Three minutes will be allowed for reading problem and assembling material.

A miner comes in contact with a live electric wire which is down. He is found unconscious; not breathing; lying on his back; with his left foot, leg and thich on the wire. He has burns 3 inches wide extending from his heel to the center of the back of left thigh and a compound fracture of the skull with a 2-inch wound in the center of the forehead. Demonstrate two methods of "shorting" or "cutting off" electric current before removing patient from wire, then resuscitate by all team members (except patient) performing artificial respiration for 1 minute each, change of operators to be made without breaking rhythm. Patient regains consciousness at end of artificial respiration, but suffers from shock throughout problem. Treat, and prepare for transportation.

Working time - 7 minutes

List of injuries:

1. Artificial respiration.
2. Physical shock.
3. Wound on forehead.
4. Burns on thigh.
5. Burns on leg.
6. Burns on foot.
7. Prepare for transportation.

Outline for Working Problem

1. Artificial respiration.
   - (a) Remove patient from live wire.
   - (b) Remove all foreign bodies from mouth.
   - (c) See that tongue is forward.
   - (d) Loosen tight clothing from neck, chest and waist.
   - (e) Cover patient with blanket.
   - (f) Apply tested heated objects.
   - (g) All team members (except patient) perform artificial respiration for 1 minute.
   - (h) Change operators without breaking rhythm.

2. Physical shock (after patient has been revived).
   - (a) Keep head level (fractured skull).
   - (b) Do not give stimulant.
   - (c) See that tongue is forward.
   - (d) Cover patient with blanket after dressings are applied.
   - (e) Reapply tested heated objects.
   - (f) Rub uninjured extremities toward body.

3. Wound on forehead (compound fracture).
   - (a) Apply bandages as for wound of forehead. (See p. 104 and fig. 27.)
   - (b) Do not tie knot of compress or cravat over wound.

4. Burns on thigh (left).
   - (a) Remove all loose clothing from burns.
   - (b) Apply moistened picric-acid gauze to burn of left thigh.

Problem 2 (Con.)

5. Burn on leg (left).
   (a) Remove all loose clothing from burn.
   (b) Apply moistened picric-acid gauze to burn of leg.

6. Burn of foot (left heel).
   (a) Remove all loose clothing from burn.
   (b) Apply moistened picric-acid gauze to burn of heel.
   (c) Apply outside dressing as for extensive wounds of foot. (See p. 146 and fig. 52.)

7. Prepare patient for transportation.
   (a) Open stretcher.
   (b) Test stretcher.
   (c) Three men lift on least injured side and then load patient on stretcher.
   (d) Stretcher should be kept level.

Problem 3

Three minutes will be allowed for reading problem and assembling material.

A brakeman is caught and squeezed between a mine car and rib and has the following injuries: He complains of great pain through the pelvis. Dislocation of left elbow with arm held in straight position. Blood is oozing from a 1/2-inch wound on the right eyelid. The right hand is crushed, with the skin scraped off the back of the hand and fingers, from the wrist to the end of the fingers. Blood is spurting from a wound of the right thigh midway between the crotch and knee. Patient is conscious and suffering from physical shock. Treat, and prepare for transportation.

Working time - 8 minutes.

List of injuries:

1. Arterial bleeding, wound on right thigh.
2. Physical shock.
3. Wound on right thigh.
4. Wound on right eyelid.
5. Crushed right hand.
6. Dislocation of left elbow.
7. Fracture of pelvis.
8. Prepare for transportation.

Outline for Working Problem

1. Arterial bleeding, right thigh.
   (a) Apply digital pressure on thigh pressure point.
   (b) Apply tourniquet at thigh pressure point.

2. Physical shock.
   (a) Keep head on level with body. When patient is placed on splint, foot end of splint should be elevated.
   (b) Remove foreign objects from mouth and see that tongue is forward.
   (c) Loosen tight clothing from waist and neck.
   (d) Cover patient with blanket after completion of dressings.
   (e) Apply tested heated objects.
   (f) Give tested stimulant by mouth.
   (g) Rub uninjured extremities toward body.

3. Wound on right thigh.
   (a) Apply bandages as for wound of thigh. (See p. 128 and fig. 48.)

4. Wound on right eyelid.
   (a) Apply dressing as for wound of eye. (See p. 104 and fig. 28.)

5. Crushed right hand.
   (a) Support crushed right hand.
   (b) Apply sterile gauze to open wound of hand.
   (c) Apply splint as for crushed hand. (See p. 179 and fig. 71.)
   (d) Apply tourniquet loosely to arm pressure point.

Problem 3 (Con.)

6. Dislocation of left elbow (arm in straight position).
   (a) Apply splint for dislocation of elbow. (See p. 160 and fig. 63.)

7. Fracture of pelvis.
   (a) Support pelvis until wide bandages are applied.
   (b) Test splint.
   (c) Apply splint (pelvis board or broken-back splint). (See p. 190.)

8. Prepare patient for transportation.
   (a) Open stretcher.
   (b) Test stretcher.
   (c) Three men lift on least injured side and then load patient on stretcher.
   (d) Raise foot end of stretcher. (See pp. 231-266.)

Problem 4

Three minutes will be allowed for reading of problem and assembling material.

A man has fallen from a railroad car and is found lying face down with a broken back, a 6-inch wound running from a point 3 inches above the right eye toward the back of the head and a 6-inch abrasion on the back of the calf of right leg. Treat.

Working time - 8 minutes.

List of injuries:

1. Physical shock.
2. Extensive wound on head.
3. Extensive wound on right leg.
4. Fractured back (patient lying face down).

Outline for Working Problem

1. Physical shock.
   (a) Head level with body.
   (b) Remove all foreign bodies from mouth. See that tongue is forward.
   (c) Loosen tight clothing from waist and neck.
   (d) Cover patient with blanket after completion of dressing.
   (e) Apply tested heated objects.
   (f) Give stimulant by inhalation.
   (g) Rub uninjured extremities toward the body.

2. Extensive wound of head.
   (a) Apply dressing as for extensive wound of head. (See p. 102 and fig. 25, A and B.)

3. Abrasion on right leg.
   (a) Apply dressing for wound of leg. (See p. 99 and fig. 50.)

4. Fractured back (patient lying face down).
   (a) Test broken-back splint.
   (b) Lift patient on broken-back splint (face down).
   (c) Apply broken-back splint and bandages. (See p. 188 and fig. 74.)

Problem 5

Three minutes will be allowed for reading problem and assembling material.

A trackman is hit by a trip of cars and is found with the following injuries: Dislocation of left shoulder. Blood is spurting from a point where the bone of the right thigh is protruding on the inside, midway between the crotch and knee. Blood is oozing from a 1/2-inch wound on the right eyelid. Patient is suffering from physical shock but is conscious during the entire problem. Treat, and prepare for transportation.

Working time - 8 minutes.

List of injuries:

1. Arterial bleeding, wound on right thigh (compound fracture).
2. Physical Shock.
3. Wound on right thigh (compound fracture).
4. Wound on right eyelid.
5. Compound fracture of right thigh.
6. Dislocation of left shoulder.
7. Preparation for transportation.

Outline for Working Problem

1. Arterial bleeding on right thigh.
   (a) Apply digital pressure on thigh pressure point.
   (b) Apply tourniquet at thigh pressure point.

2. Physical shock.
   (a) Head level with body.
   (b) Remove all foreign bodies from mouth. See that tongue is forward.
   (c) Loosen tight clothing from waist and neck.
   (d) Cover patient with blanket after completion of dressings.
   (e) Apply tested heated objects.
   (f) Give stimulant by mouth.
   (g) Rub uninjured extremities toward body.

3. Wound on thigh (right).
   (a) Apply dressing as for wound of thigh. (See p. 128 and fig. 48.)
   (b) Do not tie knot of compress or cravat bandages over wound.

4. Wound on right eyelid.
   (a) Apply dressing as for wound of eye. (See p. 104 and fig. 28.)

5. Compound fracture of right thigh.
   (a) Support fracture of thigh.
   (b) Apply splint for fracture of thigh. (See p. 193 and fig. 76.)

6. Dislocation of left shoulder.
   (a) Apply dressing for dislocation of shoulder. (See p. 158 and fig. 62, A and B.)

7. Prepare patient for transportation.
   (a) Open stretcher.
   (b) Test stretcher.
   (c) Three men lift on least injured side and load patient on stretcher.
   (d) Raise foot end of stretcher. (See pp. 231-266.)

Problem 6

Three minutes will be allowed for reading problem and assembling material.

A miner is caught by a fall of roof coal and receives the following injuries: Dislocation of right knee; dislocation of left wrist; slight bleeding from a 2-inch wound in the crotch; slight bleeding from a 3-inch wound on the right side of chest, and a fracture of right hand. Patient is unconscious and suffering from physical shock. Treat, and prepare for transportation.

Working time - 8 minutes.

List of injuries:

1. Physical shock.
2. Wound in crotch.
3. Wound on chest (right side).
4. Dislocation of knee (right).
5. Dislocation of wrist (left).
6. Fracture of right hand.
7. Prepare for transportation.

Outline for Working Problem

1. Physical shock.
   - (a) Head level with body.
   - (b) Remove all foreign bodies from mouth. See that tongue is forward.
   - (c) Loosen tight clothing from waist and neck.
   - (d) Cover patient with blanket after completion of dressings.
   - (e) Apply tested heated objects.
   - (f) Give tested stimulants by inhalation.
   - (g) Rub uninjured extremities toward body.
2. Wound in crotch.
   - (a) Apply dressing as for wound in crotch. (See p. 125 and fig. 46, A and B.)
3. Wound on right side of chest.
   - (a) Apply dressing as for wound on side of chest. (See p. 123 and fig. 43, A.)
4. Dislocation of right knee.
   - (a) Apply splint as for dislocation of knee. (See p. 167 and fig. 76, p. 192.)
5. Dislocation of left wrist.
   - (a) Apply dressing as for dislocated wrist. (See p. 162 and fig. 12, A, p. 47.)
6. Fracture of right hand.
   - (a) Support fracture of hand.
   - (b) Apply splint as for fracture of hand. (See p. 179 and fig. 71.)
7. Prepare patient for transportation.
   - (a) Open stretcher.
   - (b) Test stretcher.
   - (c) Three men lift from least injured side and then load patient on stretcher.
   - (d) Raise foot end of stretcher. (See pp. 231-266.)

Problem 7

Three minutes will be allowed for reading problem and assembling material.

A scraper had fallen on a cutter bar of an operating mining machine and has been rolled against the face by the cutter chain and bits, and when the man had been removed from the cutter bar, was found to have the following injuries: Compound fracture of the left leg; blood spurting from a wound 2 inches long on the outside of leg with bone protruding. Compound fracture of the right forearm (bone protruding from a 3-inch wound on the inside of the forearm) with arterial bleeding. Slight bleeding from a 3-inch wound on the center of the back between the shoulders, and a wound on the palm of the left hand. Patient is unconscious and suffering from physical shock. Treat, and prepare for transportation.

Working time - 9 minutes.

List of injuries:

1. Arterial bleeding from the right forearm (compound fracture).
2. Arterial bleeding from the left leg (compound fracture).
3. Physical shock.
4. Wound on right forearm (compound fracture).
5. Wound on left leg (compound fracture).
6. Wound on back between shoulders.
7. Wound on palm of left hand.
8. Fracture of right forearm (compound).
9. Fracture of left leg (compound).
10. Prepare for transportation.

Outline for Working Problem

1. Arterial bleeding from right forearm (compound fracture).
   (a) Apply digital pressure at arm.
   (b) Apply tourniquet at armpit.

2. Arterial bleeding from left leg (compound fracture).
   (a) Apply digital pressure at knee or thigh pressure point.
   (b) Apply tourniquet at thigh pressure point.

3. Physical shock.
   (a) Head level with body.
   (b) Remove all foreign bodies from mouth. See that tongue is forward.
   (c) Loosen tight clothing from waist and neck.
   (d) Cover patient with blanket after completion of dressings.
   (e) Apply tested heated objects.
   (f) Give stimulant by inhalation.
   (g) Rub uninjured extremities toward body.

4. Wound on right forearm (compound fracture).
   (a) Apply bandages as for wound on forearm. (See p. 114 and fig. 36.)
   (b) Do not tie knot of compress or cravat bandage over wound.

5. Wound on left leg (compound fracture).
   (a) Apply bandages as for wound on leg. (See p. 130 and fig. 50.)
   (b) Do not tie knot of compress or cravat bandage over wound.

Problem 7 (Con.)

6. Wound on back between shoulder.
   (a) Apply bandages as for wound of back between shoulders. (See p. 120 and fig. 41.)

7. Wound on palm of left hand.
   (a) Apply bandages as for wound on palm of hand. (See p. 116 and fig. 37.)

8. Compound fracture of right forearm.
   (a) Support fracture of forearm.
   (b) Apply splint for fracture of forearm. (See pp. 177 and 179 and fig. 70.)

9. Compound fracture of left leg.
   (a) Support fracture of leg.
   (b) Apply splint for fracture of leg. (See p. 195 and fig. 78.)

10. Prepare for transportation.
   (a) Open stretcher.
   (b) Test stretcher.
   (c) Three men lift on least injured side and then load patient on stretcher. (See pp. 231-266.)

Problem 8

Three minutes will be allowed for reading problem and assembling material.

A fall of rock has been removed from a miner, and he is found as follows: He is lying on his back and is unable to move his lower extremities; a dislocated lower jaw and a 2-inch wound across the palm of right hand spurting bright red blood. Patient is unconscious and suffering from physical shock. Treat.

Working time - 9 minutes.

List of injuries:

1. Arterial bleeding from palm of right hand.
2. Physical shock.
3. Wound on palm of right hand.
4. Dislocated lower jaw.
5. Broken back lying on his back.

Outline for Working Problem

1. Arterial bleeding from wound of right hand.
   (a) Apply digital pressure at elbow or arm.
   (b) Apply tourniquet to arm pressure point.

2. Physical shock.
   (a) Head should be level with body. When patient is placed on splint, foot end of splint should be elevated.
   (b) Remove all foreign bodies from mouth. See that tongue is forward.
   (c) Loosen tight clothing from waist and neck.
   (d) Cover patient with blanket after completion of dressings.
   (e) Apply tested heated objects.
   (f) Give stimulants by inhalation.
   (g) Rub uninjured extremities toward body.

3. Wound on palm of right hand.
   (a) Apply bandages as for wound of palm of hand. (See p. 116 and fig. 37.)

4. Dislocated lower jaw.
   (a) Reduce dislocation.
   (b) Place wedge between teeth.
   (c) Apply bandages as for dislocated jaw. (See pp. 157 and 158 and fig. 61.)

5. Fractured back.
   (a) Test broken-back splint.
   (b) Lift patient on splint (place splint without turning patient).
   (c) Apply broken-back splint and bandages. (See p. 188 and fig. 74.)

Problem 9

Three minutes will be allowed for reading the problem and assembling material.

A wireman on the surface came in contact with a live electric wire which is down. He is unconscious; not breathing; lying on back, with the lower part of his back on the wire. He has burns 2 inches wide across the lower part of back; and a compound fracture of the left leg with no bleeding. Demonstrate two methods of "shorting" or "cutting off" electric current before removing from wire, then resuscitate by all team members (except patient) performing artificial respiration for two minutes each, change of operators to be made without breaking rhythm. Patient regains consciousness at end of artificial respiration but suffers from shock throughout problem. Treat, and prepare for transportation.

Working time - 12 minutes.

List of injuries:

1. Artificial respiration.
2. Physical shock.
3. Wound on left leg (compound fracture).
4. Burns on lower part of back.
5. Fracture of left leg (compound).
6. Prepare for transportation.

Outline for Working Problem

1. Artificial respiration.
   - (a) Remove patient from wire.
   - (b) Remove all foreign bodies from mouth.
   - (c) See that tongue is forward.
   - (d) Loosen tight clothing from neck, waist and chest.
   - (e) Cover patient with blanket.
   - (f) Administer tested stimulant by inhalation.
   - (g) Apply tested heated objects.
   - (h) All team members (except patient) perform artificial respiration for 2 minutes each (12 strokes per minute).
   - (i) Change of operator without breaking rhythm.

2. Physical shock (after patient has been revived).
   - (a) Keep head level with body.
   - (b) See that tongue is forward.
   - (c) Give tested stimulant by mouth.
   - (d) Cover patient with blanket after completion of dressing.
   - (e) Reapply tested heated objects.
   - (f) Rub uninjured extremities toward body.
   - (g) Give tested stimulant by inhalation during respiration and after patient has been revived, a tested stimulant should be given by mouth.
   - (h) Rub uninjured extremities toward body.

3. Wound on left leg.
   - (a) Apply bandages as for wound of leg. (See p. 130 and fig. 30.)

Problem 9 (Con.)

4. Burns on lower part of back.
   (a) Remove all loose clothing from burns.
   (b) Apply moistened picric-acid gauze to burn of lower part of back.
   (c) Apply burn dressing to lower part of back. (See pp. 126-144 and fig. 44.)

5. Compound fracture of left leg.
   (a) Apply tourniquet loosely on thigh pressure point.
   (b) Support fracture of left leg.
   (c) Apply padded splint for fracture of left leg. (See p. 195 and fig. 78.)

6. Prepare for transportation.
   (a) Open stretcher.
   (b) Test stretcher.
   (c) Three men lift on least injured side and then load on stretcher. (See pp. 231-266.)

Problem 10

Three minutes will be allowed to read problem and assemble material.

A miner is caught by a fall of slate and receives the following injuries: Dislocation of the right wrist. Slight bleeding from a 3-inch wound in the crotch. Blood oozing from a 2-inch wound on the left side of neck, and a 2-inch wound on the right knee, dislocation of left knee, and a compound fracture of the left forearm spurting blood. Treat, and prepare for transportation. Patient is suffering from physical shock but is conscious during the entire problem.

Working time - 8 minutes.

List of injuries:

1. Arterial bleeding from wound on left forearm.
2. Physical shock.
3. Wound on left forearm.
4. Wound in crotch.
5. Wound on left side of neck.
6. Wound on right knee.
7. Fracture of left forearm (compound fracture).
8. Dislocation of left knee.
9. Dislocation of right wrist.
10. Prepare for transportation.

Outline for Working Problem

1. Arterial bleeding, wound on left forearm.
   (a) Apply digital pressure at elbow or arm pressure point.
   (b) Apply tourniquet at armpit pressure point.

2. Physical shock.
   (a) Head level with body.
   (b) Remove all foreign bodies from mouth. See that tongue is forward.
   (c) Loosen tight clothing from waist and neck.
   (d) Cover patient with blanket after completion of dressings.
   (e) Apply tested heated objects.
   (f) Give tested stimulant by mouth.
   (g) Rub extremities toward body.

3. Wound on left forearm (compound fracture).
   (a) Apply bandages as for wound of forearm. (See p. 114 and fig. 36

4. Wound in crotch.
   (a) Apply bandages as for wound of crotch. (See p. 125 and fig.

5. Wound on left side of neck.
   (a) Apply bandages as for wound of neck. (See p. 109 and fig.

6. Wound on right knee.
   (a) Apply bandages for wound of knee. (See p. 130 and fig. 4

Problem 10 (Con.)

7. Fracture of left forearm (compound fracture).
   (a) Support fracture of left forearm.
   (b) Apply padded splint for fracture of forearm.
   (c) Apply bandages as for fracture of forearm. (See p. 177 and fig. 70.)

8. Dislocation of left knee.
   (a) Apply padded splint and bandages as for fracture of thigh. (See pp. 167 and 192, fig. 76.)

9. Dislocation of right wrist.
   (a) Apply dressing for dislocated wrist. (See p. 162 and fig. 12A, p. 47.)

10. Prepare for transportation.
   (a) Open stretcher.
   (b) Test stretcher.
   (c) Load patient on stretcher. (Three men lift on the least injured side.)
   (d) Raise foot end of stretcher. (See pp. 231-266.)

Problem 11

Three minutes will be allowed for reading problem and assembling material.

A miner who has been removed from under a fall of rock is found to have the following injuries: Fracture of the neck; fractured ribs on left side, and a 3-inch wound on the point of right hip. The patient is unconscious and suffering from physical shock. Treat.

Working time - 8 minutes.

List of injuries:

1. Physical shock.
2. Wound on point of right hip.
3. Fractured ribs (left side).
4. Fracture of neck.

Outline for Working Problem

1. Physical shock.
   (a) Keep head on level with body. When patient is placed on splint, foot end of splint should be elevated.
   (b) Remove all foreign bodies from mouth. See that tongue is forward.
   (c) Loosen tight clothing from waist and neck.
   (d) Cover patient with blanket after completion of dressings.
   (e) Apply tested heated objects.
   (f) Give tested stimulant by inhalation.
   (g) Rub uninjured extremities toward body.

2. Wound on point of right hip.
   (a) Apply dressing as for wound of hip. (See p. 125 and fig. 47.)

3. Fracture of ribs (left side).
   (a) Apply bandages as for fracture of rib. (See p. 181 and fig. 72.)

4. Fracture of neck.
   (a) Support fractured neck until the fifth bandage of dressing is tied.
   (b) Place patient on tested broken-back splint.
   (c) Tie as for broken neck. (See p. 185 and fig. 73.)

Problem 12

Three minutes will be allowed for reading problem and assembling material.

A trackman was caught and squeezed between a mine car and rib and when found he was lying face downward. He complains of severe pain through the pelvis region. Blood is oozing from a 2-inch wound on the chin, a 3-inch wound on the right shoulder and a 2-inch wound on back of left hand. The patient is conscious, but suffers from shock throughout the problem. Treat, and prepare for transportation.

Working time - 8 minutes.

List of injuries:

1. Physical shock.
2. Wound on right shoulder.
3. Wound on left hand.
4. Wound on chin.
5. Fractured pelvis (lying face down).
6. Prepare for transportation.

Outline for Working Problem

1. Physical shock.
   (a) Head level with body. When patient is placed on splint or board, foot end of splint or board should be elevated.
   (b) Remove all foreign bodies from mouth. See that tongue is forward.
   (c) Loosen tight clothing from waist and neck.
   (d) Cover patient with blanket after completion of dressings.
   (e) Apply tested heated objects.
   (f) Give tested stimulants by inhalation.
   (g) Rub uninjured extremities toward body.

2. Wound on right shoulder.
   (a) Apply bandages as for wound of shoulder. (See p. 109 and fig. 32.)

3. Wound on back of left hand.
   (a) Apply bandages as for wound of back of hand. (See p. 116 and fig. 38.)

4. Wound on chin.
   (a) Apply compress bandage. (See p. 108 and fig. 30.)

5. Fracture of pelvis (lying face down).
   (a) Apply splint or board to body.
   (b) Apply bandages as for fracture of pelvis. (See p. 190 and fig. 75.)

6. Prepare patient for transportation.
   (a) Open stretcher.
   (b) Test stretcher.
   (c) Lift patient on stretcher.
   (d) Raise foot end of stretcher. (See pp. 231-266.)

Problem 13

Three minutes will be allowed for reading problem and assembling material.

A motorman is knocked from the cab of his motor by a falling timber and receives the following injuries: Fracture of the neck, simple fracture of the right hand, and a wound of the left eyelid. Patient is unconscious and suffering from physical shock. Treat.

Working time - 9 minutes.

List of injuries:

1. Physical shock.
2. Wound on left eyelid.
3. Fracture of right hand.
4. Fracture of neck.

Outline for Working Problem

1. Physical shock.
   (a) Do not lower head (broken neck). Keep head on level with body. When patient is placed on splint, foot end of splint should be elevated.
   (b) Remove all foreign bodies from mouth. See that tongue is forward.
   (c) Loosen tight clothing from waist and neck.
   (d) Cover patient with blanket after completion of problem.
   (e) Apply tested heated objects.
   (f) Give tested stimulants by inhalation.
   (g) Rub uninjured extremities toward heart.

2. Wound on left eyelid.
   (a) Apply dressing as for wound of eye. (See p. 104 and fig. 28.)

3. Fracture of right hand.
   (a) Support fracture of hand.
   (b) Apply splint as for fracture of hand. (See p. 179 and fig. 71.)

4. Fracture of neck.
   (a) Support fractured neck until the fifth bandage is tied.
   (b) Place patient on tested broken-back splint.
   (c) Tie as for broken neck. (See p. 185 and fig. 73.)

APPENDIX F: JUDGES' DISCOUNT SHEET, FIRST-AID CONTEST

Problem No. _____ Team No. _____

National First-Aid Contest

Judges' Discount Sheet

Note: Teams shall not be discounted more than once for any 1 mistake in the same problem where such mistake may be discounted under more than 1 of the 15 sections of discounts.

Teams shall be additionally discounted for repetition of the same mistakes in the same problem; for example, 2 tight bandages, 4 points discount; 3 granny knots, 3 points discount, etc.

Teams shall not be discounted for doing more than the problem calls for unless it is detrimental to the patient.

1. General:	Discount
(a) Treating wrong condition (dislocation for fracture, sunstroke for heat exhaustion, etc.) (each)	6
(b) Treating wrong location of injury (wrong side of body, arm for forearm, thigh for leg, etc.) (each)	4
(c) Not treating injuries in their proper order (most severe one first, etc.) (each)	4
(d) Not taking sufficient material to complete problem (each trip back)	2
(e) Unclean first-aid material (compress, bandages, etc.) (each) ..	2
(f) Assistance lent by patient (physical or verbal) (each time) ...	2
(g) Rough, awkward, or unnecessary handling of patient (each infraction)	4
(h) Lack of attention by team members (each infraction)	2
(i) Slowness in work (each minute or fraction overtime)	1
(j) Use of rubber bands or similar devices on the patient's arms and legs is prohibited	2
2. Artificial Respiration:	
(a) Not giving artificial respiration (in required cases)	20
(b) Unnecessary delay in starting artificial respiration	8
(c) Not removing patient from dangerous gas, roof, wire, etc.	6
(d) Not insulating or protecting oneself when removing patient from electric wire or dangerous gas	6
(e) Not demonstrating method of cutting off current or removing water in drowning case (each infraction)	2
(f) Not placing patient in proper position (body, head, arm, etc.).	2
(g) Not loosening tight clothing (neck, chest and waistline) (each)	2
(h) Not removing foreign substances from mouth	2
(i) Not seeing that the tongue is in proper position	2
(j) Incorrect method (prone method instead of back-pressure arm lift, Silvester instead of prone, etc.) (each man)	4
(k) Incorrect position of operator causing insufficient respiration (each man)	4
(l) Improper position of operator's hands (too high, too low, or too far apart, etc.) (each man)	2

	Discount
(m) Swinging too far forward when applying pressure (each man)	2_____
(n) Bending elbows (back-pressure arm lift, prone method)(each man)	2_____
(o) Not removing hands between applications to relieve pressure (each man)	2_____
(p) Incorrect timing for each second or fraction thereof over or under 60 seconds in giving 12 complete strokes of the Holger-Nielsen method and 15 complete strokes for the Schafer and Silvester methods of artificial respiration (each infraction by each man)	1_____
No. 1 man	_____
No. 2 man	_____
No. 3 man	_____
No. 4 man	_____
No. 5 man	_____
(q) Breaking rhythm when changing operators (each man)	4_____
(r) Team member not giving artificial respiration when specified in problem (each man)	4_____
(s) Use of watch, other timing devices, or signals from others while giving artificial respiration (each man)	2_____
(t) Not placing pad under shoulder (Silvester method)	2_____

3. Control of Bleeding and Use of Tourniquets

(a) Not controlling arterial bleeding (in required cases)	20_____
(b) Not applying digital pressure to temporarily control arterial bleeding	6_____
(c) Unnecessary delay in applying digital pressure and/or tourniquet	4_____
(d) Ineffective digital pressure (off pressure point, etc.)	4_____
(e) Releasing digital pressure before tourniquet is applied	2_____
(f) Not applying tourniquet in required cases	12_____
(g) Application of tourniquet so as not to stop bleeding (block not fully under band, not in right position, stick not anchored, etc.)	6_____
(h) Not applying tourniquet loosely in compound fractures not having arterial bleeding (limbs only)	6_____
(i) Tourniquet applied at wrong pressure point	4_____
(j) Tourniquet applied to wrong limb (right for left or left for right)	4_____

	Discount
(k) Tourniquet applied so as to injure patient (pinching, not wrapping pad, etc.)	2_____
(l) Binding or covering tourniquet with dressing (each)	2_____
(m) Applying tourniquets so as to stop bleeding from wounds, simple fractures, and compound fractures not having arterial bleeding	4_____
(n) Not elevating head (severe bleeding of head only)	2_____
(o) Not loosening tourniquet at 10-minute intervals	4_____
4. Physical Shock and Use of Stimulants:	
(a) Not rendering any shock treatment in required cases	10_____
(b) Unnecessary delay in starting shock treatment (treating wounds, dislocations, fracture, etc., before shock treatment)	4_____
(c) Improper position of patient (head too high, etc.)	2_____
(d) Not removing foreign substance from mouth	2_____
(e) Not seeing that tongue is in proper position	2_____
(f) Not loosening tight clothing at neck, chest, and waistline (each infraction)	2_____
(g) Not covering or improper covering of patient	2_____
(h) Not giving stimulant in required cases	4_____
(i) Giving stimulant to patient having skull fracture, apoplexy, sunstroke, or internal bleeding	4_____
(j) Giving unconscious patient stimulant by mouth (each infraction)	4_____
(k) Giving stimulant by nose and not by mouth when patient is conscious (except patients with fractures of jaw, neck, or back and dislocated jaw) (each infraction)	2_____
(l) Giving stimulant before arterial bleeding is controlled	2_____
(m) Not testing stimulant before given by nose or mouth	2_____
(n) Not using or improper use of or not testing heat applications (each infraction)	2_____
(o) Not rubbing or improper rubbing of extremities	2_____
5. Wounds:	
(a) Not applying any dressing for a wound	10_____
(b) Not being aseptic (each infraction, even if same wound)	6_____

	Discount
(c) Not using sterile compress or sterile gauze	4
(d) Compress or gauze improperly applied (wound not entirely covered, wrong location, method, or position of knot, etc.) (each)	2
(e) Tight or loose compress (each)	2
(f) Insecure, incomplete, or granny knot (compress only) (each) ...	1
(g) Lack of neatness (compress only)	1
6. Burns or Scalds:	
(a) Not applying any dressing for a burn or scald	10
(b) Not being aseptic (each infraction, even if same burn or scald)	6
(c) Not entirely covering burn (picric-acid gauze, etc.)	4
(d) Not placing picric-acid gauze between fingers, toes, back of ears, etc. (each omission)	2
(e) Not moistening or not indicating that picric-acid gauze is moist	2
(f) Applying picric-acid gauze too tight (each piece)	2
(g) Not removing or indicating removal of clothing from burned or scalded area	2
7. Bruises, Strains, and Sprains:	
(a) Not rendering any treatment for a bruise, strain, or sprain (each infraction)	4
(b) Failure to apply cold applications or elevate bruises (when practical) (each infraction)	2
(c) Failure to apply hot applications and massage strain (each) ...	2
(d) Failure to bind and elevate sprain (when practical) (each infraction)	2
(e) Removing shoe and/or not loosening shoelace (each infraction)..	2
(f) Failure to apply cold applications then heat applications to sprains (each infraction)	2
8. Fractures:	
(a) Not treating fracture of skull, spine, neck, pelvis, or thigh (each)	14
(b) Not treating other than (a) (each)	10

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(c) Not elevating head of patient with a fracture of skull	4_____
(d) Not applying cold application to fracture of skull where there is no open wound	2_____
(e) Not straightening or improper straightening of fractured limb ...	2_____
(f) Not supporting or improper support of fracture	4_____
(g) Hands in wrong position, or attempting to control arterial bleeding while supporting fracture	4_____
(h) Failure to place pad under knot in required cases (each infraction)	1_____
(i) Improper lifting or lowering patient for applying splints (wrong side, etc.)	2_____
(j) Placing wedge between teeth in fracture of lower jaw	2_____
9. Dislocations:	
(a) Not reducing or treating dislocations of lower jaw, fingers, or toes (each)	6_____
(b) Not treating dislocations other than (a) (each)	8_____
(c) Not placing wedge between teeth (dislocated jaw)	2_____
(d) Not placing limb in proper position for treatment	4_____
(e) Not supporting dislocations	4_____
(f) Improper lifting or lowering of patient for applying splints (wrong side, etc.)	2_____
(g) Failure to place pad under knot in required cases (each infraction)	1_____
10. Application of Splints and Padding:	
(a) Improper splint ("L" splint instead of straight splint, or the reverse, cleats, marks, length, width, etc.)	4_____
(b) Splint improperly applied (too high, too low, etc.)	2_____
(c) Use of prepared padding (prefolded bandages, compresses, gauze, blanket, or previously padded splint)	4_____
(d) Improper or insufficient padding. No arch placed where compound fractures contact splint (each)	4_____
(e) Failure to place pad under knot in required cases (each infraction)	1_____

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(f) Failure to test splint used in dislocated hip, and fracture of neck, spine, or pelvis	4_____
(g) Failure to pad under natural arches of body (each)	2_____
(h) Lack of neatness	1_____
(i) Use of prepared material other than cravat bandages to hold padding on splints (rubber bands, etc.) (each infraction)	2_____
11. Application of Cravat or Triangular Bandages:	
(a) Not using cravat or triangular bandages in required cases (wounds, burns, fractures, dislocations, tying arms of unconscious person for transportation, etc.) or not using sufficient bandages to complete dressing (each omission)	4_____
(b) Improperly applied cravat or triangular bandage (compress not entirely covered, wrong method, wrong location, wrong position of knot) (each infraction)	2_____
(c) Applying bandages in wrong order (each bandage)	2_____
(d) Cravat or triangular bandage too tight or too loose (each)	2_____
(e) Failure to use sling in required cases	2_____
(f) Wrong type of sling or sling improperly applied	2_____
(g) Insecure, incomplete, or granny knot (bandages only) (each)	1_____
(h) Lack of neatness	1_____
12. Rupture:	
(a) Not rendering any treatment	6_____
(b) Improper position of patient (knees not raised and held in place by padding and bandages when practical)	4_____
(c) Failure to apply cold applications	2_____
13. Poisons, Apoplexy, and Snakebite:	
(a) Failure to render any treatment	10_____
(b) Not applying constricting bandage in snakebite	8_____
(c) Failure to loosen constricting bandage for 1 minute after bleeding wound for 20 minutes	2_____
(d) Not elevating head of patient having apoplexy	2_____
(e) Incomplete treatment (each omission)	2_____

		Discount
14.	Fainting, Sunstroke, Heat Exhaustion, Frostbite, and Freezing:	
(a)	Failure to render any treatment	8_____
(b)	Improper position of patient (head, body, etc.)	4_____
(c)	Incomplete treatment (each omission)	2_____
(d)	Applying heated objects or covering patient with blanket before reducing body temperature in sunstroke (each infraction)	2_____
15.	Transportation, Lifting, Lowering:	
(a)	Not testing stretcher	4_____
(b)	Not loading patient in required cases	6_____
(c)	Loading on stretcher but failing to carry patient	4_____
(d)	Improper construction of improvised stretcher	2_____
(e)	Lifting patient from wrong side (three men on least injured side)	2_____
(f)	Improper lifting or lowering (wrong knee, etc.) (each man)	2_____
(g)	Improper carrying (wrong step, etc.) (each man)	2_____
(h)	Not crossing obstacle or loading ambulance in required cases ...	2_____
(i)	Not unloading patient from stretcher in required cases	2_____
(j)	Captain not commanding properly (each infraction)	2_____
(k)	Team member not obeying command (each infraction)	2_____
(l)	Not elevating foot end of stretcher	2_____

Total discounts _____ Total credits _____

Recorder _____ Judges _____

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