

Interstate Commerce Commission

Washington, D.C. 20423

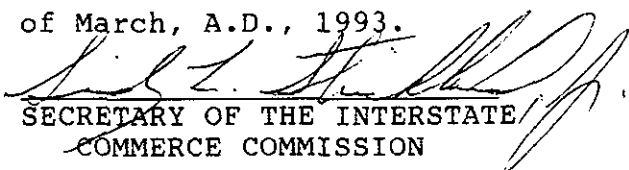


OFFICE OF SECRETARY

I, SIDNEY L. STRICKLAND, JR., Secretary of the INTERSTATE COMMERCE COMMISSION, do hereby certify that the attached is a true copy of the Association of American Railroads Proceedings of the Thirty-First Annual Meeting of the Medical and Surgical Section, held at The Drake Hotel, Chicago, IL, April 2, 1951, the original of which are now on file and of record in the office of said Commission.



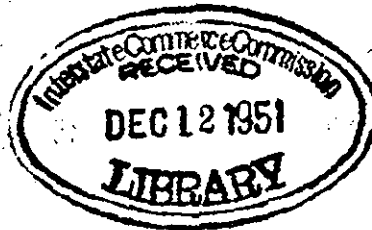
IN WITNESS WHEREOF I have
hereunto set my hand and
affixed the Seal of said
Commission this 9th day
of March, A.D., 1993.


SECRETARY OF THE INTERSTATE
COMMERCE COMMISSION

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Association of American Railroads

PROCEEDINGS
OF THE
THIRTY-FIRST ANNUAL MEETING
OF THE
MEDICAL AND SURGICAL SECTION



CHICAGO, ILLINOIS
APRIL 2, 1951

Glensburg No. 5112

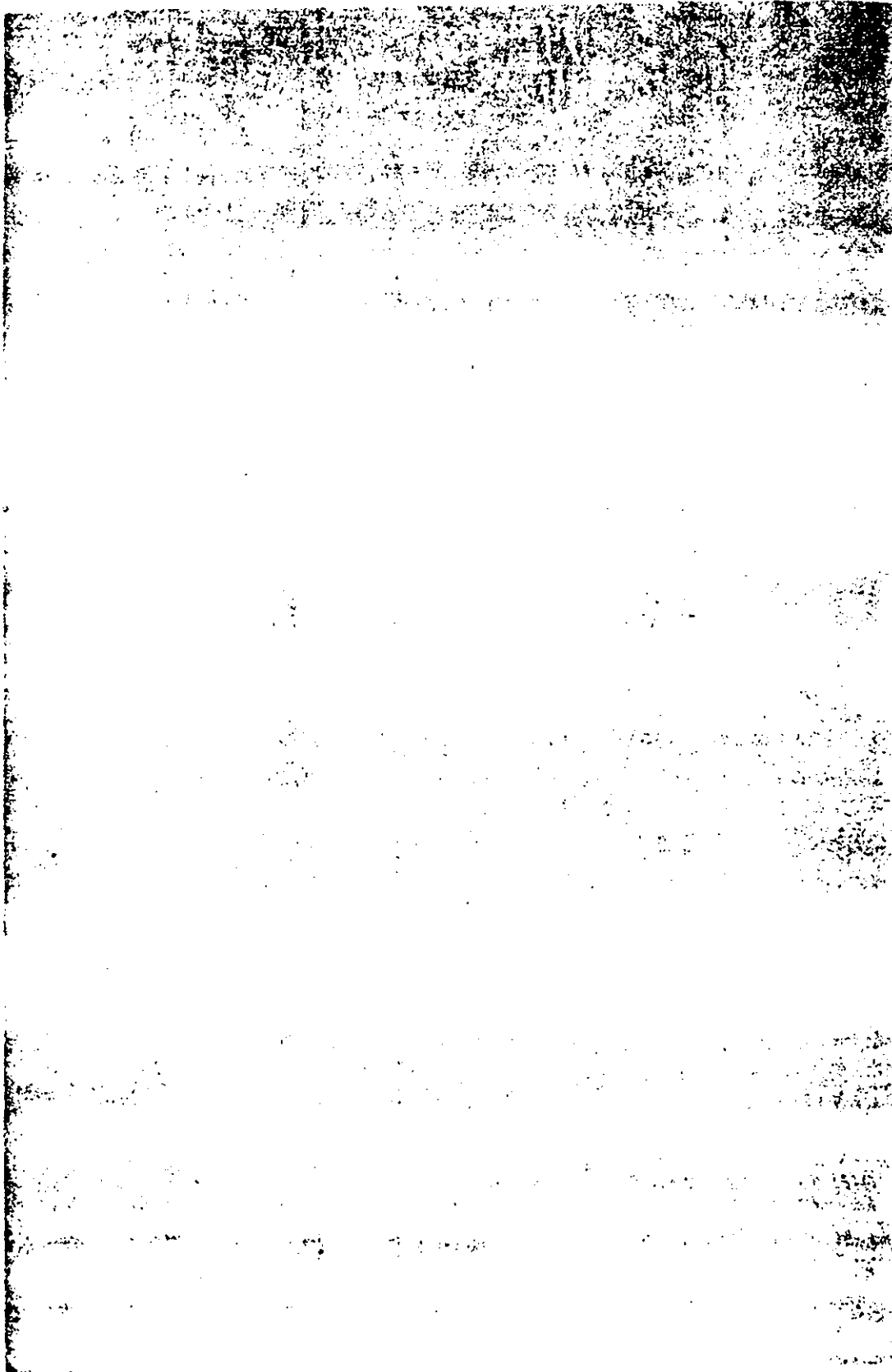
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EXHIBIT

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PROCEEDINGS
OF THE
THIRTY-FIRST ANNUAL MEETING
OF THE
Association of American Railroads,
MEDICAL AND SURGICAL SECTION



HELD AT THE
DRAKE HOTEL
CHICAGO, ILLINOIS
APRIL 2, 1951



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P. W. Joh:
W. A. Joh:
J. P. Kiley
R. S. Mac:
A. T. Merc
G. Metzma
P. J. Neff,
Ernest E. N
L. R. Powe
A. E. Stodd
Roy B. Wl
Wm. White

ASSOCIATION OF AMERICAN RAILROADS

(April, 1951)

Officers

W. T. Faricy, President.
 J. Carter Fort, Vice-President and General Counsel (Law Department).
 J. H. Aydelott, Vice-President (Operations and Maintenance Department).
 Walter J. Kelly, Vice-President (Traffic Department).
 E. H. Bunnell, Vice-President (Finance, Accounting, Taxation and Valuation Department).
 J. H. Parmelee, Vice-President and Director (Bureau of Railway Economics).
 Robert S. Henry, Vice-President (Public Relations Department).
 G. M. Campbell, Secretary-Treasurer.

Board of Directors

W. T. Faricy, Chairman (ex-officio).
 C. McD. Davis, President, Atlantic Coast Line Railroad.
 J. D. Farrington, President, Chicago, Rock Island & Pacific Railroad.
 Walter S. Franklin, President, Pennsylvania Railroad.
 E. S. French, President, Boston & Maine and Maine Central Railroads.
 F. G. Gurley, President and Chairman of Executive Committee, Atchison, Topeka & Santa Fe Railway.
 P. W. Johnston, President, Erie Railroad.
 W. A. Johnston, President, Illinois Central Railroad.
 J. P. Kiley, President, Chicago, Milwaukee, St. Paul & Pacific Railroad.
 R. S. Macfarlane, President, Northern Pacific Railway.
 A. T. Mercier, President, Southern Pacific Company.
 G. Metzman, President, New York Central System.
 P. J. Neff, Chief Executive Officer, Missouri Pacific Lines.
 Ernest E. Norris, President, Southern Railway System.
 L. R. Powell, Jr., President, Seaboard Air Line Railroad.
 A. E. Stoddard, President, Union Pacific Railroad.
 Roy B. White, President, Baltimore & Ohio Railroad.
 Wm. White, President, Delaware, Lackawanna & Western Railroad.

OPERATIONS AND MAINTENANCE DEPARTMENT

J. H. Aydelott, Vice-President

OPERATING-TRANSPORTATION DIVISION

F. A. Dawson, Chairman
 R. C. Parsons, Vice-Chairman
 L. R. Knott, Executive Vice-Chairman

 OFFICERS AND PERSONNEL OF COMMITTEES
 OF THE MEDICAL AND SURGICAL SECTION
 FOR THE YEAR 1950-1951

Dr. A. R. Metz, Chairman
 *Dr. Fuller Nance, Vice Chairman
 H. S. Dewhurst, Secretary

Committee of Direction

Dr. A. R. Metz, Chairman
 *Dr. Fuller Nance, Vice Chairman
 (Term expires in 1951)

Dr. Duncan Ege, Chief Surgeon, Nashville, Chattanooga & St. Louis Rail-
 way, Nashville, Tenn.

Dr. R. M. Graham, Director, Department of Sanitation and Surgery, The
 Pullman Company, Chicago, Illinois.

Dr. O. H. Horrath, Chief Surgeon, Chicago, Burlington & Quincy Railroad,
 Chicago, Illinois.

Dr. A. R. Metz, Chief Surgeon (Lines East), Chicago, Milwaukee, St. Paul
 & Pacific Railroad, Chicago, Illinois.

(Term expires in 1952)

Dr. M. B. Clayton, Chief Surgeon, Southern Railway System, Washington,
 D. C.

Dr. K. E. Dowd, Chief Medical Officer, Canadian National Railways, Mon-
 treal, Quebec, Canada.

Dr. T. L. Hansen, Chief Surgeon, Chicago, Rock Island and Pacific Rail-
 road, Chicago, Illinois.

Dr. J. Huber Wagner, Chief Surgeon, Bessemer and Lake Erie Railroad,
 1027 Carnegie Bldg., Pittsburgh 19, Pennsylvania.

(Term expires in 1953)

Dr. R. J. Bennett, Jr., Chief Surgeon, Elgin, Joliet & Eastern Railway,
 208 South La Salle Street, Chicago, Illinois.

Dr. A. M. W. Hursh, Chief Medical Examiner, Pennsylvania Railroad
 System, 15 North 32nd Street, Philadelphia 4, Pennsylvania.

Dr. W. E. Mishler, Chief Surgeon, Erie Railroad, 608 Republic Building,
 Cleveland 1, Ohio.

*Dr. Fuller Nance, Medical and Surgical Director, Baltimore and Ohio
 Railroad, Baltimore 1, Maryland.

(* Retired from active service effective February 1, 1951.)

Dr. James I.
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Dr. T. L. H.
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Dr. W. W.
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Dr. O. B. Z
 Missouri

Advisory Me

Dr. R. J. E
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Dr. R. M. C
 Pullman
 Drive, C.

Dr. C. C. Guy,
 Chicago,

Dr. O. H. Hor
 547 West

Dr. R. B. Ke
 Railroad,

Dr. A. R. Me
 waukee, S

Dr. Duncan E
 St. Louis

Dr. Ralph G. C
 Pacific Ra

Dr. C. F. Hol
 Georgia.

Dr. B. W. Stock
 Detroit, Mi

Dr. J. Huber W
 1027 Carner

C.

Dr. R. J. Bennet
 Railway, 20

Committee on Disability and Rehabilitation

- Dr. James K. Stack (Chairman), Chief Surgeon, Chicago & North Western Railway, 127 North Clinton Street, Chicago 6, Illinois.
- Dr. T. L. Hansen, Chief Surgeon, Chicago, Rock Island & Pacific Railroad, 139 West Van Buren Street, Chicago 5, Illinois.
- Dr. W. W. Leake, Chief Surgeon, Illinois Central System, 5800 Stony Island Avenue, Chicago, Illinois.
- Dr. W. W. Washburn, Chief Surgeon, Southern Pacific Company, Hospital Department, 1400 Fell Street, San Francisco 17, California.
- Dr. O. B. Zeinert, Chief Surgeon, Missouri Pacific Railroad, St. Louis, Missouri.

Advisory Members

- Dr. R. J. Bennett, Jr., Chief Surgeon, Elgin, Joliet & Eastern Railway, 208 South La Salle Street, Chicago, Illinois.
- Dr. B. M. Graham, Director, Department of Sanitation and Surgery, Pullman Company, Merchandise Mart Plaza, 222 West North Bank Drive, Chicago 54, Illinois.
- Dr. C. C. Gay, Chief of Surgery, Chicago Hospital, Illinois Central Railroad, Chicago, Illinois.
- Dr. O. H. Horrall, Chief Surgeon, Chicago, Burlington & Quincy Railroad, 547 West Jackson Boulevard, Chicago 6, Illinois.
- Dr. R. B. Kepner, Chief Medical Officer, Chicago, Burlington & Quincy Railroad, 547 West Jackson Boulevard, Chicago 6, Illinois.
- Dr. A. R. Metz (ex officio), Chief Surgeon (Lines East), Chicago, Milwaukee, St. Paul & Pacific Railroad, Chicago, Illinois.

Committee on Fractures

- Dr. Duncan E. (Chairman), Chief Surgeon, Nashville, Chattanooga & St. Louis Railway, 2001 Hayes Street, Nashville 4, Tennessee.
- Dr. Ralph G. Crothers, Chief Surgeon, Cincinnati, New Orleans & Texas Pacific Railway, Cincinnati 2, Ohio.
- Dr. C. F. Holton, Chief Surgeon, Central of Georgia Railway, Savannah, Georgia.
- Dr. B. W. Stockwell, Chief Surgeon, Detroit & Toledo Shore Line Railroad, Detroit, Michigan.
- Dr. J. Huber Wagner, Chief Surgeon, Bessemer & Lake Erie Railroad, 1027 Carnegie Bldg., Pittsburgh 19, Pennsylvania.

**Committee on Developments Resulting From
Physical Examinations**

- Dr. R. J. Bennett, Jr. (Chairman), Chief Surgeon, Elgin, Joliet & Eastern Railway, 208 South La Salle Street, Chicago, Illinois.

- Dr. J. J. Brandabur, Chief Medical Examiner, Chesapeake & Ohio Railway, Huntington, West Virginia.
- Dr. B. I. Derauf, Chief Surgeon, Northern Pacific Railway, St. Paul 1, Minnesota.
- Dr. O. H. Horrall, Chief Surgeon, Chicago, Burlington & Quincy Railroad, 547 West Jackson Boulevard, Chicago 6, Illinois.
- Dr. K. C. Walden, Superintendent and Medical Director, Relief Department, Atlantic Coast Line Railroad, Wilmington, North Carolina.
- Dr. R. S. Westline, Chief Surgeon, Chicago & Eastern Illinois Railroad, 334 West 63rd Street, Chicago, Illinois.

Advisory Members

- Dr. R. M. Graham, Director, Department of Sanitation and Surgery, The Pullman Company, Merchandise Mart, Chicago 54, Illinois.
- Dr. C. C. Guy, Chief of Surgery, Chicago Hospital, Illinois Central Railroad, Chicago, Illinois.
- Dr. R. Householder, Assistant Chief Surgeon (Lines East), Chicago, Milwaukee, St. Paul & Pacific Railroad, Chicago, Illinois.
- Dr. W. W. Leake, Chief Surgeon, Illinois Central System, 5800 Stony Island Avenue, Chicago, Illinois.
- Dr. J. K. Stack, Chief Surgeon, Chicago & North Western Railway, 127 North Clinton Street, Chicago 6, Illinois.
- Dr. A. R. Metz (ex-officio), Chief Surgeon (Lines East), Chicago, Milwaukee, St. Paul & Pacific Railroad, Chicago, Illinois.

Committee on Medical Aspects of Air Conditioning of Cars

- Dr. R. M. Graham, (Chairman), Director, Department of Sanitation and Surgery, Pullman Company, Merchandise Mart Plaza, 222 West North Bank Drive, Chicago 54, Illinois.
- Dr. M. B. Clayton, Chief Surgeon, Southern Railway Sys., 15th and K Streets N.W., Washington, D. C.
- Dr. Charles B. Fenwick, Chief of Medical Services, Canadian Pacific Railway, Windsor Station, Quebec, Canada.

Representatives of the Medical and Surgical Section on the Joint Committee on Railway Sanitation

- Dr. R. M. Graham, Director, Department of Sanitation and Surgery, Pullman Company, Chicago, Illinois.
- Dr. M. B. Clayton, Chief Surgeon, Southern Railway System, Washington, D. C.
- Dr. A. M. W. Hursh, Chief Medical Examiner, Pennsylvania Railroad, Philadelphia, Pennsylvania.

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ASSOCIATION OF AMERICAN RAILROADS

OPERATING—TRANSPORTATION DIVISION MEDICAL AND SURGICAL SECTION

RULES OF ORDER

1. **REPRESENTATION:** As provided in the Plan of Organization, the representation of member roads in the Medical and Surgical Section shall be Chief Surgeons or other persons engaged in a similar capacity. The Railway Express Agency, Inc., and the Pullman Company are eligible for membership in this Section.

2. **AFFILIATED MEMBERS:** A representative of an organization collaborating or cooperating with the Section may become an affiliated member thereof upon the approval of his application by the Committee of Direction. An affiliated member shall have the rights and privileges accorded a member road representative, except voting or the holding of office.

Officers and Committees

3. The officers of the Section shall consist of a Chairman, Vice-Chairman and Secretary.

(a) As provided in the Plan of Organization, the **CHAIRMAN** and **VICE-CHAIRMAN** shall be selected by the Committee of Direction from its membership. Their terms of office shall be one year. A Chairman will not succeed himself.

(b) The **SECRETARY** will be appointed by the General Committee of the Division. His salary shall be named by that Committee, subject to the approval of the Vice-President, Operations and Maintenance Department.

(c) The **COMMITTEE OF DIRECTION** will consist of twelve members, territorially representative as far as practicable—one each from New England and Canada; four from the East; two from the South and four from the West—elected as hereinafter prescribed, each of whom shall serve for three years.

The terms of office of all elective members of the Committee of Direction shall expire at the conclusion of the annual meeting. Vacancies in the committee membership shall be filled by appointment of the Committee until the next election.

In addition to the above, the Surgeon-General of the United States Bureau of Public Health Service or a representative to be designated by him, and a representative to be designated by the Conference of State and Provincial Health Authorities of North America shall be honorary members of the Committee of Direction.

The Committee of Direction will select from its elective membership a Chairman and Vice-Chairman of the Section, whose terms of office shall be one year. A Chairman will not succeed himself.

(d) The Standing Committees of the Section will be as follows:

Committee on Disability and Rehabilitation

Committee on Fractures

Committee on Developments Resulting from Physical Examinations

Committee on Medical Aspects of Air Conditioning of Cars.

The representation of member roads on these committees will be, so far as is practicable, territorially selected, in approximately the same proportions as that of the Committee of Direction, personnel to be named each year by the Committee of Direction immediately following adjournment of the annual meeting.

Duties of Officers

4. The **CHAIRMAN** shall have general supervision over the affairs of the Section and shall preside at meetings of the Section and at meetings of the Committee of Direction.

5. The **VICE-CHAIRMAN**, in the absence of the Chairman, shall perform the duties of the Chairman and such other duties as may be assigned.

6. (a) The **SECRETARY** shall perform the usual duties of that office and such other duties as may be assigned to him by the Chairman.

(b) He shall receive six weeks in advance of the annual meeting each year the report of the Committee on Nominations, as elsewhere provided for, and will submit to the membership at the annual meeting the nominations contained in that report, to fill the vacancies in the membership of the Committee of Direction. He shall announce the result of the election promptly to the members.

Duties of Committees

7. The **COMMITTEE OF DIRECTION** shall:

(a) Exercise general supervision over the interests and affairs of the Section.

(b) Be empowered to act on behalf of the Section in the interim between meetings and shall submit at each meeting a report covering its actions.

(c) Examine and decide what portion of communications, papers and reports shall be submitted at the meetings. It shall determine which, if any, of the subjects presented by the various committees, shall be referred to the General Committee of the Division.

(d) Appoint two months in advance of the annual meeting each year a Committee on Nominations, consisting of representatives of five member roads, who shall not be members of the Committee of Direction.

(e) Appoint additional committees as required.

(f) Submit to the Chairman, General Committee, detail of contemplated financial requirements for conducting the work of the Section as required or as called for by that official.

(g) Call annual meetings of the Section, subject to the approval of the General Committee of the Division, if in its judgment conditions warrant.

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(h) Call meetings of the Section, upon not less than thirty days' notice to each member. It must call special meetings of the Section upon the request, in writing, of a majority of the member roads.

8. The COMMITTEE ON NOMINATIONS, appointed as above prescribed, shall report to the Secretary at least six weeks in advance of the annual meeting of each year, at least two nominations for each impending vacancy to replace the four members of the Committee of Direction whose terms expire that year, and to fill any vacancy.

The duties of the Standing Committees shall be as follows:

9. COMMITTEE NO. 1—The COMMITTEE ON DISABILITY AND REHABILITATION shall study and report, with suggestions or recommendations, on such subjects that have to do with the physical efficiency or inefficiency of railroad employees. It shall also consider ways and means for the rehabilitation of injured or incapacitated employees and the complete restoration of function.

10. COMMITTEE NO. 2—The COMMITTEE ON FRACTURES shall study and report on the treatment and transportation of fracture cases including (a) Diagnosis of fractures, (b) First aid and transportation splints, (c) Fracture report forms, (d) X-ray work in connection with fractures, and similar subjects.

11. COMMITTEE NO. 3—The COMMITTEE ON DEVELOPMENTS RESULTING FROM PHYSICAL EXAMINATIONS shall analyze and make report, with recommendations or suggestions, on data made available by periodic examinations, etc. It shall study and revise as conditions may warrant, the recommended standards covering physical examinations as well as the forms used in connection therewith.

12. COMMITTEE NO. 4—The COMMITTEE ON MEDICAL ASPECTS OF AIR CONDITIONING OF CARS shall study and report on this subject in its relation to the health and comfort of travelers, cooperating with other departments handling matters relating to air conditioning of equipment.

13. VOTING AT MEETINGS OF SECTION: (a) Vote may be taken viva voce, by rising, by roll call or by ballot. Each member road shall be entitled to one vote. The vote of the majority of the member roads represented shall be required to decide any question, motion or resolution, unless otherwise ordered. (b) Voting for candidates for membership on the Committee of Direction shall be by ballot. (c) Unless otherwise designated by it, the ranking officer will be recognized as the voting representative of a road at any meeting.

14. LETTER BALLOTS may be taken upon any subject by order of the Committee of Direction and must be taken on all questions affecting physical property. The voting power of the member roads shall be proportionate to the ownership of miles of road.

15. **ORDER OF BUSINESS:** The order of business at meetings of the Section shall, unless otherwise directed by a majority of the members present, be as follows:

Approval of minutes of last meeting
 Reports of Standing Committees
 Reports of Special Committee
 Reports of Tellers
 Unfinished Business
 New Business

16. Robert's Rules of order shall govern the proceedings of this Section, including amendment to these Rules of Order.

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ASSOCIATION OF AMERICAN RAILROADS

MEDICAL AND SURGICAL SECTION

Drake Hotel, Chicago, Illinois, April 2, 1951. The following were present:

Members	Representatives
Baltimore & Ohio Chicago Terminal Railroad	Dr. S. M. English, Medical and Surgical Director.
Baltimore & Ohio Railroad.....	Dr. S. M. English, Medical and Surgical Director.
Bangor & Aroostook Railroad.....	Dr. H. C. Bundy, Chief Surgeon.
Belt Railway Company of Chicago.....	Dr. R. S. Westline, Chief Surgeon.
Bessemer & Lake Erie Railroad.....	Dr. J. Huber Wagner, Chief Surgeon.
Boston & Maine Railroad.....	Dr. J. R. Knowles, Chief Surgeon.
Canadian National Railways.....	Dr. K. E. Dowd, Chief Medical Officer.
	Dr. Emmet Dwyer, Regional Medical Officer.
Canadian Pacific Railway.....	Dr. C. P. Fenwick, Chief of Medical Services.
	Dr. G. Earle Wight, District Medical Officer.
Central of Georgia Railway.....	Dr. Ira Goldowsky, Medical Director.
Central Railroad of New Jersey	Dr. Ira Goldowsky, Medical Director.
Central Vermont Railway	Dr. K. E. Dowd, Chief Medical Officer.
Chesapeake & Ohio (Pere Marquette)	Dr. J. N. Ashline, Medical Director.
Chicago & Eastern Illinois Railroad	Dr. R. S. Westline, Chief Surgeon.
Chicago & North Western Railway	Dr. J. K. Stack, Chief Surgeon.
	Dr. A. Nygood, Chief Medical Examiner.
	Dr. W. H. Longworth, District Surgeon.
Chicago & Western Indiana Railroad.....	Dr. R. S. Westline, Chief Surgeon
Chicago, Burlington & Quincy Railroad	Dr. O. H. Horrall, Chief Surgeon.
Chicago, Milwaukee, St. Paul and Pacific Railroad	Dr. A. R. Metz, Chief Surgeon.
	Dr. James F. DePree, Chief Surgeon.
	Dr. W. H. Longworth, Local Surgeon.
	Dr. A. N. Altringer

Members	Representatives
Chicago, Rock Island & Pacific Railroad	Dr. T. L. Hansen, Chief Surgeon. Dr. A. N. Altringer.
Cincinnati, New Orleans & Texas Pacific Railway	Dr. Ralph G. Carothers, Chief Surgeon.
Colorado & Southern Railway	Dr. W. J. Longway, Chief Surgeon. Dr. W. B. Hardesty, Medical Director.
Cleveland, Cincinnati, Chicago & St. Louis Railway	Dr. Wm. H. Norman, Chief Surgeon.
Delaware, Lackawanna & Western Railroad	Dr. Wm. T. Davis, Chief Medical Officer.
Detroit & Toledo Shore Line Railroad	Dr. B. W. Stockwell, Chief Surgeon.
Elgin, Joliet & Eastern Railway	Dr. R. J. Bennett, Chief Surgeon.
Erie Railroad	Dr. W. E. Mishler, Chief Surgeon.
Fort Dodge, Des Moines & Southern Railway	Dr. W. H. Longworth, Chief Surgeon.
Grand Trunk Western Railway	Dr. K. E. Dowd, Chief Medical Officer. Dr. B. W. Stockwell, Chief Surgeon.
Illinois Central System	Dr. Wm. W. Leake, Chief Surgeon. Dr. Chester C. Guy, Chief of Surgery. Dr. R. L. Hill, Local Surgeon.
Indianapolis Union Railway	Dr. Wm. H. Norman, Chief Surgeon.
Kansas City Southern Railway	Dr. A. N. Altringer.
Louisville & Nashville Railroad	Dr. Duncan Eve, Chief Surgeon.
Maine Central Railroad	Dr. J. R. Knowles, Chief Surgeon.
Minneapolis, St. Paul & Sault Ste. Marie Railroad	Dr. Harvey Nelson.
Missouri-Kansas-Texas Railroad	Dr. Roland S. Kieffer, Chief Surgeon. Dr. W. A. Bowersox, Division Surgeon. Dr. L. S. Willour, Local Surgeon. Dr. Clyde P. Dyer.
Missouri Pacific Railroad	Dr. O. B. Ziemert, Chief Surgeon.
Montour Railroad	Dr. Harold G. Kuehmer, Chief Surgeon.
Nashville, Chattanooga & St. Louis Railway	Dr. Duncan Eve, Chief Surgeon.
New York Central System	Dr. Wm. H. Norman, Chief Surgeon. Dr. J. N. Asline, Medical Director. Dr. E. R. Murbach, Company Surgeon.
New York, Chicago & St. Louis Railroad	Dr. John W. Houk, Medical Director.
Norfolk & Western Railway	Dr. B. E. Topham, Medical Director.
Northern Pacific Railway	Dr. B. I. Derauf, Chief Surgeon.
Panhandle & Santa Fe Railway	Dr. Stonewall J. Montgomery, Surgeon.

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Pullman

Reading

St. Louis

St. Louis

Southern

Texas &

Virginian

Wabash R

Association

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Members

Representatives

Pennsylvania Railroad	Dr. A. M. W. Hursh, Chief Medical Examiner.
Pullman Company	Dr. R. M. Graham, Director of Sanitation and Surgery. Dr. Lloyd M. Markley, Chief Medical Examiner.
Reading Company	Dr. A. Neupauer, Chief Medical Officer.
St. Louis-San Francisco Railway	Dr. V. W. Hollo, Chief Surgeon. Dr. R. L. Hill, Local Surgeon. Dr. A. N. Altringer.
St. Louis Southwestern Railway	Dr. Wm. Hibbitts, Chief Surgeon.
Southern Pacific Company	Dr. Wm. W. Washburn, Chief Surgeon.
Texas & New Orleans Railroad	Dr. J. R. Gandy, Chief Surgeon.
Virginian Railway	Dr. Southgate Leigh, Jr., Chief Surgeon.
Wabash Railroad	Dr. W. E. Gollings, Superintendent Hospitals.

Also Present

Association of American Railroads	H. S. Dewhurst, Secretary, Medical and Surgical Section.
Railway Age Magazine	A. M. Cox, Jr., Associate Editor.
Tested Appliance Company	A. E. Frey

FIRST SESSION

Monday Morning, April 2, 1951

The Thirty-first Annual Meeting of the Medical and Surgical Section, Association of American Railroads, convened at 9:30 o'clock at the Drake Hotel, Chicago, Illinois, Chairman Arthur R. Metz, Chief Surgeon, Chicago, Milwaukee, St. Paul and Pacific Railroad, presiding.

THE CHAIRMAN: Gentlemen, this meeting is the Thirty-first anniversary of the organization of the Medical and Surgical Section of the Operating-Transportation Division, Association of American Railroads.

The Association of American Railroads is the organization of the principal railroads of the United States, Canada and Mexico, for dealing with matters of common concern in the whole field of railroading. The Articles of Organization of the Association read as follows: "Its object is, by recommendation, to harmonize and co-ordinate the principles and practices of American railroads with respect to their construction, maintenance and operation."

The Association is the "lineal descendant" of such earlier organizations as the Time Conventions formed in 1872, and the General Time Conventions, which, in 1883, established the system of standard time by which the whole nation now lives; the Master Car Builders' Association, formed in 1867, which established the standardization of freight cars, thus making possible their free movement from railroad to railroad throughout the country; and the Railway Accounting Officers' Association, formed in 1888, which helped to develop uniform railroad accounting and other similar organizations.

These and numerous other organizations of railroad men working together for the better performance of the railroad's job of transportation are now parts of the Association of American Railroads, which was created by the merger in 1934 of the American Railway Association, the Association of Railway Executives, the Railway Accounting Officers' Association, the Railway Treasury Officers' Association, the Bureau of Railway Economics, and other organizations.

Mr. R. H. Ashton, President of the American Railway Association, on November 6, 1920 appointed a temporary Committee of Direction of the Medical and Surgical Section, whose duty it was to organize the Section, elect temporary officers and supervise the Section's activities until such time as the Section might formally elect its successors.

The first meeting of the Committee of Direction was held in New York on December 1, 1920 and elected officers and adopted tentative regulations to govern its activities.

The records show the following to be the original appointed members of the Committee of Direction:

DR. D. Z. DUNNOTT (Chairman), Chief Surgeon, Western Maryland Railway, Baltimore, Md.

DR. G. G. DOWDALL (First Vice-Chairman), Chief Surgeon, Illinois Central Railroad, Chicago, Ill.

- DR. DUNCAN EVE (Second Vice-Chairman), Chief Surgeon, Nashville, Chattanooga & St. Louis Railway, Nashville, Tenn.
- DR. C. W. HOPKINS (Third Vice-Chairman), Chief Surgeon, Chicago & North Western Railway, Chicago, Ill.
- DR. WILLIAM B. COLEY, Chief Surgeon, New York Central Railroad, New York City.
- DR. T. R. CHOWDER, Director, Dept. of Sanitation and Surgery, The Pullman Company, Chicago, Ill.
- DR. H. S. CUMMING, Surgeon General, Bureau of The Public Health Service, Washington, D. C.
- DR. A. W. FREEMAN, Commissioner of Health, State Department of Health, Columbus, O. (Representing State and Territorial Health Officers' Association).
- DR. ROBERT J. GRAVES, Chief Surgeon, Boston & Maine Railroad, Concord, N. H.
- DR. J. A. HUTCHINSON, Chief Medical Officer, Grand Trunk Railway System, Montreal, Quebec.
- DR. A. W. IDE, Chief Surgeon, Northern Pacific Railway, Brainerd, Minn.
- DR. A. F. JONAS, Chief Surgeon, Union Pacific Railroad, Omaha, Nebr.
- DR. J. P. KASTER, Chief Surgeon, Atchison, Topeka & Santa Fe Railway, Topeka, Kan.
- DR. R. W. KNOX, Chief Surgeon, Southern Pacific Lines, Houston, Tex.
- DR. SOUTHGATE LEIGH, Chief Surgeon, The Virginian Railway, Norfolk, Va.
- DR. S. C. PLUMMER, Chief Surgeon, Chicago, Rock Island & Pacific Railway, Chicago, Ill.
- DR. J. B. WALKER, Surgeon, Pennsylvania System, New York City.

The first general meeting of the Section was held in Boston, Mass. on June 3-4, 1921 where a number of prominent speakers were on the program. An address of welcome was made by the Mayor of Boston, Hon. A. J. Peters.

Mr. R. H. Ashton, President of the Association, outlined the objectives for the Medical and Surgical Section. Surgeon General Cumming of the United States Public Health Service gave a talk outlining of the Department's endeavoring to co-operate. The first Chairman, Dr. D. Z. Dunott, Chief Surgeon, Western Maryland Railway, made a very extensive report and gave suggestions for organization and operating the Section which were adopted.

Annual meetings of the Section were held regularly until 1942 when on account of World War II no meetings were held until 1946.

On October 28, 1946, the general meeting of the Section was resumed at which time new officers and Committee of Direction were elected and meetings have been held annually ever since.

Inasmuch as the personnel representing the member roads has changed, many of whom are not familiar with the earlier work of the Medical and Surgical Section, it was deemed advisable for this year's annual meeting to make an extensive review of the proceedings during the past thirty years and abstract the important points that have been discussed and bring our various committee reports up to date.

The Committee on Disability and Rehabilitation has consumed a great

deal of time of the members of the committee, in addition to a group of advisory members, who have held a series of six meetings, and have reviewed the recommendations so that we are now presenting in abstract form the high points that have been discussed in the past with the hope that it will make easy reference to the new members of the Section.

In a similar way, the Committee on Developments Resulting from Physical Examinations has revised and brought up to date its report which is being presented for your consideration.

A special committee on First Aid Instructions for Railroad Employees has also revised the booklet which has been brought up to date and will be available as soon as printed.

Recommended Standard Practice as to First Aid Training and Equipment (Circular M. & S.-54) has been revised so as to conform with present day equipment.

In other words the present Committee of Direction and the various committees have been very active during the past year in abstracting and bringing up to date the many subjects which have been discussed during the past thirty years.

We hope that you will appreciate that many of the subjects discussed could be enlarged upon but our object is to keep it in as brief and abstract form as possible and that these are merely recommendations to be used as a guide for the Medical and Surgical Departments of the member roads to follow as it applies to their requirements.

The Medical and Surgical Section has been organized for thirty years and has served a very important position in the operation of the Association of American Railroads of which there is now a total membership of 135.

The representatives of all the Member Roads of the Association of American Railroads are urged to take an active interest in this Section and to enter into free discussion of the various problems that are presented and also to work on committees to which various members are asked to serve.

The present Chairman has had the pleasure of serving as Chief Surgeon of the Milwaukee Railroad for the past twenty-three years and has had the pleasure of being a member of the Committee of Direction for the past sixteen years.

It is interesting to note that in my Chairman's address of October 28, 1946, I recommended that all important subjects be brought up to date and to include the new developments in medicine and surgery and remarked at that time that it would take considerable work but would serve as a good text for the Section. This meeting five years later is presenting the result of this work that was originally recommended five years ago.

During the past year the office of the Medical and Surgical Section has been moved from New York to Chicago. From the time of the organization until coming into Chicago, Mr. J. C. Caviston was Secretary, during which time he helped direct the Section in a very able manner and those of us who have had the privilege of working with him miss his presence, but he has trained for the Section a good successor.

Our new Secretary, Mr. H. S. Dewhurst, who was appointed June 1, 1950 to succeed Mr. Caviston, is now in Chicago where the general offices of the Association are now located. Mr. Dewhurst has cooperated with the various committees being present at all their meetings. His services have added much to the committees in getting up reports that are now being presented. The Section can consider itself to be very fortunate to have such a competent and cooperative Secretary to carry on the work.

I am completing my sixth year as Chairman of the Committee of Direction and wish to express my sincere appreciation of the many years of fine friendship and cooperation that I have enjoyed and I extend my best wishes that the work will be carried on for the common interest of all railroads. (Applause)

RECORD OF ORGANIZATION AND MEETINGS OF THE ASSOCIATION

Year

1920 Dec. 1—D. Z. Dunott—Chairman—Committee of Direction—New York Organization meeting with temporary Committee of Direction and election of officers with adoption of tentative regulations to govern the activities of the Association.

Date	Chairman	Place of Meeting	Hotel
1921	D. Z. Dunott	Boston, Mass.	Hotel Westminster
1922	D. Z. Dunott	St. Louis, Mo.	Hotel Statler
1923	G. G. Dowdall for D. Z. Dunott	San Francisco, Cal.	Hotel St. Francis
1924	G. G. Dowdall	Chicago, Ill.	Congress Hotel
1925	G. G. Dowdall	Atlantic City, N. J.	Chalfonte Hotel
1926	J. L. Bower	Dallas, Tex.	Adolphus Hotel
1927	W. H. Bohart	Richmond, Va.	Jefferson Hotel
1928	W. H. Bohart	Quebec, Can.	Chateau Frontenac Hotel
1929	L. A. Ensminger	White Sulphur Springs, W. Va.	Greenbrier Hotel
1930	S. C. Plummer	Biloxi, Miss.	Edgewater Gulf Hotel
1931	E. V. Milholland	New York, N. Y.	Pennsylvania Hotel
1932	C. W. Hopkins	New York, N. Y.	Pennsylvania Hotel
1933	John McCombe	Chicago, Ill.	Stevens Hotel
1934	W. L. Hartman	Washington, D. C.	Hotel Washington
1935	J. R. Nilsson	Atlantic City, N. J.	Haddon Hall
1936	J. R. Garner	Chicago, Ill.	Stevens Hotel
1937	D. B. Moss	Atlantic City, N. J.	Traymore Hotel
1938	No Meeting	Depression	
1939	Duncan Eve	Chicago, Ill.	Stevens Hotel
1940	Harvey Bartle	New York, N. Y.	Pennsylvania Hotel
1941	W. J. Lancaster	Montreal, Can.	Mount Royal Hotel
1942	A. R. Metz	No Meetings—World War II	
1943	A. R. Metz		
1944	A. R. Metz		
1945	A. R. Metz		

Date	Chairman	Place of Meeting	Hotel
1946	A. R. Metz	Chicago, Ill.	Sherman Hotel
1947	Geo. P. Myers	Atlantic City, N. J.	Hotel Madison
1948	K. E. Dowd	Chicago, Ill.	Drake Hotel
1949	R. M. Graham	Atlantic City, N. J.	Haddon Hall
1950	O. H. Horrall	Biloxi, Miss.	Edgewater Gulf Hotel
1951	A. R. Metz	Chicago, Ill.	Drake Hotel

THE CHAIRMAN: The next item on the program is the presentation of the Report of Committee on Disability and Rehabilitation. Dr. James K. Stack, as Chairman of that Committee, will present the Report.

DR. JAMES K. STACK (Chief Surgeon, Chicago and North Western Railway): Mr. Chairman and Gentlemen: To facilitate the handling of this Report, which has already undergone considerable review and study in preparation and which has also been distributed to the members in advance of this meeting, I will read the subject headings only, and any comments from the floor on each of these will be most welcome.

(Dr. Stack then presented the report as follows.)

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(Circular No. M & S-291)

ASSOCIATION OF AMERICAN RAILROADS

MEDICAL AND SURGICAL SECTION

REPORT OF COMMITTEE ON DISABILITY AND
REHABILITATION

Committee Members

Dr. James K. Stack, Chairman, Chief
Surgeon, Chicago & North Western Rail-
way.
Dr. T. L. Hansen, Chief Surgeon, Chicago,
Rock Island & Pacific Railway.
Dr. W. W. Leake, Chief Surgeon, Illinois
Central System.
Dr. W. W. Washburn, Chief Surgeon,
Hospital Department, Southern Pacific
Company.
Dr. O. B. Ziemert, Chief Surgeon, Missouri
Pacific Railroad.

Advisory Members

Dr. R. J. Bennett, Jr., Chief Surgeon, Union
Joint & Eastern Railway.
Dr. R. M. Graham, Director, Department of
Sanitation & Surgery, The Pullman Com-
pany.
Dr. C. C. Gay, Chief of Surgery, Chicago
Hospital, Illinois Central Railroad.
Dr. G. H. Horrall, Chief Surgeon, Chicago,
Burlington & Quincy Railroad.
Dr. H. B. Kepner, Chief Medical Officer,
Chicago, Burlington & Quincy Railroad.
Dr. A. R. Metz (ex officio), Chief Surgeon
Lines East, Chicago, Milwaukee, St. Paul
& Pacific Railroad.

Chicago 5, Ill., January 26, 1931.

TO THE MEDICAL AND SURGICAL SECTION:

Your Committee on Disability and Rehabilitation respectfully submits as its report a "Digest" of subjects considered by the Committee in past years and discussed at various Annual Meetings of the Section. This "Digest" includes a summary of up-to-date recommendations or comments under each subject and the subjects are listed in alphabetical order. There is also an index at the conclusion of the "Digest" which not only lists the names of the subjects with appropriate cross references but indicates the years in which each subject was previously considered by your Committee.

As a matter of record, the original Committee was appointed in 1921 as "Committee on Prevention and Control of Occupational Diseases and Hazards." Reports were published in 1923 and 1924. In 1925 the name of the Committee appears in the Proceedings of the Medical and Surgical Section as the "Committee on Occupational Diseases and Hazards." Reports appeared annually from 1925 to 1931, inclusive.

In 1932 the Committee was called the "Committee on Occupational Diseases and Rehabilitation," and in 1933, this name was changed to the "Committee on Disability and Rehabilitation," under which name it has continued to the present time. No reports were made in 1938, 1942-43-44-45 and 1949-50.

Your present Committee, with the assistance of Advisory Members as listed above, reviewed the published Proceedings and abstracted the various subjects discussed, as a basis for this "Digest." The Summaries that appear under each subject heading are to be considered as "recommendations to harmonize and coordinate the principles and practices of American railroads with respect to their operation."

Respectfully submitted,

COMMITTEE ON DISABILITY AND REHABILITATION,
JAMES K. STACK, M. D., Chairman.

DIGEST

ABRASIONS WITH EMBEDDED CINDERS

Abrasions from cinders cause embedding of colored materials in the skin. The result is a tattoo. All wounds should be carefully cleansed and curetted out to remove these materials.

ALCOHOLISM

Every railroad occasionally encounters the problem of an employee who has reported for work while under the influence of alcohol.

This condition can be best determined by evidence of mental confusion on the part of the individual, incoordination, and/or the odor of alcohol on his breath. Further information can be obtained by laboratory examinations of the employee's urine, breath, and blood for alcohol content.

ALLERGY, HAY FEVER AND ASTHMA

In addition to discussions on the above subject listed in the index, the Committee calls attention to discussions of the subject in the 1936 Proceedings by the Committee on Medical Aspects of Air Conditioning of Cars.

In chronic or recurring cases of allergic manifestations, it is important to try to determine the cause of the individual's sensitization. The facilities of a specialist in allergic diseases may be required in the diagnosis and treatment of such conditions.

The newer antihistaminic drugs are often of considerable value in treating acute episodes of these conditions, particularly in hay fever. Epinephrin (adrenalin) subcutaneously is frequently the drug of choice in the treatment of severe acute exacerbations.

AMEBIC DYSENTERY

In 1934 amebic dysentery was considered by the Committee and discussed following a scattered epidemic, apparently originating in Chicago.

Current medical opinion is that chronic amebic dysentery is widespread throughout the United States. The Committee recommends study of an employee for this disease when prolonged or recurrent enteritis is complained of by him.

AMPUTATIONS

The end result of amputation, at the various levels is extremely important, and furthermore, the duties of the amputating surgeon are not finished until the amputated extremity has been fitted with a satisfactory artificial limb and the patient been successfully rehabilitated.

Open amputation (Guillotine) is carried out primarily on potentially infected wounds or upon individuals who are poor surgical risks. The fact that further revision may be necessary should be kept in mind and all possible length maintained.

The closed amputation is one which is performed in a clean field and in which the skin flaps are closed over the end of the stump.

The muscle in the amputation serves the function of activation and padding. Tendons are ordinarily sectioned near muscle attachments and removed. Fascias in the closed amputations aid in the grouping of muscles around the

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bone stump. Nerves in open and closed amputations are gently exposed by traction, severed and allowed to retract. The periosteum and bone are divided at the level of final bone length.

In the metacarpals, metatarsals and phalanges it is recommended to save all that is possible. In the carpals and tarsals the amputations as a whole are not too successful. The ideal site of election in the leg is from 5" to 7" below the knee joint. If the amputation in the leg is shorter than 4", then the fibula should be resected. The ideal stump in the thigh is about 4" proximal to the lower end of the femur. Save all possible bone in the femur proximal to 4" above the lower end of the femur.

The ideal stump in the forearm is 3" above the lower end of the radius. Do not cut the radius and ulna shorter than 1" distal to the insertion of the biceps. The ideal stump in the arm is 3" above the lower end of the humerus. The area of election in the humerus runs distal to 4" below the upper end of the humerus. The contour of the shoulder is improved by leaving the humeral head.

Postoperatively a reasonable period of time should be allowed for healing, and then physiotherapy should be administered promptly and thoroughly so that the contours best adapted to wearing of an artificial limb are secured in a minimum of time.

The best functional results are obtained on those individuals who have prompt and efficient surgery, adequate physiotherapy, proper fitting of the limb and adequate instructions and follow-up for the most efficient use of the limb. At the present time there are several amputation centers which specialize in teaching the amputee to get the maximum use of his artificial member.

ANTIBIOTICS

With the discovery and refinement of antibiotic methods and therapy, an increasing number of these are being made available for use. Many of these have specific affinities for certain organisms. It is important when one is treating an established infection that the causative organism be known if this can be readily determined. It is also helpful to determine the sensitivity of the organism to the various antibiotic drugs. In this way therapy can be specific and the results are therefore surer and recovery expedited. The patient may develop a sensitivity to these drugs manifested by cutaneous and other allergic phenomena. The value of antibiotics in the prophylactic treatment of wound infection is still undetermined. Antibiotics should be employed conservatively.

BACK CONDITIONS

Back Injuries:

A practice has been made on a few railroads of making routine x-rays of the spines of all applicants for employment, particularly those in train service for evidence of anomalies, previous injuries or disease.

The value of such examinations is questionable, but may be of value in any future complaints of the employee.

One railroad, in addition to making the usual examinations for employment, had made x-rays of spines of 1189 applicants who passed a satisfactory physical examination. X-rays were made in two positions, with following abnormalities noted:

Spina bifida.....	235
Scoliosis.....	109
Lumbar ribs.....	93

Proliferative changes.....	85
Sacralization	61
Deformity of coccyx.....	37
Six lumbar vertebrae.....	31
Deformity of transverse process.....	17
Incomplete union of 1st and 2d sacral segments.....	25
Eleven dorsal vertebrae—eleven ribs.....	14
Four lumbar vertebrae.....	9
Thirteen dorsal vertebrae—thirteen ribs.....	6
Congenital deformity sacrum.....	4
Variation of intervertebral disc.....	3
Cervical ribs.....	5
Congenital deformity of body of vertebra.....	8
Incomplete union of lamina and articular process.....	5
Fractured ribs.....	16
Tuberculosis lungs.....	12
Fractured pelvis.....	4
Fractured vertebra.....	10
Spondylolisthesis.....	3
Tuberculosis vertebrae.....	1
Exostosis of rib.....	1
Calcified ilio-lumbar.....	2
Total variations.....	796
Total cases showing variations.....	554
Total congenital and developmental.....	635
Total number of cases.....	1189

Painful Backs:

Painful backs are frequently complained of by railway employees and alleged to be due to trivial accidents.

There are numerous causes for painful backs, some of which are as follows:

Prostatitis	Congenital defects
Chronic appendicitis	Arthritic processes
Gallstones or gall-bladder infections	Foci of infection
Spastic constipation	Posture
Renal calculus	Spondylolisthesis
Retroperitoneal calcified glands	Curvature
Abdominal ptosis	Tumors of the cord
Mucous colitis	Metastatic tumors
Carcinoma of rectum	Trichinosis
Pregnancy	Hemorrhoids
Fibroses	Neurosis
Ovarian cysts	Flat Feet
Prostate calculi	Malingering
Renal ptosis	Etc.

Any employe complaining of back pains which he alleges to be due to some trivial accident should be examined thoroughly with above possible causes kept in mind.

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Sacro-iliac Complaints:

The diagnosis of sacro-iliac conditions is made too frequently. The great majority of back complaints given this name are in reality lumbosacral lesions with lateral reference of pain.

Infections or other inflammatory conditions can involve the sacro-iliac joint but the diagnosis of sacro-iliac strain or sprain should be looked upon with suspicion.

Spondylolisthesis:

Spondylolisthesis, or displacement of one vertebra on another, occurs more often in the lumbosacral junction than in any other region. It is commonly associated with a congenital defect in the pedicles of the fifth lumbar vertebra, which allows the laminae and articular facets to remain in normal relation to the sacrum, while the body of the fifth vertebra displaces forward. This condition may exist for years without symptoms and may be very mild and accompanied only by local pain, or it may be extreme and associated with symptoms due to pressure on the cauda equina.

Diagnosis may be suspected by proper examination of the back, but x-ray is the only way of confirming the diagnosis.

BLOOD PRESSURE

An employee with high blood pressure, if persistent and associated with cardio-vascular-renal disease or diabetes, etc., is an unsafe worker and, if in train service, is a menace to other employees and the public.

An employee in train service should be removed if the systolic pressure is over 200 or diastolic is over 120, or if the heart apex is to the left of the nipple line.

Employees whose blood pressure is not consistent with their weight and age, especially when associated with evidences of cardio-vascular-renal damage, should be kept under observation.

BURNS

Burns are to be looked upon as wounds. In the case of 1st and 2nd degree burns, the wound is closed and infection will not penetrate unless the protected skin layer is broken in the course of treatment. In 3rd degree burns, the wound usually is an open one and is to be treated with the respect accorded any other open wound.

The management of the extensive 3rd degree burn is carried out along two lines, that which concerns the treatment of the wound itself and that which is concerned with the systemic abnormalities that follow extensive burns. Fluid, blood and serum loss is part of the burn picture, and an up-set of the protein, serum chlorides and other blood constituents should be anticipated and countered from the beginning. By the use of a mild cleansing agent and massive pressure dressings, infection can be held to a minimum and the closure of the wound by a split thickness skin graft should be done as soon as possible. If the extent of the tissue destruction can be surmised early, then excision of this area and subsequent grafting will hasten the healing process. If the extent of the burn cannot be determined, a line of demarcation may be waited for and then excision of the necrotic skin carried out. When the general condition of the patient permits, early excision is preferable to waiting for the established sloughing to occur. Plastic procedures for the relief of burn contractures are considered only after primary healing has taken place and the patient's chemistry is in good balance.

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CARDIO-VASCULAR-RENAL DISEASE

A person with cardio-vascular-renal disease should have a careful examination. This examination includes the heart, blood pressure, urine, blood chemistry, and a check on the clinical symptoms. The eyes, including the eye grounds and vision should be noted. Dizzy spells, angina, edema, and dyspnea should be carefully evaluated. The conditions of the heart muscle and coronary vessels should be determined. Repeated examination every six months or oftener is important.

Employees in train, engine, yard, and signal service with advanced aortic lesions, definite myocarditis, heart block, aneurysm, and angina pectoris and auricular fibrillations should be removed from service. Persons with auricular fibrillations have a high mortality rate. Cerebral and other complications frequently occur.

An employee with coronary occlusion should be removed from service until he presents satisfactory evidence of recovery without residual damage.

CATARACT

A cataract in one eye reduces or destroys the vision in that eye.

After operation on one eye the refraction of the two eyes is different, which causes defective vision and judgment of distance is poor. Post-operative vision, corrected or uncorrected, is exceedingly poor and judgment of distance is impaired.

Engine and train service men with cataract, whether operated on or not, should be limited to services which they can perform safely and satisfactorily. This applies also to engine and train service men with bilateral cataracts, whether operated on or not.

CHARCOAL HEATERS IN REFRIGERATOR CARS

One hazard involved in the use of charcoal heaters in refrigerator cars is the formation of carbon monoxide gas, which if inhaled in sufficient quantities causes unconsciousness, and sometimes death. With ordinary precaution, however, this hazard is found to be slight. In addition, it is found that the carbon monoxide gas developed is beneficial to commodities shipped, apparently destroying bacteria and insects in the fruits and vegetables, and retarding decay.

Instructions are issued by all companies using charcoal heaters, and it is found that the employees handling these heaters soon become just as conversant with the instructions concerning handling these heaters as they are with conventional train and operating rules.

The National Perishable Freight Committee (516 West Jackson Boulevard, Chicago 6, Illinois), has issued a circular on this subject (Circular No. 20-C, September, 1948, and Supplement No. 3 to Circular No. 20-C, December, 1948), and these rules, with some modifications, are still in use. In addition to the general instructions, placards are attached to each side of cars furnished with heaters, reading as follows:

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POISONOUS FUMES
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CHRONIC ARTHRITIS

Chronic arthritis may be divided into rheumatoid arthritis and hypertrophic arthritis.

In rheumatoid arthritis (chronic infectious arthritis, atrophic arthritis and arthritis deformans) the etiology is suspected as being infectious. The knees and fingers are chiefly affected, although the disease may be shifted about from shoulder to elbow, wrists and spine.

Hypertrophic arthritis (degenerative arthritis, osteoarthritis) is usually a disease of people past middle age. Obesity or over-weight may aggravate the disease. In this condition there is a definite cartilaginous destruction in the joint and the cartilage is worn away and the underlying bone is exposed.

These two types of arthritis cannot definitely be wholly divided one from the other. Gout also should be considered in the diagnosis and treatment of arthritis.

Treatment: salicylates are by far the most useful drug in most cases up to the present time, but as a rule this relief is temporary. In early cases it is suggested that a focus of infection be identified.

ACTH has been introduced for the treatment of rheumatoid arthritis. In view of the fact that adrenal cortical stimulation affects so many important metabolic and physiologic processes in the body, great care should be exercised in the therapy. At the present time the immediate results of ACTH therapy can best be explained as dramatic. Only time will tell if these conditions may be permanently benefited. ACTH therapy can do good but it may also be harmful. Early acute cases of rheumatoid arthritis do better in general on a lower dose than is the case of long-standing more severe disease.

Similar dramatic improvement has been observed with the administration of cortisone acetate.

Disabilities from arthritis frequently are improperly attributed to injury.

COLOR VISION

A test for the detection of color defects should be one which can be carried out as rapidly as possible with maximum efficiency. The Holmgren worsteds or any standard modification have historically been very reliable. Several lantern tests have been devised which are also reliable. The Ishihara (color plate) test, which was modeled after the Stillings test, is rather accurate. There are several modifications of this test but the colors are apt to vary with the printing of the color plates.

Color plate tests are favored; lantern tests also are reliable.

Field tests are not reliable and therefore are not recommended.

THE "COMMON COLD" AND UPPER RESPIRATORY TRACT INFECTIONS

Reference is made to address of the Chairman of the Section on Internal Medicine of the American Medical Association at their convention in June 1950 on "Some Problems of the Common Cold," together with his list of references (J.A.M.A. 144; 287 Sept. 23, 1950). This is a rather complete summary of present concepts as to etiology, treatment and prophylaxis of the common cold in 1950. Also, attention is called to discussion by H. A. Reimann on "Viral Infections of the Respiratory Tract" (J.A.M.A. 132; 487 Nov. 2, 1948).

The Committee agrees that vaccines and vitamins are of little value in the prophylaxis and treatment of colds; that sterilization of the air in occupied quarters by ultra-violet light irradiation, or by aerosols, such as the glycols, is of little proven benefit in controlling the spread of the infection; and that while the use of antihistaminic drugs may be of considerable value in allergic types of rhinitis, they are of little value in virus type infections.

Attention is called to possible reactions from use of antihistaminic drugs, and it is recommended that these drugs should not be used during work by engine men, or in other occupations where poor coordination or drowsiness might prove to be disastrous.

Hygienic habits are advocated as a prophylactic measure, and medical care is advised if the affected individual is distressed or has a fever. Caution in the early stages of a "cold" is advocated, to protect other contacts and to avoid serious complications, such as pneumonia.

CROSS EYE--STRABISMUS

Strabismus usually is associated with partial loss of vision in one of the eyes, or there is an alternating vision from one eye to the other. A person so afflicted is in the same category as the one-eyed person. There is a lack of muscle balance and depth perception.

Engineers and firemen so afflicted should be limited to services which they can perform safely and satisfactorily.

DERMATITIS

Gloves which will absorb creosote should not be worn in handling of creosoted timbers, because they are likely to become impregnated with creosote and increase the severity of exposure.

In the prevention of oil dermatitis the Committee recommends the use of suitable clean clothing, the protection of exposed skin with protective creams, and thorough cleaning of skin after work.

It is advised that certain workers who may be found to have a marked sensitivity to a material used may require transfer to other types of work not involving occupational exposure to the accused irritants.

See "Poison Ivy and Poison Oak."

DIABETES

It is agreed that no diabetic taking insulin should be allowed to continue in any hazardous occupation connected with train service, where a sudden incapacity would jeopardize either his own life or the lives of others. Any diabetic taking insulin is potentially a dangerous man.

Diabetic individuals are more subject to degenerative eye changes than normal individuals, and it is recommended that eye examinations to include fundus findings by a specialist be carried out at fairly frequent intervals, especially where routine eye examinations show failing vision.

Attention is called to possible complications from injuries, especially to the lower extremities, from pre-existing diabetes, and the Committee recommends particular attention to the care and protection of lower extremities of diabetics.

Attention is also called to the association of diabetic disease with cardiovascular degenerative diseases, and occasionally with coronary artery disease.

It is emphasized that these conditions are dangerous, acting as insulin c

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DINING C

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It is emphasized that occasional injections of insulin, as once or twice a week, are dangerous, unless patient is hospitalized; also, that newer forms of slower acting insulin do not free patient from the dangers of reaction.

It is agreed that an employe with mild diabetes which is properly controlled by a satisfactory diet may be permitted to continue work in certain occupations, but that an employe in a hazardous occupation, particularly in connection with train service, should be removed from such an occupation until the diabetic condition is brought under good control without the use of insulin, and that periodic examinations are indicated to see that proper control of the disease is maintained.

Further conclusion—Any moderately severe diabetic, whether receiving insulin treatment or not, should be restricted.

DINING CAR EMPLOYE INSTRUCTIONS; FOOD HANDLERS

In 1934 following a scattered national epidemic of amebic dysentery, apparently originating in Chicago in 1933, the importance of good hygiene on the part of railroad food handlers was re-emphasized and a list of recommendations to be printed on a placard and posted under glass in kitchens of railroad dining cars and dining rooms was presented.

Comment—Several of the instructions recommended in 1934 are sound but do not conform to recent codes of practice relating to eating establishments presented by the U.S. Public Health Service.

Chief Surgeons are referred to recently amended Interstate Quarantine Regulations (1930) and to the Sanitation Manual for Interstate Carriers of the U.S. Public Health Service (1942). The Public Health Service is contemplating issue in the near future of several manuals relating to dining car practices, railroad servicing practices, etc., and it is contemplated that these will replace the Sanitation Manual of 1942.

The problems of dining cars, food handling, and eating and cooking utensils, along with other problems with relation to sanitary procedures, are now being actively progressed by the Federal and State Public Health agencies. The Joint Committee on Railway Sanitation of the A.A.R., on which are three medical members representing the Medical and Surgical Section, serves as one liaison group with representatives of the U.S. Public Health Service in the consideration of problems of and practices recommended for railroad sanitary procedures.

Since World War II the U.S. Public Health Service and state and local health services in many cities have been carrying on schools of instruction for restaurant workers. In many places the railroads have been invited to and have participated in these schools. Officers of dining car departments are advised by the health authorities of such meetings.

DISEASES DUE TO HEAT

There are primarily three diseases due to heat. They are as follows:

1. Heat cramps—primarily due to loss of salt. Organic diseases, alcoholism, poor hygiene, fatigue, malnutrition, generally poor health, all predispose to heat cramps. Heat cramps may be eliminated by taking sufficient table salt and water, depending upon the humidity of the day and the amount of sweat loss.

2. Heat exhaustion is primarily due to poor dietary habits. It is precipitated by improper clothing, the ingestion of too much or too little food, and poor hygiene. Prolonged physical exertion in a hot environment may aggravate this syndrome if proper food, sleep, hygiene and baths are not handled intelligently.

3. Heat stroke (heat retention, sunstroke), is due to the gradual elevation of body temperature over a period of hours or days due to the hot environment, improper clothing and improper diet. This condition may be aggravated by poor body cleanliness and hygiene. The most important point in the treatment of this condition is to pack the patient in ice until the temperature gradually descends to 103-104° F. Intravenous fluids may then be started and the ice therapy gradually suspended.

ELECTRICAL ACCIDENTS

The essentials of treatment of electrical accidents are:

1. Release the electrified person from the current in the quickest and safest possible way.
2. Institute artificial respiration immediately if victim is not breathing and continue artificial respiration preferably by the Schaeffer prone pressure method, until there are unmistakable signs of death.
3. Victims of electrical accidents in the vicinity of large cities may receive rapid emergency treatment from the inhalator squad maintained by most modern Police Departments.

EPILEPSY AND EPILEPTIC EQUIVALENTS

The subject of epilepsy and epileptic equivalents is one of great importance in railroad medicine, and the dangers of such a condition cannot be too strongly impressed upon the Chief Surgeons of member Lines.

It is desired to emphasize that all epileptic seizures, whether of the Jacksonian or any other type, should be cause for permanent removal from any hazardous service connected with railroad operations. It is not essential that a "Grand Mal" should be exhibited, as any case showing a "Petit Mal" is just as important both to the employee and the employer when exhibited by any person engaged in engine or train service or other hazardous occupations.

As previously stated, the epileptic equivalents present a far more difficult problem than actual epileptic seizures since attacks may not be accompanied by convulsions, and the entire manifestation may consist merely of a momentary loss or lapse of consciousness. During such a brief state, serious accidents could be caused by employees engaged in engine or train service, which gives the subject a momentous importance from the Railroad's standpoint.

It is recommended that all cases of disruption of the mental faculties, even though momentary, should be carefully investigated before permitting the employee to return to duty in any hazardous occupation. Any recurrence should be considered sufficient to warrant the affection as being classed of a disqualifying nature and such employees should be prohibited from engaging in any train or engine work, or other hazardous occupation.

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FIRST AID AND EMERGENCY TREATMENT

First Aid should be considered as that treatment which is given to a sick or injured person by laymen. The services of a Physician should be referred to as Emergency Treatment and not as First Aid. The essential principles of First Aid are already published in a pamphlet endorsed by this Section. Such a pamphlet should be available to every railroad employe, particularly those who are engaged in work of a hazardous nature.

FOCI OF INFECTION

Teeth, tonsils, prostate and sinuses are the most important foci of infection. The middle ear, gallbladder, appendix, urinary bladder and colon are offenders to a lesser degree. Carious teeth, pyorrhea and other gum infections should not be overlooked.

Whenever injury or pain is complained of in the lumbar or sacral regions without objective findings, the prostate should be considered as a possible offender rather than trauma.

Periodic physical examinations with attention to focal infection will aid in the improvement of general health and increased work capacity and efficiency among railroad workers.

FOOD POISONING

As pointed out by G. M. Duck in his monograph¹ on "Food Poisoning," the term is of necessity vague.

Among the common causes of gastro-intestinal upsets frequently related by the patient as coming from their food or drink, and sometimes by their doctor, as the cause of their gastro-intestinal upset, are bacteria and their products, chemicals, poisonous plants and animals, protozoa and helminths, and a miscellaneous group of illnesses, the causes of which are unknown, but quite likely due to virus infections, and commonly known as "intestinal flu."² Osler distinguished between the endogenous and the more common exogenous sources of food poisons.

"Ptomaine poisoning," according to Duck and others is a misnomer.³

Acute gastro-enteritis coming on suddenly within one or several hours after eating tainted food, and with symptoms of varying severity, usually accompanied by abdominal cramps and diarrhea, and occasionally by vomiting, salivation, and severe shock may frequently be shown to be due to staphylococcus toxin, that has been built up in the food during the preparation period or before, sometimes from improper handling or storage. This type of poisoning is commonly found where the complaint arises in a number of individuals shortly after partaking of portions of the same questionable food.

Bacterial infections, such as *Salmonella*, *Shigella*, *streptococcus* and typhoid have a more prolonged incubation period in the body than the short period seen in staphylococcus toxin enteritis.

References

- ¹ Food Poisoning, G. M. Duck, Univ. of Chicago Press Publ. 1943.
- ² Epidemic Diarrhea, Nausea and Vomiting of Unknown Cause. H. A. Reimann, et al. JAMA 127:1 (Jan. 6) 1945.
- ³ Ptomaine Poisoning a Myth. G. M. Duck, Indus. Med. & Surg. 18:151 (Apr.) 1949.

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Water from a certified domestic source is rarely the cause of an acute gastrointestinal upset, such as is seen in staphylococcus food poisoning or in "intestinal flu."

GLASSES AND GOGGLES

All tinted or colored lenses now available for glasses or goggles are colored filters. Most colored filters reduce transmission of certain portions of the visible spectrum and impair color vision seriously.

Colored protective lenses for glasses or goggles must not be used by employees involved in the operation of trains, where duties require accurate interpretation of color signals.

It is hoped that an ideal absorptive glass for use as a protection against glare will soon be available. It will be a neutral gray, transmitting about thirty percent of all visible light and affording about equal visualization of all the colors in the spectrum.

Such lenses must be large and mounted in aviator's type frame in order to cover the entire visual field. If the individual requires refractive correction, his lenses should be ground to his prescription. Clip-on lenses over regular glasses are not permitted.

Under no circumstances should these neutral gray lenses or any tinted or colored lenses be worn at dawn, dusk, on cloudy days, or at night. They should be worn only in sunlight.

It is recommended that glasses or goggles worn by employees using hand tools, or operating power machines, etc., in shops, be made of shatter-proof glass.

HANSEN'S DISEASE (LEPROSY)

Transportation by Common Carriers of Persons Afflicted by or under Treatment for Hansen's Disease

Attention is called to the action by the Committee of Direction on this subject as reported in the Proceedings for 1947 (pps. 17-20), and discussion of the same subject in Proceedings for 1948 (pps. 71-74).

Nothing further has developed since those reports to indicate a change in the recommendations of the Committee of Direction, Medical and Surgical Section, to the Association on this subject.

It is recognized that while leprosy is considered to be a communicable disease, such communicability is of very low grade and not possible from contacts as experienced in travel of such cases on railroads. The disease is not listed among "Communicable Diseases" in the 1917 Federal Interstate Quarantine Regulations, nor in amendments thereto of 1950. While it appears that active, uncontrolled cases of the disease should be restricted in their activity for the peace of mind of uninformed contacts, treated cases in controlled stages of the disease present no hazard from contact, and should be permitted to travel within the limits prescribed and permitted by public health authorities.

HEAD INJURIES

After a blow on the head, the important thing to determine is not whether the skull was fractured but rather the extent of the injury, if any, to the brain or its vessels. The patient with a head injury should not be subjected to the movements necessary to get x-rays of the skull until it has been determined that such manipulation is safe. If the x-rays can be made without manipulat-

ing the head, they will supply additional information. The two intracranial lesions that are most important to watch for, are bleeding from the middle meningeal artery and the development of subdural hematoma. The more severe lesions of the brain structures proper are not amenable to surgical treatment.

The patient who has been rendered unconscious by a blow on the head should be watched carefully, particularly his blood pressure, reflexes, pulse, type of respiration and pupillary reactions, and general tone of the muscles of the arms and legs. The so-called "lucid interval" so long associated with middle meningeal hemorrhage, should not be depended upon entirely. A person may be rendered unconscious by concussion of the brain and by bleeding concomitantly from a ruptured middle meningeal artery. The pressure exerted by the hemorrhage will be enough to keep him unconscious so that the pupillary signs, pulse and blood pressure are the best indications of this. The subdural hemorrhage and its symptoms may be delayed. The neck should not be neglected in people with head injuries as frequently the violence of such injuries to the head could subject the neck to "whip-lash" mechanism.

HEARING DEFECTS AND TESTS

Candidates for employment in train service should not be accepted unless able to hear ordinary conversation with each ear separately, the full distance of 20 feet. No candidate for promotion or re-examination can be considered to have sufficient acuteness of hearing, who is unable to hear words or numbers spoken in an ordinary conversational tone of voice, at a distance of 10 feet with each ear separately. The use of hearing aids by railroad employees engaged in train service is not recommended.

HERNIA

Hernia is incident to and not an accident in industrial occupation. True traumatic hernia is so rare as to be almost non-existent. Inguinal hernia is a defect due to a congenital, anatomical disorder, or to developmental weakness, or to both. Neither single nor repeated exertions or injuries cause inguinal hernia. The problem of aggravation of hernia will seldom be raised if pre-employment and periodical examinations are required.

The presence of an inguinal or femoral hernia should disqualify applicants for train service or laborious work. Small asymptomatic umbilical hernia is not disqualifying. Enlarged inguinal rings in the presence of a demonstrable sac or bulging should be grounds for disqualification in the pre-employment examination. On re-examination, the presence of an inguinal hernia should be noted and treatment advised if it is complete or producing symptoms. Such employees should be operated upon if their general condition permits; otherwise a properly fitted truss may be advised. The development of a hernia suggests the need for a thorough physical survey with particular attention to the individual's gastro-intestinal and urinary tract functions. The injection treatment of hernia is not recommended.

INJURED EMPLOYEE

In connection with this subject heading the following is quoted, simply as a matter of information, from the "Rules Governing Monthly Reports of Rail-

way Accidents" as issued by the Interstate Commerce Commission (effective on January 1, 1922):

"Accidents to be Reported.—A reportable accident is an accident arising from the operation of a railway that results in one or more of the following circumstances:

"(a)****

"(b)****

"(c) Injury to an employee sufficient to incapacitate him from performing his ordinary duties for more than three days in the aggregate during the 10 days immediately following the accident. This rule applies to employees on duty, and to those classed as not on duty, but does not apply to employees classed as passengers or trespassers.

"(d) Injury to a person other than an employee if the injury is sufficient, in the opinion of the reporting officer, to incapacitate the injured person from following his customary vocation or mode of life for a period of more than one day. This rule applies also to employees classed as passengers or trespassers."

MALARIA

The problem of malaria in railroad employees does not appear so serious or prevalent in 1950, due to the use of newer insecticides and methods of control and newer drugs for treatment. Employees who have contracted malaria should be under treatment and observation until there is reasonable assurance that no further attacks of malarial chills will occur.

MAN-FAILURE

After investigation it has been found that a very large percentage of train accidents was due to man-failure.

For the above reason the following recommendation, which was originated by the Committee on Disability and Rehabilitation and approved by the Association of American Railroads, was made:

"Whenever investigation of any train or train service accident indicates man-failure as a causative factor—such as disregard of signal indication, disregard of or misinterpretation of train orders or rules—and suggests an impaired physical condition as a contributing cause of the failure, a medical examination directed by the Company of the employee or employees so involved is recommended."

Other recommendations made:

(1) Periodic examinations of those whose age or previous condition would indicate that these examinations should be made.

(2) Re-examination of every employee in the train and engine service when he has been absent from work for any length of time and cause whatsoever.

MENTAL AND NERVOUS DISORDERS

No mental syndrome is caused directly by railroad work.

Disorders of the central nervous system are:

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Organic neurological diseases
Inflammatory disease of the brain and nervous system
Paralysis agitans
Choreas—all forms
Cerebral arteriosclerosis
Other organic neurological conditions
Traumatic psychoses and neuroses
Constitutional psychopathic state
Chronic alcoholism and drug addiction
All other diseases of the brain and nervous system

Employment of a veteran of military service having a discharge account of being a mental or psychiatric case should be postponed until a transcript of the medical history is secured in writing.

Employees with any mental disorder should not be permitted to remain in positions of responsibility, or where they may become hazardous to themselves or others. This even after apparent recovery.

The following should be disqualifying for any employee who has to do with the operation of trains:

Disorientation for time or place or persons, continued
Intense narcissism or phobias
Memory loss for recent events, prolonged and continuous
Ideas of reference
Fixed or repeated transient systematized delusions
Catatonic states
Paranoid ideas
Loss of insight and/or judgment, gradual
Moderately severe inability to adjust to reality
Emotionalism, severe, repeated
Chronic alcoholism or other intoxications with mental deterioration
Industrial and familial inadaptability due to any of the above conditions and ideas
Defects of personality—progressive
Paralyses and/or paraplegia
Marked euphoria and/or delusion of grandeur
Wanton violence and destructiveness
Tremulous, stammering, dysarthric, slobbery speech with loss of musculocutaneous sense
Moderately severe neurasthenia or hysteria, or anxiety or psychasthenia or hypochondria, which has not responded to one year's treatment
Epilepsy and epileptic equivalents
Hemiplegia, paraplegia and locomotor ataxia with mild residuals
All inflammatory diseases of brain and nervous systems with mild residuals
Paralysis agitans with beginning pill roller's tremor, mask facies with or without beginning mental changes
Choreiform syndrome any type, moderately severe, with or without psychio phenomena

Tic douloureux if persisting over six months and shown not to be amenable to treatment

Flaccid paralysis due to peripheral nerve disease or injury, affecting at least one limb

Cretinism, imbecility and middle class moronism

Migraine with no remission or short remission which have not responded to treatment for a year

Dereum's disease

Brain tumor

Syringomyelia

Subacute combined degeneration spinal cord

Amyotrophic degeneration spinal cord

Multiple sclerosis

Spinal cord tumor

Residuals of skull fracture

Herniated intervertebral disc with disabling signs

Once an employe is disqualified for service in the operation of trains due to his having developed any mental condition, said disqualification should be made permanent.

No employe who has been confined to a mental institution by court order should be permitted to return to any type of work until he has received his writ of adjudication. Until this is received he is a legal incompetent.

NARCOTIC HABITUES

Narcotic habits are not suitable for railroad service. On both pre-employment and periodic physical examinations the examining doctor should be particularly careful to observe multiple scars of hypodermic injections throughout the body surfaces. It is most common on the arms and thighs. Most of these habits over a period of years become mentally retarded, unstable, unreliable, and most of them acquire a method of obtaining funds to buy narcotics other than their normal income. The reason for stealing to obtain money to buy narcotics is due to the fact that they must take larger and larger doses of narcotics to get the same "bang" from the drug. It finally comes to the point where they are taking huge doses to get the same reaction that previously they obtained from taking a smaller dose. As Heroin and other narcotics cost about \$60.00 an ounce and addicts sometimes use this amount in one day, this is the reason why extra money must be obtained to buy drugs.

There are several methods of curing these individuals of their drug habit in both private and state and federal institutions, but it is known that many of these individuals take the "cure" only to be able to start on smaller doses again to get the same "bang." If a habitue really wants to get out of this habit and really means it he takes the cure "cold turkey." This treatment consists of locking himself in a room, throwing the key out the window, and actually going through the tortures of terrific muscle spasms and vomiting until he is relieved. When the "cure" is taken this way few return to the habit.

NEISSERIAN INFECTION (GONORRHEA)

The use of sulfa drugs in prophylaxis and treatment has largely given way to antibiotics, the most common of which seems to be penicillin.

Diagnosis should be definitely established, if possible, by microscopic examination and culture.

The patient should be observed periodically, at short intervals for the first two weeks, and several times during the next three months to confirm cure and to pick up possible complicating infections.

OBESITY

Individuals who are overweight are putting an extra amount of work on their important body functions which especially involve the heart and circulatory system with a tendency to increase blood pressure and extra work on liver and kidneys. When excessive weight is carried over a period of years, the above organs tend to become exhausted prematurely which diminishes the individuals' efficiency in carrying on their work.

The problem of obesity is best managed by advising people early in life as to what their normal weight should be and for them to regulate their diet so as to keep their weight within the normal variations. It is dangerous to attempt to control weight by the use of drugs unless under competent and medical supervision.

A Time Table for Reducing and Regulating Weight was adopted by the Section in 1935, which, if observed, serves as a good guide. All roads are welcome to use it.

It is recommended that a man who permits his weight to exceed by 50% average normal weights should be restricted from duty.

No one ever got fat from eating too little.

ONE EYE

Binocular vision is essential in those persons who have to judge distances. When a person has only one eye, depth perception is destroyed and the perspective becomes erroneous, and causes a hazard.

Engineers with one-eye potential should be limited to services which they can perform safely and satisfactorily.

PERIPHERAL NERVES

Incomplete and complete sections of peripheral nerves should be repaired only under ideal conditions. When the wound is clean and the patient is seen within six hour period, repair can be attempted as a hospital procedure. If the wound is at all questionable because of contamination or possible sloughing of the skin, the nerve repair should be postponed and done as a secondary procedure under ideal circumstances. The diagnosis of peripheral nerve injury should be made pre-operatively. The possibility should be in the mind of the examiner as soon as he notices the site of the wound. All motor and sensory functions of the nerve distal to the wound are carefully examined. In this way, nerve injuries associated with the other tissue injuries will not be missed.

PHYSICAL MEDICINE

Physical medicine consists of physical agents which are considered invaluable as an aid, not only in the treatment but also in the diagnosis of injured employees. This value is directly proportional to the earliest possible time it is instituted in the therapeutic program.

Heat, massage, and exercise are the procedures most easily obtained and the simplest to administer. The early application of elastic bandages for crushed extremities has been found to cut down the period of convalescence and to diminish the percentage of probable disability. These agents are also most valuable in overcoming circulatory disturbances and maintaining and developing function.

Heat may be given in the form of hot baths, hot dressings, or dry heat as may be indicated. The value of hot water treatment in any form lies in the fact that it is a form of moist heat and the chemical content of the water is immaterial. One form of wet heat, the arm or leg whirlpool, combines motion with heat and is valuable in the treatment of extremities.

Massage along with motion in the early stages of injury is particularly useful. The usefulness depends on the intelligent choice of the following: 1) superficial stroking; 2) deep stroking; 3) kneading; 4) friction. Each particular maneuver is used for a special purpose.

Exercise consists of alternate contractions and relaxation of muscle groups. Active exercise is the only measure that is known that will increase muscle strength. Passive exercise is used when healing is not complete and a range of motion instituted so as to prevent ankylosis. Forced motion is principally used to break up joint adhesions.

The term "therapeutic exercise" is given to those exercises used on extremities whose reflex nerve are intact.

"Muscle re-education" is that term given to those exercises used on extremities where the reflex nerve are impaired or broken.

Occupational therapy is of proven value by prescribing various types of work for bringing into use muscles and joints which need exercise or rehabilitation. One of the best forms of occupational therapy is the practical application of the therapy on the man at work on his own job.

PNEUMOCONIOSIS

The Committee has defined and described the condition of pneumoconiosis, or dust disease of the lungs, and mentioned silicosis and asbestosis, as forms of the disease most interesting to railroad surgeons. Anthracosis (coal dust) and siderosis (iron dust) are mentioned as not causing serious complications.

An entrance to service examination is recommended particularly in those occupations where unusual quantities of silica or asbestos dust have been encountered or are contemplated as a routine occupational exposure. Such entrance to service examinations should include a complete occupational history, a careful physical examination, and an x-ray examination of the lungs recorded on films, for diagnosis and further record.

It is further recommended that in periodic examinations of employees, with a history of working in noxious dust, who present symptoms suggestive of dust disease:

- 1) X-ray examination of the lungs should be done.
- 2) Change in employee's occupation should be advised or considered.

POISON IVY AND POISON OAK

Inquiries have been received from several lines as to the best method of caring for susceptible section workers and telephone and telegraph linemen who have come in contact with poison ivy or poison oak. The only prevention known appears to be the avoidance of contact with such growths.

trained dietician. Special diets on dining cars are not workable, hence not practicable.

Any special diet is the responsibility of the passenger and should be selected by him from the regular menu.

SPRAY PAINTING

Complaints of employees engaged in spray painting are apparently chiefly those of irritation of the skin, respiratory passages, and, occasionally, eyes.

There are a number of protective creams on the market, which can be applied to exposed skin areas before going on duty, that not only protect the skin from irritation, but render any paint that gets on the skin easily removable by soap and warm water.

When spraying in confined or improperly ventilated places, the employee should wear protective respirator. In some instances, in a very small confined space provided with only one opening for ventilation, a mask provided for supplying forced air from the outside is recommended.

Goggles with easily cleaned lenses should furnish adequate protection for the eyes.

SYPHILIS

Applicants for employment in the operation of trains and in dining car service should be rejected who have clinical evidence of syphilis or a positive blood. Blood tests should be taken routinely.

Periodic examinations of employees should include examination for active manifestation of syphilis.

All employees with primary or secondary syphilis should be removed temporarily from the service and receive treatment. Latent syphilitics should have a thorough physical examination, including spinal fluid tests, and treatment discussed.

Manifestation of cerebrospinal syphilis is an indication for retirement. Employees with locomotor ataxia should be placed in non-hazardous positions.

Arrested cases of neurosyphilitics should not be returned to unrestricted train service.

Persons receiving intensive treatment should be carefully reexamined later and the results of these treatments evaluated.

TETANUS

In wounds of a type where tetanus contamination is likely, prophylactic treatment may be given by one or more of the following methods: (1) in wounds grossly contaminated with street dirt, the use of tetanus antitoxin is generally considered advisable; (2) in individuals who have been previously immunized by tetanus toxoid, a booster dose of tetanus toxoid is indicated; (3) at the present time it appears that the antibiotics afford the individual adequate protection against tetanus in the average wound. The use of antibiotics as a preventative measure carries less danger of untoward reaction than does the use of tetanus antitoxin.

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Those who have come into contact with these toxic substances should immediately scrub the exposed parts with an abundant amount of soap and water so as to remove the poison before it has opportunity of penetrating the skin.

Note--Attention is called to the A.A.R. Manual of First Aid Instructions, 1951, which states under the heading Poison Oak and Poison Ivy: "When it is known that contact with poison ivy has taken place, vigorous scrubbing of the skin with abundant soap and hot water, within first hour or two after exposure may prevent any further trouble. The same treatment, if carried out within first twenty-four hours, often results in cure. In later cases, treatment should be given by a doctor."

If practicable, clothing should be changed carefully. Oils (resins) from poison ivy or poison oak may be on the clothing from same contact, and unnecessary further spread may be made.

POISONOUS SNAKE BITE

Bearing in mind the necessity of securing the best medical attention as soon as possible for administration of anti-venom serum, supportive and anti-shock therapy, it is urgent that certain first aid measures be started immediately, as follows:

1. Apply tourniquet a few inches above the bite (proximal to wound). This must be released for 5 seconds at intervals of 15 minutes.
2. If proper type of anti-venom serum is at hand, it should be administered at once in careful accordance with directions on the package.
3. Cross cut incisions entirely through skin about $\frac{1}{4}$ " deep and $\frac{1}{4}$ " to $\frac{1}{2}$ " in length, and apply suction. Suction should be continued for at least 20 minutes out of each hour for a period of 15 hours, and the patient should not be permitted to walk or exert himself in any way.

Alcoholic beverages are harmful in snake bites.

REPEATED INJURIES ("ACCIDENT PRONE")

It is well-known that certain employees repeatedly report to the Medical Department for treatment of injuries, many of which of course are of a minor nature; whereas other employees doing the same type of work, seldom, if ever, suffer an injury. Consideration should be given to the suggestion that the Chief Surgeon's Office keep a file of employees who have suffered personal injuries on duty, where treatment for such injuries has been given by the Medical Department. Where the record shows that any employee has suffered three or more injuries in one year, the attention of his employer could be called to the fact and his work habits investigated.

SICK PASSENGERS

Passengers who become ill on a train may obtain the services of a doctor, at their own expense, by requesting the Conductor to telegraph ahead to the nearest station for aid.

SPECIAL DIETS ON DINING CARS

Special diets are individualistic. They vary considerably and with the allergic types of individuals are extremely specific. Diabetic and nephritic diets are quantitative and qualitative, which require the supervision of a highly

TROPICAL DISEASES

In 1918 the Committee stated, "Tropical Diseases have probably been worked out to a better degree, three years after the World War in the Pacific, than they were a year ago. The vast majority of those men involved in the tropics have returned. They again have adjusted themselves to whatever treatment is necessary for them in this climate. One, of course, must be on the lookout for recurrences at any time."

TUBERCULOSIS

The incidence of tuberculosis is no greater in railroad employes than in others; in fact, statistics show it to be less prevalent than in employes of many other major industries. It is recognized that tuberculosis is a major health problem.

Attention is called to the possibility of tuberculosis in clerical groups of employes as in other types of employment, and it is recognized that where such employes in clerical groups as in others appear to be below standard they should be examined to determine their physical state, having in mind the possibility of a tuberculous infection.

It is recommended that an employe who has active tuberculosis, and manifests it in his sputum or by other accepted findings, should be relieved from duty, because of the danger of transmitting the disease to others and because the effort on the part of the employe to continue work may interfere with proper treatment and recovery.

It is recommended that such employe be permitted to resume work only when, after thorough examination, he is found to be so far recovered that there are no clinical or x-ray signs of active pulmonary disease and the sputum is consistently free from tubercle bacilli, the case classed as arrested, and the sufferer deemed to be non-infectious to others.

It is further recommended that the tuberculous individual, after returning to service, should be reexamined at definite intervals, as a precaution against progression of the disease and to protect the health of other individuals.

It is suggested that all active manifestations of tuberculous disease be in abeyance one year before a railroad employe be considered for reemployment in selected occupations, assuming that no other physical disqualifying conditions are present.

TYPHOID FEVER AND PARATYPHOID FEVER

While typhoid fever has largely been controlled in the United States through the control of water and food supplies, small scattered epidemics continue to appear, particularly in the summer months. (Public Health Reports 65; 1171 Sept. 8, 1950.)

Paratyphoid fever and other related enteric diseases (*Salmonella* infections) are still quite common and may appear in epidemic form.

The Committee agrees that individuals suffering from these enteric diseases should not be employed as food handlers during the period of illness nor before repeated negative stool and urine cultures are obtained.

Family contacts of such cases should not be employed as food handlers during the period of contact nor before repeated negative stool and urine cultures

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(A number of comments and suggestions were offered by many of those present in general and substantially off-the-record discussions of the various subjects referred to in the preceding Report.)

THE CHAIRMAN: Thank you, Dr. Stack, for that very fine report. As you will note, gentlemen, a number of Advisory Members were also assigned to this Committee to facilitate the handling of this report. We confined ourselves pretty much to the Chicago area because there were a number of meetings, and we didn't feel it was well to call men in from different parts of the country when we had the rather generous help from Chicago. They spent many evening from five o'clock in the evening until ten going over all the transactions, and this is more or less of a brief abstract.

I want to thank Dr. Stack and his committee for the fine work and also I was going to say Dr. Dewhurst. We have almost made a doctor out of him because he has attended all of these meetings, and that is what has made this report. We will have comments now that have been offered here, and the committee next year can make supplements or changes in this as they see fit.

Are there any other comments on this report?

Dr. K. E. Down (Chief Medical Officer, Canadian National Railways): I just want to say it is a very excellent report, Mr. Chairman. That is the bible that we can follow pretty well in the future as far as disability and rehabilitation is concerned. I think this was the committee that Dr. Garner used to handle so very well, and it is an excellent report. I think Dr. Stack and his committee deserve the very highest commendation.

THE CHAIRMAN: Will you make a motion to that effect?

Dr. Down: I certainly will.

(The motion was duly seconded and carried.)

THE CHAIRMAN: All in favor of accepting the Report of the Committee on Disability and Rehabilitation as presented will say "aye." Contrary? Accepted.

Next will be Item No. 6, "Progress Report on Activities of Joint Committee on Railway Sanitation," by Dr. Graham.

Dr. R. M. GRAHAM (Director, Department of Sanitation and Surgery, The Pullman Company): Gentlemen, as many of you know, Dr. Hursh and I have been members on this committee representing the Medical and Surgical Section for some years. We are sorry to lose Dr. Nance who has resigned from railroad service. Dr. Clayton has recently been appointed to take his place.

(Dr. Graham then read his report as follows:—)

Report to Medical and Surgical Section on A.A.R. Sanitation Research Project

Representatives of the Medical and Surgical Section on the Joint Committee on Railway Sanitation

Dr. R. M. Graham, Director, Department of Sanitation and Surgery, The Pullman Company, Chicago, Illinois.

Dr. M. B. Clayton, Chief Surgeon, Southern Railway System, Washington, D. C.

Dr. A. M. W. Hursh, Chief Medical Examiner, Pennsylvania Railroad, Philadelphia, Pennsylvania.

By Dr. R. M. Graham,
Director, Department of Sanitation and Surgery,
The Pullman Company

Many of you will recall the paper by Dr. Wolman and Mr. Clark on "Human Wastes and the Railroad Passenger Car" presented at the 1948 meeting of the Section and reported in the Proceedings, and also their paper presented at Edgewater Park last year on "Some Problems in General Sanitation in Railroad Transportation."

The A.A.R. Sanitation Research Project, to study the problems of sewage wastes from railway cars, undertaken under the direction of the Joint Committee on Railway Sanitation, on which committee are three members of the Medical & Surgical Section, was started in 1946 and completed last Fall.

There have been eight Technical Reports prepared by the Project personnel from their observations, studies and experiments. All, except one relating to the numerous patents on devices for handling the problem, have been published for the benefit of the Railroads and associated interests, and I am sure that many of you have already received copies of these reports, which relate to the subjects of toilet requirements, usage, and disposal of toilet wastes.

A summary report of the Project Director and the Committee on Railway Sanitation of the findings and conclusions has been made to the General Committee of the A.A.R.

A summary of a few of the findings and conclusions reached will be of interest to you.

Although many devices were tried, only one seems to have some merit sufficient to warrant further study. This is a rubber sphincter valve in the hopper chute which could be used to temporarily withhold discharge of toilet wastes at certain desired locations. There are still a number of unsolved questions relating to its practical usefulness, which require further study and trial.

No evidence was found that sewage wastes from railroad cars have caused outbreaks or epidemics of communicable disease, nor was evidence developed showing known harmful connection between such waste and disease.

The total amount of fecal solids discharged to the railroad right-of-way from passenger trains is exceedingly small, comparatively; and was estimated from the findings of the Project, to average for the total of all passengers in the United States less than one ounce per yard of track per year.

Bacteriological studies, as reported in Technical Report No. 6, on the presence of indicator coliform bacteria in railroad ballast, water run-off from roadbeds, and in the atmosphere of fast moving trains, showed little variation from other environments that are not considered generally to be injurious to health.

No evidence was developed to justify the contention that toilet wastes should be retained on cars; with the exception that toilets should not be flushed at spots directly connected with the furnishing of potable water supplies.

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With regard to potential hazards from track pollution, may I quote from Dr. K. F. Maxey's epidemiological study, as reported in Technical Report No. 2 of Nov. 1946. "In view of these considerations, there appears to be good reason for modifying the original hypothesis and concept of railway sanitation which trace their origin to it. At times and in particular places the disposal of sewage has been improper in relation to environment and persons and, therefore constituted a nuisance. This has not created a hazard which can be measured in terms of increased incidence of enteric disease. Facts now available support the conclusion that this practice has been relatively unimportant in comparison with many other factors in the environment which are responsible for the maintenance and dissemination of enteric infection and disease in human communities under conditions which have existed in the United States."

Dr. Wolman brought to your attention in the meeting last year an outline of major problems in railway sanitation. I think it is the duty of all of us who are concerned with this phase of railroad operations to give serious consideration to practicable methods that may improve the sanitary as well as other safety features of such operations.

As noted in 1951 report of the Committee on Disability and Rehabilitation under the subject of "Food Handlers," the U. S. Public Health Service is contemplating the issue shortly of handbooks covering sanitation features of Dining Cars in Operation, Railroad Passenger Car Construction, and Railroad Servicing Areas. In this matter, the Service has called on member railroads and the Joint Committee on Railway Sanitation for criticism and advice. It is contemplated that such handbooks will cover in some detail various subjects covered in the Interstate Quarantine Regulations, and will largely supplant the Sanitation Manual for Land and Air Conveyances Operating in Interstate Traffic, published by the U. S. Public Health Service in January 1943.

(There followed a brief, off-the-record discussion in connection with this report.)

THE CHAIRMAN: Gentlemen, we will now go on to Item No. 7 on the Program, the Report of the Committee on Nominations, which will be presented by Dr. Davis, Chairman of that Committee.

(Report of the Committee on Nominations, the ballot for Members of Committee of Direction, and election of Members of Committee of Direction are included in the rear of these Proceedings.)

(The meeting recessed at 11:40 o'clock.)

ANNUAL INFORMAL LUNCHEON

Drake Hotel, 12:30 P.M., Monday, April 2

At the Annual Informal Luncheon, Dr. Arthur R. Metz, Chairman, Medical and Surgical Section, introduced the Guest Speaker, Mr. John P. Kiley, President, Chicago, Milwaukee, St. Paul and Pacific Railroad.

THE CHAIRMAN: I once heard a story about a railroad president who acted very high and mighty. He ordered a private elevator installed to his

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offices, and no one else was allowed to use it, on pain of immediate dismissal. An employe of the railroad who once had the nerve to say hello to him on the street next day received a curt note from the president's office to the effect that in the future he was to refrain from taking such liberties.

It is my privilege now to present to you a man who isn't like that at all. You know, we doctors don't make any money for the railroads, but every time I have occasion to go to this man's office, he greets me in a very friendly manner. He calls me by my first name and I call him by his. We get along very well indeed.

This friendliness, coupled with plenty of ability and drive, are what have put this man where he is today. His career is another example of how a man can start at the bottom here in America and by applying himself, rise right to the top. He has spent his entire working life on The Milwaukee Road. A native of Chicago, he worked as a rodman and instrument-man for the Road during summer vacations while a student at Villanova College, Villanova, Pennsylvania. Upon his graduation from Villanova in 1915 with a degree in civil engineering, he joined the engineering department on a full time basis, doing valuation work.

World War I broke into his career. Entering the army as a private, he came out of service a second lieutenant of engineers, and immediately went back to his job with the Milwaukee. He continued to do valuation work for a time, then was transferred to the finance department as engineering assistant. Later, he shifted to the operating department and continued in that department until he was made auditor of investment and joint facility accounts.

In 1942, he was again back in the operating department as assistant to the general manager, Lines East. A few months later he became assistant general manager, Lines East. After three years in this post, he went to Seattle where he spent two years; one year as assistant to the president, and one year as vice-president. He returned to Chicago in June, 1948, to take over the job as vice president in charge of operations. On September 1st last year, he assumed his present duties.

As you can see, he has a broad knowledge of railroading and I think our railroad is fortunate in having him in his present position. Gentlemen, it gives me great pleasure to introduce to you Mr. John Kiley, president of the Milwaukee Road. John, the floor is yours. . . . (Applause)

MR. KILEY: Thank you, Art. Mr. Chairman, distinguished guests, ladies and gentlemen. . . .

Railroads move a lot faster than in years gone by . . . we've cut hours off schedules in many cases . . . on some sections of line we run trains at as little as five-minute intervals . . . the entire railroad operation nowadays is based on speed and efficiency . . . it has to be, if we are to stay in business.

In assigning the reasons for this increased efficiency, we are very prone to emphasize the mechanical improvements. Diesel locomotives! Heavier rail! Better roadbeds! Modern yards and terminals! Much improved communications systems! These are the things we're apt to mention.

I wonder if we aren't forgetting one all-important element—*better manpower*. Casey Jones may have been a mighty good engiener by standards

of his day, but I wonder how he would have stood up in the cab of a big diesel hauling a modern passenger train. For all we know, the famous Casey might have been color blind . . . he might have been subject to epileptic fits . . . at any rate, he was taking risks on his last night at the throttle that suggest his judgment wasn't all it should be.

In every department of modern railroads, and particularly in the operating department, physically fit, well-balanced men are an absolute necessity. Whenever a tragedy occurs which seems to involve a human failure, we are sharply reminded of this fact. And this is where you men who are sitting here in this room come into the picture. I sincerely doubt whether our highly organized . . . highly coordinated modern railroads . . . which demand efficiency and teamwork from so many different individuals . . . could be properly run without the careful medical supervision of their personnel. Yes, contribution is very great. Because much of your work is done behind the scenes, so to speak, you may sometimes feel it isn't sufficiently appreciated. You may feel like the man who never got credit for anything. No matter what he did, someone else always got the praise. He felt so miserable that he finally decided to take his problem to the Lord.

He had never been much of a praying man, and he felt self-conscious about getting down on his knees in his home where someone might see him. So he took a walk into the country, looking for a lonely place where he might address a good, strong petition to the Lord without being interrupted.

At length he came to a field where he was absolutely alone. There wasn't a person or a house in sight. He knelt down, glanced cautiously about, held out his hands in an attitude of supplication and began to pray.

Just at that moment a bird flew over him, and in passing performed that certain rite common to all creatures. It was a bull's eye—smack on his outstretched hand. The man looked at his hand, then gazed up at the sky in anguish. "See what I mean, Lord? For some people they sing!"

Just in case you feel like that man, I'm going to sing your praises. It is an easy thing to do because the records point out what you have contributed to safer railroading.

Between 1918 and 1949, the rate of fatal accidents to employees on all Class I railroads decreased 91 per cent, reportable injuries declined 87 per cent . . . and the casualty rate declined 76 per cent. In the case of our own railroad for the same period, fatalities dropped 89 per cent . . . reportable injuries 91 per cent . . . and the casualty rate, 80 per cent.

This is a magnificent showing and a big share of the credit for it belongs to the surgical departments of our railroads. I recently read a statement that five times as many conductors were killed on duty in 1890 as in 1940. Due to your efforts along with those of the safety departments, great strides have been made toward making railroading a safer occupation.

Perhaps even more significant than the decrease in fatalities is the tremendous reduction in man-hours lost due to injury. Literally billions of man-hours have been saved through proper first aid, proper and prompt hospitalization and the scientific care given injured employees, in case of accident. Better work habits, by preventing injury have, of course, also played their part.

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In the old days on our railroad, the responsibility for handling an injury case fell upon the division superintendent and the claim department. If they decided medical care was needed, any local doctor who happened to be available was called in. Under the present system on our railroad an injured employe is immediately sent or taken to the nearest designated company surgeon and hospital. He is given a complete physical examination and X-rayed for possible bone injuries. This procedure is followed no matter how slight the injury appears. In the more severe cases, surgical or corrective measures are taken to reduce disabilities. The injured employe continues under the jurisdiction of the surgical department until he has recovered and is ready to return to duty.

We believe this system is not only far better from the railroad's point of view, but from that of the employe as well. He is insured the best possible medical and surgical care from the very start, and is able to resume his work and earning power at the earliest possible time. Without doubt, in more than a few cases, this procedure has prevented permanent disabilities.

When I think of the old days, I sometimes wonder how the railroads got along without you gentlemen. Before medical surgical departments were organized, almost any two-legged man not obviously dying on his feet might be hired for an operating job. There were no examinations to find out whether he was color blind ... had a bad heart ... whether his hearing was as good as it should be ... or whether he was suffering from some of the many other diseases the flesh is heir to.

It was a red-letter day on our railroad when physical examinations were instituted in 1915 by Dr. Albert I. Bouffleur, our first chief surgeon. His name will be familiar to you as that of a leading Chicago surgeon and an outstanding clinical professor of surgery at Rush Medical College. He was succeeded as chief surgeon by Dr. B. F. Lounsbury, and upon the latter's death in 1927, the responsibility of this important office fell on the shoulders of my friend, Art Metz.

In Art's office are a number of filing cabinets standing in a neat row which always gives me a thrill of assurance whenever I see them. The cabinets contain the records of periodic physical examinations of some 15,000 of our people whose work is in one way or another directly concerned with the running of trains. Those cabinets tell me that we are doing everything we can to guard against human failures in our daily operations. I know I speak for all of our administrative officers when I tell you that it's a mighty good feeling to have.

The Medical and Surgical Section of the Association of American Railroads was organized in December, 1920, and the first general meeting was held in June of the following year. In the past 30 years the medical and surgical department of the railroads has been greatly expanded. In our own case, our medical and surgical organization includes 750 doctors located at various points along our lines. Throughout the country, no less than 15,000 doctors give part of their time to the care of railroad employes as members of the medical and surgical staffs of all Class I railroads.

The accomplishments of your organization are so numerous that it would require far more time than I have at my disposal to list them all. Here is just one example: Back in 1925, an eastern railroad arranged for the

physical examination of 5,393 of its employees. Officials of the railroad were startled to find that 51 per cent of these employees had disabilities serious enough, if not checked, to shorten their economic usefulness by from 5 to 15 years. However, by following the advice of the railroad's medical department, 89 per cent—practically all—of those with disabilities were cured of them and became physically fit.

Examples such as this could be multiplied many times, perhaps out of your own experience. I have never had any medical training. I am an engineer by education, and my particular bent took me into fields far removed from medicine. But I can see results, and judging from results, your work has been of immense usefulness to the railroads, to their employees and to society. Through careful screening of applicants for railroad train service jobs, and periodic checkups of the men after they are in service, the average physical condition of these employees has certainly been raised.

Sir William Osler, English physician of pleasant memory, once said of the human race: "There are no straight backs, no symmetrical faces, many wry noses and no even legs. We are a crooked and perverse generation." With this to work with, I should say that you gentlemen have done pretty well. . . .

Sir William also is credited with having made the remark, "There are only two sorts of doctors, those who practice with their brains and those who practice with their tongues." You have always been pretty modest about your work and its importance to the railroads and to the community, so I guess it follows that you've been doing your practicing with your brains. . . .

You are way ahead of me on the facts of medical history, but you may be interested in the impression a layman gets when he reads the annals of your profession. Everybody knows about Lister and Pasteur and Harvey, but there have been many other courageous innovators whose names are not so well known to laymen. I happened to pick up a book the other day about the history of surgery, and I came across many names that were new to me. For example, Andreas Vesalius, who I believe is recognized as the father of anatomy. As I understand it, his great work on anatomy completely transformed the practice of surgery.

Another name I recall is that of Ambroise Pare, who believed the practice of burning a gun-shot wound with a hot iron to keep it "clean," as they did in his time, was cruel. In treating certain wounded soldiers, he tried a mild pack made of eggs and herbs, and that night couldn't sleep because he felt he had betrayed his profession. He was happy next day to find that the wounds he had treated in his own way were clean while wounds which had been burned were festered and inflamed.

What these men and others accomplished with little or no knowledge of physiology and none of antiseptics reflects enormous credit on the medical profession. The thing that strikes me forcibly is that they had two outstanding traits—human kindness and an intense desire to advance the cause of medicine.

These characteristics are to be found in your organization, too. Not content with applying the most modern accepted methods of surgical practice

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and healing, I know that you have a number of committees constantly at work investigating new procedures and new fields in which you feel you may be of service.

I am informed that you have before you for approval at this meeting, a report dealing with the most up-to-date methods of treating a large number of conditions and diseases. The subjects, I understand, range all the way from the common cold and the correct treatment for cinder abrasions to amputations . . . allergies . . . burns . . . alcoholism . . . diabetes . . . eye and ear defects . . . hernia . . . tropical diseases and many others. I note also that nervous and mental ailments as they relate to railroad work are carefully examined and that due attention is given to the all-important problem of man-failure in connection with train accidents. To me, as a layman, this all means that your organization is on its toes . . . giving your railroads the benefit of the most modern thought in the fields of medicine and surgery. For my part, I am happy to rest this important phase of railroading in your capable hands.

I do not feel I should let this occasion go by without paying a well-deserved tribute to an able and conscientious man who has served our railroad faithfully and well for nearly two score years. I refer to our good friend, Art Metz.

Art Metz is a Hoosier. He was born on a farm, and he still has a lot of the farmer's ideas about work. In fact, I have a suspicion that he thinks a man is loafing unless his day's work extends from the first glimmer of dawn until after dark.

He worked his way through a five-year course at the University of Indiana and then went to Rush Medical College for two years, receiving his medical degree in 1911. He spent a year and a half in Cincinnati General Hospital as an interne, and in 1913 became assistant to Dr. Lounsbury, who was then chief surgeon of our railroad. His first salary was \$75 a month. . . . I wonder whether his present salary buys any more. . . .

Art spent 18 months in the army in World War I, a year of that time in France. He returned to his job with the Milwaukee Road, but somebody cutered him away on a big game hunt in Africa. He spent six months there, returning with a box car load of trophies, some of which you can see on the walls of his office. He'll talk about that hunting trip, too, at the drop of a bat. . . .

After Dr. Lounsbury's death, he became our chief surgeon. While ably serving in that capacity, he has found time for many other activities. He is associate professor of surgery at Northwestern University and any morning at 7:30 you'll find him at Wesley Memorial Hospital, where he carries on a full operating schedule. In his spare time—you might ask him where he finds it—he is a yachtsman. With his R boat "Olive" he was a strong contender for the Lipton Cup, and in 1937 he was Commodore of the Chicago Yacht Club. Incidentally, he is a bachelor, never smokes and never eats lunch. Maybe he's got something there, for as you no doubt know, he is the author of "The Time Table for Reducing" which a number of other railroads and the AAR have adopted.

I always enjoy chatting with Art because of his kindly philosophy. He practices what he preaches, too. He treats a track laborer with the same consideration that he treats our highest administrative officers.

Through his hard work, kindness, wise counsel and high professional skill, Dr. Metz has made an outstanding contribution to our own medical and surgical department and to the cause of railroad medicine generally. He has served your organization faithfully and well. Under his guidance as your chairman and also as chairman of your committee of direction from 1941 to 1946, and also during the year just past, the Medical and Surgical Section has made substantial progress.

I know you join with me and his many, many other friends on our railroad in tendering Dr. Metz our deepest thanks for his fine service.

SECOND SESSION

Monday, Afternoon, April 2, 1951

The meeting reconvened at 2:00 o'clock at the Drake Hotel, Chairman Arthur R. Metz, presiding.

THE CHAIRMAN: The meeting will come to order.

The next item on the program is the proposed revision of "Regulations and Requirements Governing Physical Examinations, including Sight, Color Sense and Hearing Tests, for Entrance to Service, Promotion, Periodic and Special Examinations, with Method of Conduction," as drafted by the Committee on Developments Resulting from Physical Examinations. Dr. Bennett, as Chairman of that Committee, will present the report.

DR. BENNETT: Mr. Chairman, Gentlemen, I might state before we go through this report that the Committee certainly contributed a great deal of help and suggestions as did other Chief Surgeons in the drafting of this proposed revision. We originally got it together in a mimeographed form, of which there were about 30 to 40 pages, and in that we included everything that was in the old regulations. To that we added all the suggestions, all the things which we thought might be of value. Then with the whole committee going over this total mass of material, we struck out what we thought was not applicable, and left in what we thought was applicable.

Of course, as you know, these regulations are not binding to you. They are only as suggestions, and you can use them as you see fit, but it is certainly fine to have down in black and white somewhere what the Medical and Surgical Section of the Association of American Railroads considers to be reasonable regulations for physical examinations having to do with pre-employment, periodic, promotion and special examinations.

(Dr. Bennett then read through the proposed revision of Circular No. MAS-216, as follows.)

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(Superseding Cir. No. M&S-216 Dated May 31, 1939)

ASSOCIATION OF AMERICAN RAILROADS
MEDICAL AND SURGICAL SECTION

REPORT OF COMMITTEE ON DEVELOPMENTS
RESULTING FROM PHYSICAL EXAMINATIONS

Committee Members

Dr. R. J. Bennett, Jr. (Chairman), Chief Surgeon, Elgin, Joliet & Eastern Railway.
Dr. J. J. Brandabur, Chief Medical Examiner, Chesapeake & Ohio Railway.
Dr. B. I. Derauf, Chief Surgeon, Northern Pacific Railway.
Dr. O. H. Horrall, Chief Surgeon, Chicago, Burlington & Quincy Railroad.
Dr. E. C. Walden, Superintendent and Medical Director, Relief Department, Atlantic Coast Line Railroad.
Dr. R. S. Westling, Chief Surgeon, Chicago & Eastern Illinois Railroad.

Advisory Members

Dr. R. M. Graham, Director, Department of Sanitation & Surgery, The Pullman Company.
Dr. C. C. Guy, Chief of Surgery, Chicago Hospital, Illinois Central Railroad.
Dr. R. Housholder, Assistant Chief Surgeon (Lines East), Chicago, Milwaukee, St. Paul & Pacific Railroad.
Dr. W. W. Leake, Chief Surgeon, Illinois Central System.
Dr. J. K. Stack, Chief Surgeon, Chicago & North Western Railway.
Dr. A. R. Metz (ex-officio), Chief Surgeon (Lines East), Chicago, Milwaukee, St. Paul & Pacific Railroad.

Chicago 5, Ill., April 2, 1951

TO THE MEDICAL AND SURGICAL SECTION:

In accordance with action taken by the Committee of Direction, your Committee on Developments Resulting from Physical Examinations met in Chicago, Illinois, on January 6th, 1951, to draft a revision of Circular No. M&S-216, dated May 31, 1939, containing "Regulations and Requirements Governing Physical Examinations, Including Sight, Color Sense and Hearing Tests, for Entrance to Service, Promotion, Periodic and Special Examinations with Method of Conduction."

The "Regulations and Requirements" referred to were originally approved in 1925 and Operating Division Circular D-1-60 of February 25th, 1926 issued to cover. Under date of May 31, 1939, and as a result of experience arising from the application of the standards referred to and recommendations received as to changes therein, Circular No. M&S-216 was issued on behalf of the Association and contained the recommended "Regulations and Requirements" as revised at that time.

In light of further study of these recommendations and comments received from time to time from members of the Medical and Surgical Section, it was deemed desirable that Circular No. M&S-216 now be revised to bring the recommendations as up to date as possible. Included herein,

accordingly, are the proposed, revised "Regulations and Requirements Governing Physical Examinations, etc.," as approved by the Committee of Direction, Medical and Surgical Section, and this Report is submitted for consideration and discussion by the general assembly in session at the Annual Meeting of the Section in Chicago, Illinois, April 2nd, 1951. It is pointed out that this revision has yet to be placed before the General Committee, Operating-Transportation Division, of the A.A.R., for review and approval by that Committee before it can be considered as "final" and be made available for general distribution.

Respectfully submitted,

COMMITTEE ON DEVELOPMENTS RESULTING FROM
PHYSICAL EXAMINATIONS.

R. J. BENNETT, JR., M.D., Chairman

**Regulations and Requirements Governing Physical Examinations,
Including Sight, Color Sense and Hearing Tests, for Entrance
to Service, Promotion, Periodic and Special Examinations,
With Method of Conduction.**

GENERAL RULES

1. Applicants for employment in connection with the handling of engines, trains, or marine equipment as enumerated below, and also applicants for such other positions as may be designated from time to time by the railroad management, must pass a satisfactory physical examination before entering service, including an examination of sight and hearing. Applicants for positions in train service, and all other employees who, by reason of their occupation, are required to interpret color signals, must also pass a satisfactory examination on colors.*

Class A. Enginemen, Firemen, Motormen, Motormen's Helpers, Conductors, Train Flagmen, Train Baggage-men, Switchmen, Brakemen, Train Porters and all others who have any duties in connection with the operation of trains.

Class B. Signal Repairmen, Lampmen (Signal), Yardmasters, Carpenters on line work, Hostlers, Station Baggage-men, Railroad Crossing Watchmen, Bridge Watchmen, Wreck Foremen, Track Foremen, Messengers whose duties involve danger from moving trains, Chauffeurs, Derrick Engineers, Crane Operators, Train Dispatchers, Switch Tenders, Interlocker Levermen, Telegraph Operators, Student Operators and all other employees whose duties may involve the reading or display of signals in connection with the operation of trains. Marine Service—Captains.

*Proper records of all examinations should be maintained. (To prevent substitution the applicant must sign his name before the examining surgeon, who will compare such signature with the previously signed application made by the applicant before the employing officer. The data in the application form can also be made a check by questioning the applicant as to age, date of birth, last occupation, etc.)

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Mates, Pilots, Quartermasters, Bridge Foremen, Bridgemen, Bridge Motormen, and Engineers, Engineers and Firemen and others whose duties may involve navigation.

Class C. Car and Engine Inspectors, Ashpitmen, Air Brake and Steam Heat Inspectors, Weighmasters, Car Repairmen, Street Crossing Watchmen, Police Lieutenants, Patrolmen, Yard Clerks, Station Agents, Clerks to Station Agents, Baggage Agents, Ticket Examiners, Ushers and Telegraph Repairmen.

2. Examinations and re-examinations may be ordered at any time by proper authority.

All entrance-to-service employees should have a laboratory blood test for syphilis.

All employees entering railroad service should have pre-employment examinations.

3. Physical examinations shall not be made immediately following subjection to unusual fatigue.

4. Employees engaged in engine, train or signal service including train dispatchers and such others as may be designated from time to time by the railroad management, must pass a satisfactory physical examination or re-examination, including an examination of sight and hearing (and also an examination on colors if the employees are required to read signals) at least every two years or at more frequent intervals if required by law or otherwise. It is recommended that such employees should be re-examined every year from 50 to 55 and every six (6) months after 55.

5. Before an employee is permanently relieved from his regular duty or his occupation changed as a result of periodical examination made by the Examining Physician, his case shall be reviewed by the Chief Medical Officer or his representative whose decision shall be final unless other arrangements are made.

6. Employees mentioned in Rule 1 who have physical defects that may tend toward sudden incapacity, shall be examined at such intervals as may be determined by the Chief Medical Officer.

7. All employees mentioned in Rule 1, who upon examination for promotion or when periodically examined, are found to have a blood pressure of over 175 and less than 200 systolic, with a diastolic above 100 and below 120 shall be kept under observation. It is recommended that employees in the above classification with systolic blood pressure of 200 or over or a diastolic of 120 or over be held out of service pending further investigation, and should be returned to service only with the approval of the properly designated Medical Officer.

8. Employees who have been disabled by reason of accident or disease which predisposes them to sudden incapacity, or whose sight, color sense or hearing may have thereby become affected, must pass a satisfactory examination before resuming duty.

An employee with coronary occlusion should be removed from service until he presents satisfactory evidence of recovery without residual damage.

All employees, except clerks, who have been injured off duty or who have been absent on account of sickness for over thirty (30) days should

be re-examined before resuming duty. The employee should be requested to furnish the railroad examiner with a satisfactory medical report from his attending doctor covering his disability.

9. Employees promoted to any of the positions covered by Rule 4 are required to undergo a physical examination, including sight and hearing; and in addition, such employees who by reason of their occupation are required to interpret color signals must also pass a satisfactory examination on colors.

When the physical examination of an applicant for promotion gives evidence of syphilis a confirmatory laboratory test shall be made. Findings should be handled as indicated.

10. Applicants for employment in positions requiring examination of sight, color sense and hearing, should first undergo this examination and in case of failure, the physical examination need not be continued. Employees undergoing periodical re-examinations should be given complete physical examination notwithstanding failure of sight, color sense or hearing.

11. When employees re-examined for promotion, periodically or by special examination, are found to have any disqualifying defects, a full report shall be made to officer to whom the examiner reports.

12. In order to prevent undue hardship to an employee in service, and recognizing the increased value of such employee because of his experience and familiarity with duties to be performed, the causes for rejection as hereinafter set forth, shall not apply in re-examination, except insofar as the disabilities found on re-examination are such as to interfere with the proper performance of his duties, or with the safety of himself or others.

13. The standards as recommended are minimum but if any member has in effect higher standards than shown herein, it is recommended that such higher standards be maintained.

Rules Governing Examinations of Sight, Color Sense and Hearing

The following rules and instructions apply to applicants for employment and to all employees who are required to undergo sight, color sense and hearing examinations as outlined in preceding general rules.

1. All examinations of sight, color sense and hearing shall be made by physicians.
2. Examinations must develop:
 - (a) Sufficient acuteness of vision to see clearly the prescribed visible signals.
 - (b) Ability to distinguish colors accurately and promptly.
 - (c) Ability to hear distinctly.
3. Employees who are defective in color perception must not be employed in positions that require them to use signals or to determine the color of signals.
4. Employees who have defects in vision that can not be corrected with glasses to meet prescribed standard, and employees who are defective in hearing must not be employed in positions where their defects will prevent the efficient and safe performance of their duties.

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5. Employees whose vision requires the use of glasses to meet the standard and whose duties necessitate the reading of signal indications must, while on duty, wear such glasses. Employees requiring glasses for distant vision must have with them while on duty two pairs of the required glasses. Where glasses are required for both distant vision and reading, two pairs of distant spectacles and one pair of reading glasses or two pairs of bifocal spectacles must be carried. Where glasses are necessary for reading only, one pair of glasses (any type) will be satisfactory, but if of the nose glass type they must be attached to the person by proper guard. The employee must be examined with each pair of glasses.

Goggles worn with corrective lenses must be of the rigid type frame.

An employee whose vision in one eye falls below the required standard (for example, loss of vision in one eye) shall have a special examination by the company oculist and the management shall then determine whether the employee can be provided with employment where his services will not produce an extra hazardous condition.

ACUTENESS OF VISION

Method of Testing. All visual examinations shall be made with standard test type. Place the candidate to be examined twenty feet from the test cards, cover one of his eyes with a card, avoiding pressure on the eyeball, and direct him to read the letters on certain lines as shown by the examiner. If he reads the letters on the line marked twenty, it indicates normal vision. If he can not read the letters on the line marked twenty, direct him to read the lines above twenty successively until a line is found which he can read.

Record in fractions the acuteness of vision as determined, the numerator being 20 (the distance in feet at which the examinee is placed) and the denominator the line read.

Mistakes of not more than three letters on the 20/20 line, two letters on the 20/20 line and one letter on the 20/10 line will be considered as satisfactory reading, the examiner indicating by +3, +2 or +1, after the denominator, the numbers of letters missed. In examining for visual perception, the examiner should use every means to prevent applicants from memorizing the letters. This may be done by varying the order in which the lines are read, or by asking the applicants to read certain lines from right to left instead of from left to right.

READING CARD TESTS

Direct the candidate to read certain words, sentences or figures from the standard American Railway Association reading test card, with each eye separately, and record the smallest sizes of print read correctly at the ordinary distance of from 14 to 18 inches. The applicant should be able to read the print in paragraph No. 3 of the standard card to pass the test satisfactorily.

Equipment. A simple apparatus which prevents memorizing of the letters of the cards and by its lighting arrangement more clearly simulates bright

daylight, thus permitting its use under all circumstances, and which has ease of operation, together with a low cost, and arranged so that the cards are not soiled by handling, is desirable.

Any generally accepted method of testing the acuteness of vision will be satisfactory.

ACUTENESS OF VISION—REQUISITES

Class A. Enginemen, Firemen, Motormen, Motormen's Helpers, Conductors, Train Flagmen, Train Baggage-men, Switchmen, Brakemen, Train Porters and all others who have any duties in connection with the operation of trains.

Entrance to Service	Promotion	Re-Examination of those in the service
20/20 in each eye tested separately, without glasses, and with binocular single vision.	20/20 in one eye and not less than 20/30 in the other, with or without glasses, and with binocular single vision.	20/30 in one eye and not less than 20/40 in the other, with or without glasses, and with binocular single vision.
For near vision—read print in paragraph No. 3 of A.A.R. Standard Reading Card, without glasses.	For near vision—read print in paragraph No. 3 of A.A.R. Standard Reading Card, with or without glasses.	For near vision—read print in paragraph No. 3 of A.A.R. Standard Reading Card, with or without glasses.

If an employe in Class A. on examination for promotion or on re-examination is found to have a vision of 20/70 or less in each eye, without glasses, even though his vision can be brought up to the standard above set forth, by glasses, he must be examined by an oculist designated by the company, for recommendations as to whether his vision will interfere with the performance of his duties or with the safety of himself or others.

Class B. Signal Repairmen, Lampmen (Signal), Yardmasters, Carpenters on line work, Hostlers, Station Baggage-men, Railroad Crossing Watchmen, Bridge Watchmen, Wreck Foremen, Track Foremen, Messenger whose duties involve danger from moving trains, Chauffeurs, Derrick Engineers, Crane Operators, Train Dispatchers, Switch Tenders, Interlocker Levermen, Telegraph Operators, Student Operators and all other employes whose duties may involve the reading or display of signals in connection with the operation of trains. Marine Service—Captains, Mates, Pilots, Quartermasters, Bridge Foremen, Bridgemen, Bridge Motormen and Engineers, Engineers and Firemen.

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Entrance to Service	Re-Examination of those in the service
20/20 in one eye and not less than 20/40 in the other, with or without glasses, and with binocular single vision.	20/10 in one eye and not less than 20/50 in the other, with or without glasses, and with binocular single vision.
For near vision—read print in paragraph No. 3, of A.A.R. Standard Reading Card, with or without glasses.	For near vision—read print in paragraph No. 4, of A.A.R. Standard Reading Card, with or without glasses.

Class C. Car and Engine Inspectors, Ashpitmen, Air Brake and Steam Heat Inspectors, Weighmasters, Car Repairmen, Street Crossing Watchmen, Police Lieutenants, Patrolmen, Yard Clerks, Station Agents, Clerks to Station Agents, Baggage Agents, Ticket Examiners, Ushers and Telegraph Repairmen.

Entrance to Service	Re-Examination of those in the Service
20/30 in one eye and not less than 20/40 in other, with or without glasses.	20/10 in one eye and not less than 20/50 in the other, with or without glasses.
For near vision—read print in paragraph No. 3, of A.A.R. Standard Reading Card, with or without glasses.	For near vision—read print in paragraph No. 5, of A.A.R. Standard Reading Card, with or without glasses.

All applicants for employment, not mentioned in Class A, B or C, must meet the visual requirements for a re-examination of Class C.

PHYSICAL EXAMINATIONS

Method of Examination.

The applicant or employe is required to remove sufficient clothing to permit of a proper examination, the examination to take place behind a screen or in private quarters. All new employes should be completely stripped, including shoes and socks, at examination. The examinee is to stand in a bright light and present successively front, back and sides.

Evidences of the following should be looked for: Abnormalities or diseases of the eyes, ears, nose and mouth, retarded development (mental or physical), deformity or asymmetry of body or limbs, spinal curvatures, emaciation, cutaneous or other external diseases, glandular swellings or other tumors, nodes, varicosities, cicatrices, indications of medical treatment, such as blister, stains, scarifications and scars from administration of injections. Evidences and effects of former injuries and operations should

be noted. The hands and feet and the various joints of the body should be carefully examined to determine their functional efficiency. The chest should be examined by inspection, palpation, percussion and auscultation, both anteriorly and posteriorly, for tuberculosis and other lung, pleural, pericardial or mediastinal conditions, and valvular and other diseases of the heart. Check blood pressure and note heart action and respiration before and after exercise. The examiner should carefully inspect the abdomen and note abnormalities. While the patient is coughing strongly, he should examine the umbilical, femoral and inguinal regions in order to determine the presence or absence of actual or potential herniae. Any enlargement of the various canals should be noted. Inspection should be made of the genitalia for venereal sores, varicocele, orchitis, urethral discharge, and other abnormal conditions.

The buttocks should be separated for the detection of hemorrhoids, prolapses, fissures and fistulae.

The applicant should be thoroughly interrogated relative to his past medical history.

There should be maximum and minimum height and weight standards for new train and engine employees.

Minimum and maximum blood pressure standards for new employees: It is recommended that an applicant for railroad service should not exceed a maximum systolic blood pressure of 150 or a minimum systolic of 100, and a minimum diastolic blood pressure of 60 or a maximum diastolic of 90.

Recording of Physical State.

Physical examination should be made of all applicants for employment. The examination should be accurate and thorough, recording negative as well as positive findings. The extent of the examination depends on the standards defined for the various services. The report form should cover the examination for entrance into the service, promotion, return to service, and periodic examinations.

Height	Age
Weight	Eyes
Hair	Colored
Nationality	White

Occupational History

Former dust or other hazard?

Physical State

Appearance.

Vaccination.

Narcotic habits should be disqualified.

Special attention should be given to constitutional diseases including diabetes.

Weight (Height)

Compared with height and age.

"IDEAL" WEIGHT TABLE

Based on Maximum Longevity

Ideal Weights for Men. Ages 25 and over.

Height (With Shoes)		Weight in Pounds (As Ordinarily Dressed)		
Feet	Inches	Small Frame	Medium Frame	Large Frame
5	2	116-125	124-133	131-142
5	3	119-128	127-136	133-144
5	4	122-132	130-140	137-149
5	5	126-136	134-144	141-151
5	6	129-139	137-147	145-157
5	7	133-143	141-151	149-162
5	8	136-147	145-156	153-166
5	9	140-151	149-160	157-170
5	10	144-155	153-164	161-175
5	11	148-159	157-168	165-180
6	0	152-164	161-173	169-183
6	1	157-169	166-178	174-190
6	2	163-175	171-184	179-196
6	3	168-180	176-189	184-202

(Above Table from Metropolitan Life Insurance Co.)

CAUSES FOR REJECTION OF APPLICANTS FOR EMPLOYMENT

General Medical Conditions

1. Diabetes Mellitus.
2. Severe malnutrition.
3. Pellagra.
4. Avitaminosis and other severe nutritional conditions.
5. Osteitis fibrosa cystica.
6. Tetany.
7. Addison's disease.
8. Froehlich's syndrome.
9. Simmond's disease.
10. Hyperthyroidism.
11. General debility.
12. Combination of three or more chronic conditions, which individually are not disqualifying, but which when together cause general debility, anemia, circulatory and/or mental infirmity.
13. Acute systemic diseases, such as infectious fevers.
14. Marked overweight or underweight, taking into consideration height and age.
15. Generalized or localized lymphadenitis.

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The Eyes—Loss of eye, total loss of sight of either eye, trachoma, entropion, opacities of the cornea, if covering part of a moderately dilated pupil, strabismus of low visual acuity, pronounced exophthalmos, conical cornea, cataract, loss of crystalline lens, pronounced entropion, pronounced diseases of the lachrymal apparatus, symblepharon, tumors, abscess of the orbit, nystagmus, pronounced asthenopia, glaucoma, color blindness (in certain occupations), diplopia and loss of pupillary reflexes to light, gun barrel vision, hemianopsia or loss of depth perception.

—Color Vision—

A test for the detection of color defects should be one which can be carried out as rapidly as possible with maximum efficiency. The Holmgren worsteds or any standard modification have historically been very reliable. Several lantern tests have been devised which are also reliable. The Ishihara (color plate) test, which was modeled after the Stilling test, is rather accurate. There are several modifications of this test but the colors are apt to vary with the printing of the color plates.

Color plate tests are favored; lantern tests also are reliable.

Field tests are not reliable and therefore are not recommended.

The Ears—Deafness of one or both ears, all catarrhal and purulent forms of acute and chronic otitis media, disease of the mastoid cells, and moderate continued dizziness and/or vertigo.

—Aural Test—

Method. Place the candidate at a distance of 20 feet with one ear towards the examiner, plugging the opposite ear with cotton; then have him repeat aloud words or numbers spoken in a conversational tone by the examiner and record the distance at which they can be repeated correctly. Have him turn the other ear toward the examiner and repeat the test. In doubtful cases, the use of the audiometer is recommended.

Qualifications. Candidates for employment should not be accepted unless able to hear ordinary conversation, with each ear separately, the full distance of 20 feet.

Employees in train and engine service should not be permitted to work with the use of a hearing aid. No employee engaged in a hazardous occupation should be permitted to wear a hearing aid.

The Nose—Any serious pathology involving the nose.

The Mouth—Loss of part or whole of either maxilla, ununited fractures, ankylosis, deformity of either jaw interfering with mastication or speech, such as cleft palate or hare lip, marked pyorrhea or gingivitis, focal abscesses; markedly diseased teeth, hypertrophy or atrophy of the tongue, chronic ulcerations, leucoplakia, fissures or perforations of the hard palate (if marked), salivary fistula, hypertrophy of the tonsils sufficient to interfere with respiration and when tonsils are the seat of septic foci, malignant growths of buccal cavity, and loss of enough of the tongue to cause aphonia and inability to communicate vocally satisfactorily.

The Head—Abnormally large head with deformity (hydrocephalus and rickets), depression from fracture of skull, trephine openings, caries and exfoliation of bone, injury of cranial nerves, ozena.

The Neck—Toxic goiter (simple goiter without symptoms, if small, may be accepted), tuberculous adenitis, tracheal, thyro-glossal or cervical fistulae, wry neck, chronic laryngitis or disease of the larynx producing aphonia, and stricture or diverticulum of oesophagus.

Cardio-vascular System

1. De-compensation.
2. Bacterial endocarditis—acute or chronic.
3. Syncope—recurring.
4. Mitral stenosis—with de-compensatory signs.
5. Coronary infarction.
6. Angina, all stages.
7. Myocardial fibrosis with symptoms.
8. Systolic and diastolic murmurs accompanied by enlargements with signs as shown in No. 1.
9. Aortic insufficiency—with or without low diastolic pressure.
10. Aneurysm of aorta.
11. Coronary insufficiency with symptoms.
12. Pericarditis and pancreatitis with sequelae.
13. Heart block.
14. Morgagni-Adam-Stokes Syndrome.
15. Auricular fibrillation.
16. Paroxysmal tachycardia.
17. Arterio-sclerosis.
18. Impairment of circulation of extremities.
19. Intermittent claudication.
20. Exertional pain of extremities.
21. Thrombo-angitis obliterans and Raynaud's Disease.
22. Carotid-sinus syncope.

Upper and Lower Extremities—Affections common in both the upper and lower extremities, chronic rheumatism, chronic diseases of the joints or movable cartilage, acquired or congenital deformities, such as old or irreducible dislocations or false joints, malignancy or suspected malignancy, severe sprain, marked relaxation of the ligaments or capsules of joints, dislocations, fistula connected with joints or any part of bones, effusions into the joints, badly united or ununited fractures, rickets, caries, necrosis, pronounced exostoses, atrophy or paralysis of a limb, extensive deep or adherent cicatrices, contraction or permanent retraction of a limb or portion thereof, loss of a limb or portion thereof, loss of thumb or loss of two fingers on one hand, varicose veins (if pronounced), club foot, chronic ulcers and disabling acquired flat feet.

The Chest—Caries or necrosis of ribs, unresolved pneumonia, or pleumonitis, marked emphysema, chronic pleurisy, pleural effusions, chronic bronchitis, bronchiectasis, tuberculosis, asthma, repeated pulmonary hemorrhage or marked loss of respiratory capacity, organic diseases of the

heart or large arteries, protracted functional derangement of the heart, and abnormal variations of the blood pressure.

The Abdomen—All chronic inflammations of the gastro-intestinal tract, gastric resection, diseases of the liver and spleen, ascites, pronounced hemorrhoids, prolapsus ani, fistula in ano, fissures of anus, hernia, actual or potential, in all situations (exceptions: clerks and others not engaged in laborious work, who have a single reducible hernia supported by a well-fitting truss).

The Genito-Urinary Organs—Gonorrhea, syphilis and venereal sores, stricture of the urethra, undescended testicle, except when within the abdomen, chronic diseases of the testicle or epididymitis, hydrocele of the tunica and cord, unless the hydrocele is small and non-progressive, varicocele with symptoms, disabling malformations or diseases of the genitalia or bladder, all organic diseases of the kidneys, and loss of one kidney.

Applicants with varicocele may be accepted when it is not accompanied by atrophy of the testes, pain or an evident neurotic state.

The Spine—Caries, spina bifida, lumbar abscess, fracture and dislocation of the vertebrae, angular curvatures (unless slight and lateral only), including gibbosity of the anterior and posterior part of the thorax, moderate or severe symptomatic or asymptomatic arthritis of the spine, and protruded intervertebral disc operated or unoperated.

The Skin—Chronic, malignant, contagious or parasitic diseases of the skin. Deep and adherent cicatrices; chronic ulcers and vermin.

Mental and Moral Infirmities—Any mental infirmity, epilepsy and epileptic equivalent, diseases of the cerebro-spinal system, chorea, and all forms of paralysis, tabes dorsalis or persistent neuralgias, and chronic alcoholism and habitual use of narcotics.

The Reflexes—Abnormal reflexes taken in conjunction with history of physical findings indicating possibility of serious disease.

Laboratory Blood—It is recommended that a routine blood test for syphilis be taken on all applicants for railroad employment.

Laboratory Urine—It is recommended that a routine urinalysis be done on all applicants for detection of albumin and sugar.

FOR PROMOTION AND RE-EXAMINATION OF THOSE IN SERVICE

The results of a physical examination may bring out certain disqualifying findings, but keep in mind first, the duties that the employe must perform and secondly, the ability of the employe to perform that duty promptly and satisfactorily so that loss of life and property will not result.

EXAMINATION OF RESTAURANT AND RESTAURANT CAR APPLICANTS AND EMPLOYEES

Applicants concerned with the preparation and handling of foodstuffs or dining equipment shall be examined before entering service.

Employees concerned with the preparation and handling of foodstuffs or dining equipment shall be re-examined, the periods not to exceed six months, which should include examination of the lungs, skin, mouth and genitalia.

Employees found to have a communicable disease when examined shall immediately be relieved from duty and not permitted to resume duty until all danger of communicability has disappeared. Food handlers with sores, skin eruptions or disfiguring conditions on exposed parts should be relieved from duty until condition is corrected.

Employees off duty account of illness six days or longer should be re-examined before resuming duty.

GENERAL

Many factors enter into the ultimate decision as to the candidate's fitness for service. Where all other physical factors are normal, it is not justifiable to reject an applicant unless there are marked variations from the normal.

When an applicant for employment has none of the disqualifying defects above mentioned, but whose general condition (mental or physical) is sub-standard from any cause and whose efficiency is thereby impaired, he should be rejected. In all doubtful cases the Company should be given the benefit by the Examiner, or if he desires the matter may be referred to the office of the Chief Medical Officer.

Applicants should be vaccinated at the time of examination unless a well-pitted scar is present, especially if smallpox is epidemic or sporadic.

(There followed a general discussion of the various portions of this proposed revision and a number of suggestions were made as to revisions which Dr. Bennett and Chairman Metz advised would be considered prior to any final publication of this report. As much of the comment was off-the-record, it is not included here in detail.)

THE CHAIRMAN: Gentlemen, as I mentioned this morning, we have some members of the Post Office Department here to listen to our report on first-aid. We are most pleased to have them with us, and before going any further with this subject, I now call on Dr. Graham to give his report on first aid equipment.

DR. GRAHAM: Mr. Chairman and Gentlemen, the following is the proposed revision of Circular No. M&S-217 relating to first aid equipment:

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(PROPOSED)

Circular No. M&S ———
(Superseding Cir. No. M&S-217 dated May 31, 1939)

ASSOCIATION OF AMERICAN RAILROADS
OPERATIONS AND MAINTENANCE DEPARTMENT
OPERATING—TRANSPORTATION DIVISION

MEDICAL AND SURGICAL SECTION
59 East Van Buren Street, Chicago 5, Illinois

J. H. ANDREOTTI, Vice-President
Operations and Maintenance Dept.

Officers of Section
Dr. A. R. MEIZ, Chairman
Dr. ———, Vice-Chairman
H. S. DEWHURST, Secretary

**Recommended Standard Practice in First Aid Training
and Surgeon's Report Forms**

As revised by

Dr. Robert M. Graham,
Director, Department of Sanitation and Surgery
The Pullman Company

January 26, 1951.

TO THE MEMBERS:

In 1925 the Medical and Surgical Section issued Circular M&S-51, which included Recommended Standard Practice as to First Aid Training and Equipment, as well as Surgeon's Report Forms covering:

- (a) Company Surgeon's First Report to Chief of Surgical Service.
- (b) Company Surgeon's Supplementary Weekly Report.
- (c) Company Surgeon's Final Report.
- (d) Report to Chief of Surgical Service by Employing Officer advising of the Employee's return to work.

That portion of the Section's recommendations relating to First Aid Treatment, Equipment, etc., was revised in 1938, under the title of "First Aid Instructions for Railroad Employees," and was distributed to Member Roads with Operating-Transportation Division Circular No. 11.

Circular No. M&S-217 was issued by the Medical and Surgical Section under date of May 31, 1939 containing illustrations of Company Surgeon's report forms as previously recommended, and calling attention to some developments since the original report by the Section in 1925.

FIRST AID INSTRUCTIONS

The booklet covering "First Aid Instructions for Railroad Employees" has recently been revised by a Committee of the Medical and Surgical Section, after submitting the problems to the heads of Medical Departments of Member Roads. This revision (January 1951) was approved by the Committee of Direction, Medical and Surgical Section, and by the General

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Committee, Operating-Transportation Division, for distribution to Member Railroads.

FIRST AID EQUIPMENT

The Section has considered the present problems of First Aid Equipment, and previous specifications made for a standard first aid packet known as the Association of American Railroad's First Aid Packet. It is not practical to employ a trained first aider or a professional attendant to accompany each train or to maintain such employees at the numerous small places where their services might be valuable on rare occasions; therefore, the first aid equipment must be limited to the ability of untrained help. It would be unreasonable to carry drugs to be prescribed by laymen, or surgical supplies that could not be used by the same character of help. Surgical dressings that are kept in ordinary commercial packages may become contaminated and wasted. To overcome this difficulty a first aid packet is recommended containing only sterile pads so that they may be easily and quickly applied until the patient can be seen by a doctor.

Past experience with specially prepared dressings made to special order of members of the railroad industry has shown that this is a troublesome and expensive means of obtaining and maintaining proper first aid dressings. In view of this, it is recommended that dressings used in railroad first aid packets be of standard form and packaging and obtainable on the open market.

We recommend that a standard first aid packet be made according to the following specifications, and that it be known as the Association of American Railroad's First Aid Packet. The container shall be a cardboard, metal or plastic box, approximately 1½" x 3½" x 1" inside measurements, with hinged top or side.

The contents of the box shall be:

- 1- aseptic gauze pads 2" x 2" for small wounds;
- 3- aseptic gauze pads 3" x 3" for large wounds;
- 1- 2" x 5 yds. compressed gauze bandage;
- 6- ½" x 3" small, sterile, ready-to-use adhesive gauze strips.

The gauze pad shall be of grade 20 x 12 mesh or finer; the 2" size pad of 12 ply, and the 3" size pad of 16 ply. Each pad shall be in an individual glassine paper envelope closed and subjected to sterilization. Envelope shall be labeled as to contents.

The bandage shall be of mesh 28 x 24 gauze, or finer.

After the packet is filled it may be enclosed in a glassine wrapper for protection. However, partial use of contents can be made without contaminating the other enclosed dressings.

Attention is called to the fact that there is no objection to modification of the type of container which may be desired by individual railroads, and in locations where boxes are subject to frequent use, the addition of several small, sterile ready-to-use adhesive strips for minor cuts, abrasions, and puncture wounds is suggested. These adhesive strips may also be used in applying larger dressings.

We do not recommend the Esmarch triangular bandage as a part of this standard packet, since the pads we have described may be used to apply

pressure locally to bleeding points as advocated in the A.A.R. Manual of First Aid Instructions. Handkerchiefs, a belt or a stout piece of cloth may be used in rare instances where a tourniquet may be indicated or a sling is needed.

We also recommend the U. S. Army Stretcher as a part of equipment of baggage cars or combination baggage cars. This stretcher will also serve as a cot. If blankets, pillows, etc., are needed for serious illness in connection with the cot, or in fracture cases, they should be obtained at the time of accident; otherwise with long keeping they may inevitably become deteriorated and useless. We believe this equipment in the hands of laymen is the most practical and comfortable method of transporting all serious cases of sickness or injury.

It is recommended that the First Aid Packet be located as follows:

1. Train Service—Passenger and Freight.
Passenger Trains—1 packet each in coaches, baggage cars, and engine.
Freight Trains—2 packets in coaches and 1 in engine.
2. Small Shops, Round Houses, Bridge and Building Forces, Section Gangs, Surveying Parties, Linemen, Railway Stations, etc.
First aid packets—1 to 10 depending on number of employees.
3. Larger Shops, Office Buildings and Terminal Points.
First aid station fully equipped and in charge of a surgeon or trained nurse.

A.—First aid Box with emergency supplies may be provided as deemed necessary in the judgment of the Chief Surgeon of the Railroad for certain isolated or unusual locations.

On behalf of the Committee of Direction.

Respectfully,

H. S. DEWHURST,
Secretary.

DR. GRAHAM: We have discussed this first aid equipment with several of the large companies and we have here one type of kit which has been considered by the Committee. This kit was put up by one of the large manufacturers. For those roads who desire the addition of the triangular bandage, you can put the triangular bandage in the same type of kit. A box of this type with that equipment can be purchased for approximately 40 to 50 cents, we understand. With the triangular bandage added it will, of course, increase the cost. We have here as some of you have seen, the old cardboard box which again will carry the first aid equipment, put in a glassed enclosure which can be carried around in the pocket.

Another large concern which has representatives here today, has changed their methods of manufacturing of supplies to a certain extent, and the old gauze bandage compress is no longer readily available. When available, it is only as a special order.

THE CHAIRMAN: Thank you Dr. Graham.

Before we put this open for any general discussion, I am going to ask Mr. C. F. Rank, who is acting Chairman of the Committee of Railway Mail Transportation, in Chicago, and who is, incidentally, also connected

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with the Milwaukee Railroad, to present their problems as have come to him and he has discussed them with me. Mr. Rank!

Mr. RANK: Dr. Metz and Gentlemen: You have already identified the Committee on Railway Mail Transportation which briefly is the committee representing all railroads aside from some of the short lines in matters dealing with mail traffic.

The rules of the Post Office Department as they apply to the railroads concern mutual problems of service, train operation, mail car construction and the interior fixtures.

Only recently we revised the specifications for the construction of mail cars so as to fit more nearly our present conditions such as having wider doors in the cars, and meeting some of the demands of the postal clerks' organization with respect to closed-in toilets, electric water coolers and electric hot plates, improved lighting and a number of other matters. Those specifications were adopted effective September 1, 1949.

Last fall the Post Office Department made a request upon the railroads for a first aid kit and a few of us thought that perhaps the matter ought to have been considered also by your group here.

Accordingly, I wrote Mr. VanHorn who represents the Post Office Department in matters dealing with mail car construction and fixtures, and we have let the matter rest until your committee could meet here as of today and allow Mr. Landry, who is here also and who is Director of Safety for the Post Office Department, to briefly present their side of it.

I have no idea that we are going to dispose of this question to the mutual satisfaction of the railroads and the Post Office Department here today, but I am satisfied that Mr. Landry will give very careful consideration to what you may adopt for locomotives, cabooses, baggage cars and other railroad equipment, shops and so forth, and then try and coordinate their needs with what we specify on the railroad.

We see no need—and I say "we", the railroads—for our committee spending \$7 when we might get by with \$2. I think we are all conscious of that, and Mr. Landry is sympathetic to that. As Mr. VanHorn, and with those remarks, I think I have indicated our presence here, Dr. Metz. I would like to have Mr. Landry comment and probably we can just briefly talk about it so far as the Post Office Department is concerned because he has to make a 1:30 train to New York, and then subsequently, maybe we can get together and adopt something that will be satisfactory to the Post Office Department and my own personal hope and wish is it may be something you men will adopt here for other railroad purposes.

Mr. A. L. VAN HORN (Superintendent of Vehicle Design Section, Bureau of Transportation, U. S. Post Office Department): Gentlemen, I would like to say that the question of first aid kits was brought up in the first place because some of the railroads were furnishing one kind of first aid kit and some others were furnishing another kind, and still others were not furnishing any at all. In order that similar containers and materials might be furnished by all railroad companies our letter of October 24, 1950, relative to first aid equipment was issued.

Mr. Landry, Safety Director, Post Office Department, worked with us in the preparation of these specifications and as he is more familiar with the subject we will hear from him at this time.

Mr. EDWARD B. LANDRY (Safety Director, U. S. Post Office Department): Dr. Metz and Gentlemen: I consider it a privilege to be able to come before you men and tell you something of the problem that we had with respect to first aid kits and what led to our thinking in developing the specifications which the Department issued last October.

First of all I want to tell you that we do not have a Chief Medical Officer in the Post Office Department who quite properly would have undertaken the solution of such a problem. In the absence of such a professional man that task fell upon the Safety Director of the Post Office Department. I can assure you immediately that I did not attempt to solve this medical problem alone. Assistance from various medical sources was obtained.

Mr. Van Horn has indicated, the problem was precipitated by two factors. Over a period of time numerous complaints have been received from our railway mail clerks that they either had little or no first aid equipment in the railway mail cars, or that in some instances they had ample.

We found as we started to look into the problem that apparently their complaints were justified because we found a wide variety of first aid kits being issued and supplied in the various railroad mail cars. I perceive from your Chairman's comments that you are giving consideration to setting up a standard in that part of your operations which concerns the railroad directly.

I do not mean to prolong my discussion but probably some of you gentlemen have seen these kits already. (Showing several first aid kits.)

It happens this kit (holding up exhibit) does not have its contents within the kit container, but it consisted of so-called unit packages. In this instance there were two 3-inch bandage compresses, a 4-inch bandage compress, four 2-inch gauze bandages, a 22-inch tourniquet, and 6 bandages.

Here is another kit (holding up exhibit) supplied by another road having quite a different set of contents. We have some adhesive tape, sterile gauze pads, ammonia inhalants, tincture of mercuric iodine, handy adhesive gauze pads, and a tourniquet.

Still another kit (holding up exhibit) consists of two packaged items which contain sterile gauze pads, triangular bandage, 2 by 5-yard gauze bandage and some safety pins. The fourth exhibit I want to show you is much more elaborate. Not only is there an instruction book, but here are some items of the contents: I will just drop them out on the table in front of you—scissors, yards of gauze, tourniquet, an antiseptic, some cotton, 5 yard spool of adhesive tape, more bandage, burn ointment and a number of other items which I shall not take time to mention.

The kit of another railroad which I do not have, consisted of a small economy pad of absorbent gauze, absorbent cotton, one-ounce of iodine, 12 Band-Aids, 5 yards of adhesive plaster and a small jar of burn ointment.

Gentlemen, I do not think I could be any more emphatic in displaying to you the lack of uniformity that prevails and the reason which motivated the Post Office Department to attempt to effect some standardization of the first aid kits used in the railway post office cars.

A little more by way of background because I see in what I am about to tell you a difference in philosophy, from what Dr. Graham has said in the matter of first aid instruction or training.

In April of 1948 we launched in the Post Office Department a first aid training program for our railway mail clerks. This program was nationwide, throughout the postal service. The standard American Red Cross first aid training course was adopted. The program was jointly sponsored by the National Postal Transportation Association and the Post Office Department. Our railway mail clerks were advised of the first aid training program. They have participated in the program on their own time.

As I recall, the progress report of April 1950 revealed that we have trained, and American Red Cross standard first aid certificates have been issued to 2000 railway mail clerks. Our objective, which we have not reached as yet, is to have at least one clerk in each car qualified and trained in the American Red Cross standard first aid course.

That was the background which preceded the next step—the development of a standard specification for first aid kits. Our thinking was simply this, we did not feel that we should ask the railroads for a standard first aid kit unless we had qualified people who knew how to handle the contents of the kit and who could administer first aid treatment in accordance with prescribed and recognized procedures. Our initial plan, therefore, was to start a training program for our personnel and then to provide them with standard equipment in which they would have available everything needed for the administration of first aid.

Let me tell you about our injury problem which I think has a bearing upon the selection of the items that went into the first aid kit. Largely, we are troubled with contusions, abrasions, lacerations and foreign bodies in the eye.

Let us discuss the matter of foreign bodies in the eyes first. The Clerks "serving locals," that is, those that make the dispatches and the catches at the nonstop stations (this is done with the door open) are subject to foreign bodies in the eye. The clerks who are working in the interior of the car are likewise subject to the dust and dirt that is whipped up when a car door is open. We have a large percentage of eye injuries arising from that source. Approximately 20 per cent of our total accident problem in the railway mail service are from eye injuries. Very soon we will reduce one source of exposure to foreign bodies in the eye by supplying clerks serving the nonstop stations with plastic eye protectors, also known as goggles. However, I think that it would be extremely difficult, if not impractical, to attempt to have all of the clerks working in the cars to wear eye protection all the time.

You might be further interested to know that in the selection of items to include in this specification for the R.P.O. First Aid Kit, we were guided largely by the prevailing federal specification on first aid kits.

I have communicated with the Council on Pharmacy and Chemistry of the American Medical Association since this particular problem came up. In some points the Council is in substantial agreement with the comments that you passed along to us, Mr Rank. These objections concerned the use of tannic acid ointment for burns and boric acid ointment for the eyes that were included in the kit.

Mr. Chairman, I do not know whether there is anything further I can add by way of history and information that might be helpful to the group here in evaluating what we have presented.

I will be happy to make myself available for such questions as may be asked of me.

THE CHAIRMAN: We might first ask what you think of the kit Dr. Graham has presented as what the railroads have found practical after some thirty years of experimentation and working with this where we are dealing with railroad men all the time.

MR. LANDRY: Doctor, I am humble in your presence here, when I say that I am sure that when a group of professional men such as yourselves have given such long study to a particular problem you undoubtedly have arrived at a satisfactory solution to the problem. It would be presumptuous for me to say differently. However, permit me to make this point by reference to Dr. Graham's statement on first aid training. I think the railroad and the Post Office Department have a basic difference in philosophy on first aid. We feel our people should be trained in first aid so that they will be competent to administer first aid when a man is hurt on the job, then seek medical treatment, whereas, I interpret the policy of the railroad is to have the man seek medical attention as soon as possible and not to be immediately concerned with first aid.

I am sure that you doctors do not lose sight of the fact that once a railroad mail clerk starts out on his run, he finishes it. That may mean eight hours before he has an opportunity to come to the end of his run where he can get medical attention.

I believe there is a difference, too, in the accident exposure which our people encounter. We have, in effect, a shop operation on wheels. Our injuries are therefore somewhat different from those you encounter from train crews. For example, such things as rough wooden surfaces resulting in splinters are a frequent type of injury. Burns from exposed steam pipes are not an uncommon source of injury. Cuts from very sharp objects, as well as a clerk occasionally putting his hand through a window with resultant lacerations as sources of injury. Strains and hernias are also a common type of injury, as well as bruises due to rough coupling of mail cars.

THE CHAIRMAN: Have you read over our little First Aid instruction booklet?

MR. LANDRY: I have not had an opportunity as yet.

THE CHAIRMAN: That covers a lot of our thinking. That has been revised time and time again, and it shows pretty much why we have boiled things down. We don't like the use of drugs. We don't like wounds colored with iodine or methylenedichloride and so on. That interferes with the doctor's examination.

MR. LANDRY: I can understand your point of view. I would like to make mention of the design of the first aid kit container. One thing that caused us to ask for a watertight and airtight and dust-tight kit was because railroad mail cars certainly cannot be kept as clean as this meeting room. We felt it was desirable to provide a good, serviceable, long-time use container and one that would keep the contents of the kit in as clean condition as possible. Such a container would also assist to preserve the sterility of the materials encased in it.

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THE CHAIRMAN: Dr. Graham, do you have any questions?

DR. GRAHAM: There are several comments. The Post Office Department is apparently going through a phase of first aid experience that we had about twenty or thirty years ago when we were faced with the very same problem. I think the Canadian roads perhaps have the best experience on first aid training. Their exposures and environmental exposures are a little different from the average American railroads in some instances. However, our observation was and still is that the Red Cross training, being as good as it is, is still deficient so far as proper care of these injuries is concerned. From the safety standpoint, I think you are taking the right step in furnishing eye protection to these individuals who have a special hazard in eye exposure, but after you have done that, then you will run into—if you depend upon your first aid train men to take care of these minor foreign bodies in the eye—the same thing, perhaps even more. Your experience is going to be even more so than it has been in the past of complicated eye infections, which can, in my opinion, be cut down if you allow those individuals to let nature take its course in most instances and wash out those foreign bodies, or advise them to use a lavage, a douche, with water to attempt to wash out those foreign bodies, but not to use an applicator or as one railroad conductor liked to do over the years, pull a horse hair out of his collar and make a loop of that and use it with resulting infections which frequently occurred.

I think the important thing is to use the simple first aid treatment possibly as suggested in the A.A.R. First Aid Manual, and then I think you agree with this in your program, although I don't know. Advise them, if they continue to have trouble, to seek medical aid.

MR. LANDRY: Our instructions, Dr. Graham, to all of our people in the postal service is to get competent medical treatment as rapidly as possible.

That is not too difficult a task in our railway mail terminals and post offices because we have, at least in the larger locations a medical department or medical unit. That isn't the case when it comes to the road men on the railway mail cars.

DR. GRAHAM: I think that situation you are in is very similar to the situation of The Pullman Company.

We have no men over the line, but we do have the railroad surgeon at all of these towns and cities that we can depend on, and in emergencies your rail conductor can wire ahead and have your railroad doctor come down and take care of your case for you.

MR. LANDRY: That is an interesting suggestion. At the present time we do not make it a practice to hold up the train to have one of our clerks treated. More important than that, we do not have any established medical service along these lines that we can call on except in the larger cities where the Bureau of Employees' Compensation have designated physicians to take care of federal employees. But your suggestion is certainly an interesting one that we might want to give it further consideration.

DR. WM. HERRITS (Chief Surgeon, St. Louis Southwestern Railway

Lines): Do you recommend your train employee try to remove foreign bodies, while the train is in motion, with an applicator?

MR. LANDRY: We would not want them to do it, of course not.

DR. A. NEUPAUER (Chief Medical Officer, Reading Company): May I say this to you, when you mention prophylaxis that is about the ideal thing and only thing you could do. As Dr. Graham mentioned, the eye mechanically will clean itself of an ordinary foreign body. Now, you will have three types of foreign bodies. There is the foreign body that lodges in the eye and attaches itself to the cornea. Very often the eye will mechanically clean out the foreign body. It may or may not, but usually it does. However, when you come to the hot cinder which imbeds itself into the cornea and probably produces a stain, neither you nor any one else is going to remove it, and if you have a steel body or have a splinter or anything like that which imbeds in the cornea and perforates the cornea, no horse hair or anything else is going to remove it.

With the imbedded cinder with stain or without staining or perforation of the cornea, you need anesthesia to take it out. I have yet to find a man with enough courage to stand up and let me take it out.

MR. VANHORN: May I ask something? How about putting a pad over the eye for the time being?

DR. GRAHAM: Unless it is a serious injury, usually the eye and lacrimation, simple douche with ample water and mopping the eye itself with a clean cloth, will take care of that situation.

MR. VANHORN: I have been in the Pullman shops in Chicago where I got something in my eye. I couldn't do anything with it. I would keep my hand over it like this (demonstrating). Of course, it hurt like the deuce. Finally, of course, I went to a doctor.

DR. GRAHAM: That is the important thing.

MR. VANHORN: What I was thinking, if you had a pad to protect it—you know, you are bound to wink your eye, something like this.

MR. RANK: Dr. Metz, I don't want to rush the subject but for the sake of Mr. Landry, I know he has to catch the train at 4:30.

I am satisfied you have other subjects on the agenda. I am wondering if Mr. Landry doesn't have all the information he may need to consider this subject further, and having in mind that Mr. Landry is available and in Washington some of the time, that between some one you might designate and Mr. Landry, they might come up with something that might be very simple.

THE CHAIRMAN: Mr. Landry, can you get in to Chicago once in awhile?

MR. LANDRY: Yes.

THE CHAIRMAN: Dr. Graham is with The Pullman Company. He has cars all over the United States just like you have post office cars all over the United States. He is very familiar with that kind of work. In fact, we all are here in our respective areas. I think this would be, now that you see what our book of instructions is, what Dr. Graham has in mind, and you have your certain ideas in mind. I think it would be well for you

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and Dr. Graham and any other committee to just sit down and discuss it out just as a small group of two or three fellows together and then you would probably get a lot of pros and cons as to the advantages and disadvantages of certain things. We want to help out and do everything possible, just as well as we can. That is what these meetings are for.

Gentlemen, we will continue with Dr. Graham's report and discuss it from our own railroad point of view.

You have heard the discussion from the Post Office, what they had in mind, and apparently they are willing to sit down and talk about it. Does anybody want to ask Dr. Graham any questions about his paper? Does everybody approve of Dr. Graham's report as to what the first aid packet should contain?

DR. BENNETT: I recommend the standard first aid packet be approved by this group, as presented by the Committee in proposed revision of M&S-217.

(The motion was duly seconded, and carried.)

THE CHAIRMAN: Is there any discussion now?

I might say I presume that you have all seen this sample (as distributed) that we have in front of us. This has the specifications that Dr. Graham mentioned, and they have added this little roll of adhesive. Of course, we have our little first aid booklet, and that can be folded and put in here; that is, your first aid packet, minus the adhesive is what we would call a minimum packet.

If anybody wants to add safety pins or anything else in it or adhesive, they can do it knowing it will cost a little more.

DR. BENNETT: Did you get a price on it?

THE CHAIRMAN: This metal box made up as it is in quantities of 5,000 in the metal kit is approximately 53 cents. In the plastic kit it is 48 cents, and in the cardboard kit it is 43 cents. These are estimated prices. It is 10 cents cheaper in the cardboard as compared with the metal, and of course, it is 5 cents cheaper in the plastic. So the metal is the most expensive, then plastic and then the paper. If they left the little adhesive out, I don't know what it would cut off.

Gentlemen, we must continue now. The next item on the Program is the Report of Committee on Fractures, Dr. Eyer.

DR. DUNCAN EYER (Chief Surgeon, Nashville, Chattanooga & St. Louis Railway): Mr. Chairman and Members: Our Committee thought this year it would be wise for a few of us to just outline some interesting case reports. The Committee Report, therefore, reads as follows:

(Circular No. M&S-293)

ASSOCIATION OF AMERICAN RAILROADS

MEDICAL AND SURGICAL SECTION

REPORT OF COMMITTEE ON FRACTURES

Dr. Duncan Eve (Chairman), Chief Surgeon, Nashville, Chattanooga & St. Louis Railway

Dr. Ralph G. Caruthers, Chief Surgeon, Cincinnati, New Orleans and Texas Pacific Railway

Dr. C. F. Holton, Chief Surgeon, Central of Georgia Railway

Dr. B. W. Stockwell, Chief Surgeon, Detroit and Toledo Shore Line Railroad

Dr. J. Huber Wagner, Chief Surgeon, Bessemer & Lake Erie Railroad

Chicago 5, Illinois, February 28, 1951.

TO THE MEDICAL AND SURGICAL SECTION:

Your Committee on Fractures respectfully submits as its report a series of papers prepared by Members of the Committee. The first three constitute actual case histories, numbers one and two having been submitted by your Chairman, and number three by Dr. B. W. Stockwell. There is also an "Outline of Management of Low Back Sprains," as written by Dr. J. Huber Wagner. These papers are presented simply as a matter of interest and information and it is hoped that they will bring out discussion which will be beneficial to those present.

Case History No. 1 (By Dr. Duncan Eve)

Patient: W. T., Age 41.

On September 6, 1949 this patient was run over by a truck 30 miles from Nashville, Tennessee, the wheel passing obliquely over his right hip region as he lay prone. He was taken to his local hospital where X-ray revealed a posterior dislocation of the right hip together with a fracture of the posterior rim of the acetabulum, a single large fragment being displaced 1½ inches upward. Under general anesthesia the dislocation of the hip was reduced, and he was immediately referred to me for further treatment.

When first seen examination revealed the abdomen to be flat with a moderate amount of involuntary muscle spasm, tenderness and rebound tenderness in the lower abdomen. Catheterization produced six ounces of bloody urine. Eight ounces of saline fluid were placed in the bladder and only two ounces of bloody fluid returned. Cystogram was positive.

The abdomen was opened and a very large rent in the fundus of the bladder was found. The bladder was repaired and the wound closed without drainage. A large Foley catheter was placed into the bladder.

The patient was brought back to his room and the right limb placed in Russell traction. In eight days the patient was operated on for the fractured acetabulum under spinal anesthesia by the posterior exposure method.

The patient was placed upon the sound side with a kidney support. For the skin incision only two landmarks are necessary; the posterior superior spine and the upper anterior angle of the greater trochanter. The skin incision began about 2 1/4 inches in front of the posterior spine extending slightly forward to the upper anterior border of the greater trochanter and then five inches along the line of the thigh. The upper part of the skin incision outlined the upper border of the gluteus maximus, and this muscle is retracted backward. At this stage all the muscles to the greater trochanter come into view--gluteus medius, gluteus minimus, piriformis, obturator internus and gemelli, obturator externus and quadratus femoris.

The next step was to detach some of these muscles from the greater trochanter. The gluteus medius and minimus were retracted forward. The insertion of the piriformis to the tip of the greater trochanter was divided and the joint proper was now in view. The capsule of the hip joint was seen to be torn and was enlarged. The single large fragment was seen and was displaced upward and rotated. The fragment was placed in its normal position and fixed with one screw. The wound was closed in layers. The patient returned to his room and was placed back in Russell traction.

The patient had primary healing of the wound and remained in traction for two weeks. He was discharged on the 22nd hospital day and instructed to remain in bed for two more weeks and begin the use of crutches with no weight-bearing on his right foot. The patient reported to my office several times and was discharged in April 1950 for regular duties. He did not have any complications from the two operations.

Conclusion: The posterior approach method to the hip joint is safe, rapid and practically bloodless.

Case History No. 2 (By Dr. Duncan Eve)

Patient: H. E., Age 51.

History: June 14, 1950, fell from side of box car, which was in motion, injuring his left thigh.

Patient was brought to St. Thomas Hospital and x-ray made of his left thigh.

Diagnosis: Simple fracture of left femur at junction of middle and distal thirds.

Treatment: June 14, 1950, under spinal anesthesia the entire left hip, thigh and knee were prepared and draped. A five inch incision was made on the lateral aspect of the thigh at the fracture site and the fragments were exposed. A guide pin was inserted up the proximal fragment and brought out through the superior aspect of the greater trochanter and an incision made in the skin where the guide pin was pointed. A reamer was then inserted over the guide pin and a hole was drilled through superior surface of the greater trochanter. A Kunscher intramedullary nail was inserted over the guide pin and driven down to the fracture site. The fracture was then reduced and held in reduction with a clamp and the nail driven well past the fracture site. Wound closed in layers.

Patient was able to leave the hospital on June 25, 1950 per ambulance and returned to my office on crutches July 25. The x-ray showed good

position and fair amount of callus. He was x-rayed again at my office on October 24 and the x-ray showed good position and good union. He began light bearing weight on this date. He discontinued the use of crutches the latter part of November and was discharged to return to work on December 1.

Case History No. 3 (By Dr. B. W. Stockwell)

Patient: R. J., Age 23—Fracture of Humerus with Complication.

History: This 23 year old railway switchman was injured at one a.m. on May 21, 1949, when he was rolled between the side of a box car and a brick wall. He was taken by ambulance to Harper Hospital, Detroit, where examination in the emergency room revealed that he was suffering from severe shock; a displaced fracture of the left humerus, with radial nerve paralysis; fracture of the superior and inferior rami of the right pubic bone; traumatic rupture of the urethra, and multiple fractures of the upper seven left ribs.

Initial treatment consisted of multiple blood transfusions for shock; the fractured left humerus was splinted following correction of over-riding; an unsuccessful attempt was made to catheterize the ruptured urethra, and the patient was admitted to the hospital and placed in an oxygen tent.

Eight hours later, the patient was out of shock and his general condition was satisfactory. He was therefore taken to the operating room where a suprapubic cystostomy was done and a retrograde catheterization of the ruptured urethra was carried out.

The specific injury which is to be discussed at this time is the fracture of the left humerus. Initial X-ray examination was made with the bed-side portable unit. It revealed a badly comminuted fracture involving the shaft of the humerus at the junction of its middle and distal thirds, with considerable angulation of the fragments at the point of fracture.

Clinical examination showed a definite wrist drop with characteristic sensory changes indicating an interruption to the continuity of the radial nerve.

Due to the patient's serious general condition, the fracture of the left humerus was not disturbed and the simple first aid splinting which had been applied in the emergency room was not touched until June 2, 1949. On that date the plaster cast was taken to the patient's bed-side and a hanging plaster cast applied, extending from the upper portion of the left arm to and including the wrist, and splinting the wrist in the position of function—a cock-up position. A loop was placed at the elbow for traction. The traction was applied to this hanging cast with pulley and weights.

The next X-ray examination was carried out on June 4, 1949, and is reported as follows:

"The examination of the left humerus was made through a plaster cast and the position and alignment of the fragments at the comminuted fracture, junction of the mid and lower thirds of the humeral shaft, is good."

The patient's condition during this period was somewhat critical and for this reason it was found very difficult to keep the traction in place on the

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left humerus, as mentioned above. Thus, on June 22, 1949, an additional portable study of the left humerus with the plaster dressing was made. This revealed:

"There is some anterior bowing at the site of the fracture, which has occurred since the former study."

For this reason the traction was increased by placing additional weights at the foot of the bed, and on June 27, 1949, a check-up X-ray revealed:

"Study reveals a comminuted fracture of the elbow and humerus as previously reported. There is definite improvement in the position of the fragments as compared with the last study, the position being satisfactory in both planes at the present time."

On July 22, 1949, the cast was removed and another X-ray examination was made. This was reported as showing:

"Re-examination of the humerus in three projections following removal of the immobilizing plaster cast shows that the alignment of the fragments is still very satisfactory, and was essentially unchanged since the last previous study of 25 days ago. The amount of callus has not increased appreciably, and it is taking place mostly in the form of bridging. This bridging has occurred mainly between the small intermediate fragment and the large distal fragment. The two main fragments of the humerus which are separated by approximately half a centimeter show only a small amount of callus between their adjacent surfaces."

A new hanging cast was applied and the patient left the hospital on July 19, 1949, and continued under observation in our office.

On August 23, 1949, he was sent back to Harper Hospital where his cast was removed and another X-ray of the left humerus was made. This was reported as follows:

"There is as yet insufficient union to permit use of the arm except in a very guarded manner and in passive movements."

As these films showed a minimal amount of callus, a posterior plaster mold was applied which could be removed for physiotherapy, hydrotherapy, exercises and massage three times weekly.

The next X-ray examination was made on September 19, 1949. This showed very slight advance in healing since the last study, with some increase in deposition of calcium at the fracture site, without change in position. Physiotherapy was continued.

There was also definite evidence of regeneration of the nerve and dorsiflexion of the left hand and abduction of the left thumb was present and, although weak, showed a very marked improvement over previous examinations.

Physiotherapy was carried on three times weekly. The patient was instructed in occupational therapy, and also concerning exercises.

By January 15, 1950, the elbow motion was excellent except for a loss of approximately five degrees of complete extension. The wrist joint motion was now normal and dorsiflexion of the left hand had been completely regained. At that time there was only a slight loss of abduction of the left thumb. There was moderate disuse atrophy of the entire left arm.

Physiotherapy was continued throughout the year 1950 and the patient

seen at regular intervals. During this time, active use of the part in order to overcome the disuse atrophy was urged. Numerous attempts were made to find a job for him at light work and they were all unsuccessful, because of lack of seniority, various agreements, etc. The case was in litigation and it was obvious that the man was not going to return to work until his case had been settled.

By the middle of September 1950, we considered that he had made an excellent recovery from his injury. There still was a small percentage of disuse atrophy of the left arm, due to the fact that he had not used it and had not cooperated in his active motion and exercises as much as we had desired. There was a very slight loss of complete abduction of the left shoulder which was felt would be completely relieved in another few months' time. There was complete regeneration of the radial nerve and at that time there was normal extension of the wrist joint and also normal abduction and extension of the thumb.

Conclusions: This is a case report of a fracture of the mid-portion of the shaft of the left humerus with the frequent and common complication of radial nerve injury. This nerve injury is the most frequent serious complication of fractures of the shaft of the humerus. The reason for this complication is because of the intimate relationship of the nerve to the humerus where it lies in the musculospiral groove. This case was treated by a hanging cast with traction over the end of the bed during the period that the patient was required to be in bed, and with the weight of the hanging cast acting as a traction mechanism after the patient was allowed to be ambulatory. No surgical intervention or exploration of the radial nerve was required and the patient's nerve made a complete and uneventful recovery. This serious fracture required a long period of immobilization in plaster, and a very long period of physiotherapy, occupational therapy, and psychotherapy. The end result was excellent with a very small degree of permanent change which, in our opinion, was not disabling. This represents a simple method of handling a common injury with a serious complication. Obviously, had the radial nerve been completely torn across at the time of injury, surgical intervention with suturing of the nerve would have been required. This case demonstrated that there may be complete interruption of nerve function without complete severance of the nerve.

Outline of Management of Low Back Sprains (By Dr. J. Huber Wagner)

In all cases of low back sprains or low back pain it is very important to obtain a detailed history from the patient. In cases where an accident is involved this should include when and where the injury took place and the exact mechanism of the injury, i.e., was the patient bending over, was he erect, did he slip, was he carrying a heavy weight, did he suddenly twist, was he lifting in a stooped position, did he fall and land in an awkward position, etc? This is of importance as it often gives one a lead as to what type of stress or strain was involved in the production of the injury.

For the sake of discussion, these cases will be divided into two main categories—acute and chronic, and the management of each will be given independently.

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ACUTE:

Signs and symptoms—

1. Pain in low back region.
2. Spasm of erector spinae muscles.
3. Loss of lumbar curve with flattening of back.
4. Limitation of motion in flexion, extension, hyperextension, rotation and laterally.
5. Back moves as a unit rather than as a group of segments.
6. Posture and carriage is one of a partially slouched nature so as to protect the low back region.
7. Tenderness usually elicited over lumbosacral and/or sacroiliac joint areas.
8. Usually find a tenseness of the erector spinae muscles in this area with occasionally presence of a serous effusion.
9. Presence of hamstring spasm in the greater number of these cases.

X-Ray findings—

1. AP view usually negative although at times a scoliosis to one side or the other may be noted; this is often due to muscle spasm.
2. In lateral view there is a flattening of the lumbar lordosis with loss of normal convexity.

Treatment—

1. Injection of the lumbosacral area as well as the lower lumbar and upper sacral areas of the back is the treatment of our choice. In this procedure 1% Procaine is injected into the region of the posterior lamina, infiltrating the erector spinae muscles in the region of the lower three or four lumbar and the 1st and 2nd sacral nerve roots. This procedure is carried out unilaterally or bilaterally as the case may demand and about 2-3 cc of the solution is injected at each of the nerve root areas so as to block the posterior or sensory nerve roots, relieving the patient of pain.
2. The patient is then immediately sent to the physiotherapy department where deep heat in the form of moist air is given for 20-30 minutes. Following this, graduated muscular contractions are given. The amount of stimulation is controlled by the physiotherapist so that a good muscular contraction is obtained in a gradual manner without pain to the patient. Gentle massage is then given over this area for 15 minutes.
3. The patient is then immediately made ambulatory with no strapping or braces and active motion is instituted and insisted upon. The patient is shown these exercises which consist of bending forward to touch the floor, bending backwards laterally, making a circle by bending at the waist, rocking in a rocking chair, and sitting in a straight back chair and bending over to touch the toes of the left foot with the right hand and the toes of the right foot with the left hand.
4. In cases which do not respond to this type of therapy within a period of 3-5 days, manipulation under anesthesia is then carried out. This consists of hyper-rotation of the back both to the right and to the

left. Physiotherapy as described above is then given daily. These manipulations are carried out in the operating room under deep pentothal anesthesia supplemented by curare.

This regimen is sufficient for treating the greater number of this type of case and usually no other treatment will be necessary. However, a few cases do not respond satisfactorily and go on to a chronic stage, the management of which will be discussed shortly. In addition to this small group, the remainder of cases which fall in this latter category are those which were not seen by us originally but are those which were in the chronic phase when first examined in our clinic.

CHRONIC:

Signs and symptoms—

1. Fixation of the low back region with all motion being as one solid unit.
2. Marked flatness of the lumbar area with occasionally a tendency toward kyphosis.
3. No tenderness can be elicited in most instances.
4. Limitation of motion is marked as above but is less painful.
5. Patient may or may not have a list of the pelvis and/or a lumbar scoliosis, secondary to the chronic spasm of the erector spinae muscles.
6. Hamstring spasm of various degrees.
7. No reflex changes.

X-Ray findings—

Essentially the same as in the acute cases.

Treatment—

1. Manipulation as described previously, these manipulations being carried out under pentothal anesthesia, usually about one week apart. The number of manipulations necessary varies with the individual case with the average case having two or three and being in the hospital from two to three weeks.
2. Manipulations are followed on the same day by physiotherapy as described in detail above and these treatments are continued daily throughout the patient's stay in the hospital.
3. Active motion is instituted following the physiotherapy treatment on the day of manipulation and the patient is instructed and is made to carry out these exercises throughout his entire stay in the hospital.
4. Following discharge from the hospital, a small percentage of these cases are asked to report back for physiotherapy; usually about three times a week these treatments are given to them as an outpatient for one or two weeks before they are returned to work.
5. Patient is then returned to light work and is rehabilitated to his regular work as his back responds. This period is quite variable and indefinite and ranges from several days following discharge from the hospital to several weeks.

The above regimen is only for acute and chronic low back sprains and strains and is not to be used as a therapeutic measure in cases of spondylo-
listhesis, subluxation of lumbar vertebrae or ruptured intervertebral discs.

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In addition to this, may we add that all of these cases are thoroughly studied prior to manipulation, a detailed history is obtained, a complete physical and neurological examination is carried out, X-rays are taken and reviewed for the presence of any bony pathology. When the definite diagnosis of a pure sprain is made then this treatment is instituted. In those cases where ruptured intervertebral discs are suspected, they are further studied by means of myelograms and treatment is carried out as indicated.

Respectfully submitted,

COMMITTEE ON FRACTURES,
DUNCAN EVE, M. D., *Chairman*.

(Dr. Eve read Case Histories Nos. 1 and 2 as they appeared in the Report and then called on Dr. Wagner to present his portion of the Report.)

DR. J. HUBER WAGNER (Chief Surgeon, Bessemer & Lake Erie Railroad):
Mr. Chairman and Gentlemen:

The hour is getting late, and you all have a copy of this outline I made of management of low back sprains and low back pain, so I won't read it unless you care to have me do so. It is pretty well self-explanatory. It is the method that we use in our own particular clinic. I have personally used it for a period of twenty years or so and it does put in treatment of these low back pains and strains by the injection method.

We evaluate our cases as to the possibility of what the pathological lesion is relative to the injury sustained, whether it be direct, indirect or what not, what particular motion he was in, and then try to visualize what might have taken place in these muscles, believing that the fundamental cause of pain is the tearing first of muscles themselves with an infusion into the muscle sheath, pressure on torn nerves and so forth, and the fixation of the back so that the patient can't move because of pain. He assumes a certain position.

We treat these cases immediately by the injection into these muscles, so that they are relieved of pain, and then ask them to exercise as much as they can to carry on the normal physiology of the muscles, believing that with action of the muscles the effusion is milked out. There will be a minimum fibrosis, and the patient can return or keep to his work in many instances.

We use in that injection, as outlined in the paper, one-half of one per cent Procaine for the immediate effect, and we also inject in there a proprietary called Serapin made from a Peruvian tree bark which acts as a slow anesthetic. When the Procaine is gone, the Serapin takes on. This is the theory of it. The fact of the matter is it acts as a prolonged local anesthetic, permitting the patients to go about and be free from pain.

I am sorry I didn't bring pictures with me. I could show you one, ten days. We took a picture of him. He was all bent over, listing to one side, the normal lumbar curve obliterated, and walked around like this. We gave him that injection and forty minutes later took a picture where he was straight as he was beforehand. He could bend over, touch his knees,

and following physiotherapy treatment was able to go back to his work. After a period of treatment for ten days we lost sight of him. He was completely well.

We get chronic cases. The pain is not so bad, and there is not so much restriction in the movement, but free movement is restricted. We believe these are due to these cases that have been fixed and permitted to be strapped and/or put in casts or what have you, and then permitting this effusion that takes place in this muscle sheath to organize into fibrous tissue.

We treat those things by manipulation, hyperrotation of the shoulders and the pelvis, the shoulder one way and the pelvis the other. We do it on the opposite side so that we believe we are breaking up the adhesions that may be there and creating an acute sprain from a chronic sprain.

Then we go along and treat them the same as we do an acute sprain. We also use in this milking out process or attempt to get physiological motion of the muscles of the back the Morton Smart machine. This causes a physiological contraction of the muscles without pain unless you carry it to the extreme limits, and that permits the patient again to realize he can move his back and by motion he really gets himself well.

The manipulative treatment is after the method advised by Bankhart. He is an M.D. manipulator, M.D. of England. You probably know him better than I, but we follow his treatment. We have gotten good results in this.

This paper speaks for itself. I have been questioned several times as to, "Well, how do you know what pathology takes place? What is the pathological lesion that you find?" I don't know.

The only thing I do know is that it is comparable to a charleyhorse. If any of you have ever had a charleyhorse, you know that when you use that charleyhorse and use it within limits, that it gets well faster than if you leave it alone and let it go on to fibrosis.

Of course, in these back cases we treat acute and chronic sprains. We rule these out, the other things as such, as fracture of the ilium, dislocation, subluxation which is very unusual without fracture, nucleus herniation, spinal lordosis, congenital deformities and so forth. We rule those things out before we do any treatment.

We are talking about treatment of the acute back sprain and chronic back sprain.

On an average, I suppose probably, in our particular hospital we run about 60 patients, and I would dare say you could go in there and you would see at least six or eight back cases all the time. They are transitory. They are not the same ones; understand, but they are transitory and they keep on coming and going, so we have too many of them.

I don't know what percentage of our overall treatment are back cases, but I know that one is too many. This is a method of treatment that has helped us materially.

I think it has helped us too well. I get too many back cases referred to me, and I don't like them. They are the most troublesome things you have in the way of treatment, but if you care to read this or if you have read it and don't believe it, I will be glad to argue it with you. If you want to go further than that, I can invite you to come down and see us.

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DR. NEUPAUER: How much do you usually inject, how much Procaine and Serapin?

DR. WAGNER: Usually in back cases 10 to 15 cc. We take 5 cc of Procaine and 5 cc of Serapin. We equal it up, so you get a half per cent Procaine solution. And then the manipulative treatment is proper, and I also should say, I missed something in this particular briefing.

We use a moist heat in our physiotherapy. We use moist heat that will raise the local temperature of the back up to—whatever part of the body it is—108 to 110 degrees with sometimes the entire systemic reaction going up as high as 101 or 105 for a period of forty minutes to an hour.

What is the rationale back of it? We believe by creating a hyperemia nature aids in absorbing the effusion.

DR. NEUPAUER: How often do you give those treatments?

DR. WAGNER: The moist heat? Once every second day or in the very acute cases once every day. We have these in several of our mills. I am talking about the steel mill now rather than from this standpoint, but it is the same trauma, but do them every day. We have had really excellent success with them.

DR. NEUPAUER: Do you say you get them back within about ten or twelve days?

DR. WAGNER: We get the acute back cases back immediately. We get the fellows back on their jobs working immediately.

DR. EVE: The next portion of this report will be Case History No. 3, by Dr. Stockwell.

DR. R. W. STOCKWELL (Chief Surgeon, Grand Trunk Western Railroad): Mr. Chairman and Members, this 23-year old railway switchman was rolled between the side of a box car and back wall and sustained severe injuries.

It is a crushing type of thing. This young man sustained fractures of all of his upper eight ribs (showing slide) and initially did not have a pneumothorax but developed it later during the course of the treatment. At the same time he sustained a fracture of the pelvis, fracturing the superior and inferior rami of the pubic bone and rupturing the urethra just below the prostate.

The injury that we are discussing today primarily was the comminuted fracture of the mid portion of the shaft of the humerus with an associated musculospiral or radial nerve paralysis.

From the scene of the injury he was taken to Harper Hospital where multiple blood transfusions were given and he was placed in oxygen and his condition was rather critical for some time.

For that reason the first aid splint which you see was applied. The Thomas arm splint was used as a temporary measure and continued for some time because of the patient's general condition.

After eight hours of treatment for his shock and unsuccessful attempt to catheterize the bladder, he was taken to the operating room and the

suprapubic cystotomy and retrograde catheterization of the urethra accomplished.

Because of his severe condition nothing was done about the fractured humerus for some time.

About twelve days later we utilized the so-called hanging cast inasmuch as it was the simplest method we thought that we could use at that time, and in a patient who couldn't be out of bed for a period of months it was obvious we could use the simple traction of the cast. So a loop was made and placed at the elbow for traction. Weights were attached to the cast and carried over the end of the bed.

The same type of traction obtained as when the man is up walking about with the weight of the cast. His condition was not good.

He developed pneumonia and ileus and we let up on the traction because of his general condition, and you can see that during the course of his treatment he developed some anterior angulation which could be very simply corrected by adding a little more weight which was done. This general type of alignment was satisfactory and maintained during the rest of his hospital stay.

As commonly occurs in the fractures in the junctures of the lower third and middle third of the humerus and the same as in fractures of the junction of the lower and middle thirds of the tibia, there is delayed union and that was true in this case at this time.

He had fairly good callus, and we felt that no further support was required. After prolonged immobilization because of this delayed union, active physiotherapy was carried out which consisted of hydrotherapy, massage and active and passive exercises.

The radial nerve paralysis was noted on admission to the hospital, and the question immediately comes up as to whether the radial nerve is lacerated, intused, or function interfered with, whether passage of time will permit regeneration of the nerve or whether open operation with inspection of the nerve will be required.

There was no problem in this case because the general condition wouldn't permit the operative intervention until there were definite signs of regeneration of the nerve, and although he had evidence of complete interruption of function, within four weeks we could see some improvement in sensation over the areas involved, and there was gradual progression of improvement of his muscular power.

The question of rehabilitation of this type of patient, I think, is something that concerns all of us. This man within a year had made a good clinical recovery. His nerve function had been completely restored. He did have some disuse atrophy, but he was a train man and being a train man he had to be handled differently from the ordinary individual who has a similar injury.

I say that for this reason that within six hours of his injury his case has been placed in the hands of attorneys from this city, and we had to lean on our files from them for future handling of his case, and there was no incentive for him to return to work. In other words, he was interested

in his settlement and he knew he would get a good settlement and would receive his full pay for the full period off.

We had great difficulty in getting the man to use his arm and participate in the active and passive exercises that are required in a severe injury that has had such prolonged immobilization.

It is a very common injury with a common complication, and I think that it is an illustration of a case where the radial nerve may be severely contused, where function may be completely restored without operative intervention.

Dr. Evz: Thank you, Dr. Stockwell, and Dr. Wagner, too, for both your excellent presentations.

(There followed a brief, off-the-record discussion of the report in general.)

THE CHAIRMAN: Thank you, Dr. Eve. You and your Committee are to be congratulated for your very fine discussion on fractures by giving us such case presentations.

Is there any unfinished business to come before the Section? Is there any new business to come up? If not I am going to ask Dr. Hursh to come forward as our new Vice-Chairman. Not here? Then I will call on Dr. Hansen as your new Chairman. Will you come forward, Ted? (Applause)

I want to give you my best wishes for your new job, and you will find it a busy job, as you know about already. I want to assure you that the members of the Committee of Direction will help you out in every way possible.

CHAIRMAN-ELECT DR. T. L. HANSEN (Chief Surgeon, Chicago, Rock Island & Pacific Railroad): Thank you very much, Dr. Metz. I want to thank all of you for extending me this honor. It is going to be a position that is going to be hard to fill with the illustrious predecessors that I have to follow, but I know that with the rest of the members of the Committee of Direction, as well as the personnel, the Chief Surgeons of the railroads, they will all work together. I am sure everything will go along very well. At least, we will try.

THE CHAIRMAN: I might say one thing right here. I am doing this for Ted. There has been some discussion as to the time and place for your meeting next year. You will all realize that we are meeting here on Monday prior to the meeting of the American Association of Railway Surgeons and instead of planning a two-day meeting and a scientific session, we planned it so that everybody who is interested in attending a scientific session will get a three-day program following right on tomorrow, Wednesday and Thursday, with a banquet Wednesday night to which you are invited.

It appears desirable to have this meeting in Chicago just prior to the American Association of Railway Surgeons as we seem to have a larger attendance in Chicago because of its location, than we do elsewhere, but we could go to Atlantic City or White Sulphur Springs or Biloxi or San

Francisco or any place you may choose. Let's have the hands on those who prefer to meet in Chicago as compared with other parts of the country.

(A show of hands indicated a majority of those present preferred Chicago for the site of the next Annual Meeting.)

CHAIRMAN-ELECT DR. HANSEN: If there is no further business to come before this meeting, I will now declare the Thirty-first Annual Meeting of the Medical and Surgical Section adjourned.

(The meeting adjourned sine die at 5:00 o'clock, Monday, April 2, 1951.)

H. S. DEWICHES,
Secretary.

DR. ARTHUR R. METZ,
Chairman.

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**REPORT OF COMMITTEE ON NOMINATIONS AT
1951 ANNUAL MEETING AND ELECTION OF MEMBERS
TO THE COMMITTEE OF DIRECTION**

DR. WILLIAM T. DAVIS (Chief Medical Officer, Delaware, Lackawanna and Western Railroad). Mr. Chairman and gentlemen, your Committee on Nominations met March 19th at the Congress Hotel in Chicago and the following members were present: Dr. B. I. Derauf, Chief Surgeon, Northern Pacific; Dr. J. W. Houk, Medical Director, New York, Chicago & St. Louis; Dr. R. S. Kieffer, Chief Surgeon, Missouri-Kansas-Texas; and Dr. Ray S. Westline, Chief Surgeon, Belt Railway Company of Chicago.

In line with the Rules of Order and taking into consideration the allocation of nominees for the Committee of Direction, we have selected the following members for ballot:

ASSOCIATION OF AMERICAN RAILROADS

MEDICAL AND SURGICAL SECTION

ANNUAL MEETING—APRIL 2, 1951

BALLOT FOR MEMBERS OF COMMITTEE OF DIRECTION

(Indicate by an 'X' the names voted for)

Eastern Territory (2 Year Term—Vote for One)

☐	Dr. I. Goldowsky, Medical Director Central Railroad Company of New Jersey
☐	Dr. A. Noneman, Chief Medical Officer Reading Company
☐	Dr. B. W. Stockwell, Chief Surgeon Detroit & Toledo Shore Line Railroad

Southern Territory (3 Year Term—Vote for One)

☐	Dr. Duncan Ewe, Chief Surgeon Nashville, Chattanooga & St. Louis Railway
☐	Dr. C. F. Holton, Chief Surgeon Central of Georgia Railway
☐	Dr. V. A. Lockwood, Chief Surgeon Florida East Coast Railway

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DEWITTIST,
Secretary.

Western Territory (3 Year Terms—Vote for Three)

	Dr. R. M. Graham, Director, Dept. San. & Surgery The Pullman Company
	Dr. Wm. Hibbitts, Chief Surgeon St. Louis Southwestern Railway Lines
	Dr. E. A. Hinds, Chief Surgeon Denver & Rio Grande Western Railroad
	Dr. O. H. Horrall, Chief Surgeon Chicago, Burlington & Quincy Railroad
	Dr. A. R. Metz, Chief Surgeon Chicago, Milwaukee, St. Paul & Pacific RR.
	Dr. J. K. Stuck, Chief Surgeon Chicago & North Western Railway
	Dr. W. W. Washburn, Chief Surgeon Southern Pacific Company

DR. DAVIS: We respectfully submit these names to the membership.

THE CHAIRMAN: We will have the ballots available in just a few minutes.

THE SECRETARY: Gentlemen, in connection with the ballots, it is necessary that only one man for a railroad—or whatever number of railroads he represents—make out a ballot. If the chief of the department is here, then presumably he will do so unless he designates some one else for his railroad. The ballot should be completed as called for and replaced in this envelope. It is necessary that you simply show your name and the name of the railroad or railroads that you represent.

(The Chairman then appointed as tellers, Doctors R. J. Bennett, Jr., Chief Surgeon, Elgin, Joliet & Eastern Railway; J. F. Deprec, Chief Surgeon (Lines West), Chicago, Milwaukee, St. Paul & Pacific Railroad; and V. W. Hollo, Chief Surgeon, St. Louis-San Francisco Railway, to count the ballots. At the opening of the Second Session, Dr. Bennett presented the Report of Tellers, as follows):

DR. R. J. BENNETT, JR. (Chief Surgeon, Elgin, Joliet and Eastern Railway):

Gentlemen, the results of the voting are as follows:

Eastern Territory (2 Year Term)
Dr. I. Goldowsky, Medical Director
Central Railroad Company of New Jersey
Southern Territory (3 Year Term)
Dr. Duncan Eve, Chief Surgeon
Nashville, Chattanooga & St. Louis Railway
Western Territory (3 year Terms)
Dr. R. M. Graham, Director, Department of Sanitation and Surgery
The Pullman Company

Dr. A. R. Metz, Chief Surgeon
Chicago, Milwaukee, St. Paul & Pacific Railroad
Dr. W. W. Washburn, Chief Surgeon
Southern Pacific Company

THE CHAIRMAN: The representatives which have just been named along with the remaining Members of the Committee of Direction will constitute the personnel of that Committee for the coming year.

It will now be necessary for this committee to meet in the adjoining room for a few minutes to select their Chairman and Vice-Chairman, and there will be a recess for a few minutes. I will ask Dr. Bennett, Dr. Dowd, Dr. Eve, Dr. Graham, Dr. Hursh, Dr. Mishler, Dr. Wagner, Dr. Goldowsky and Dr. Washburn to meet out here in Room G for just a few minutes to elect your officers. Then we will be back and we can carry on.

(A short recess was taken.)

THE CHAIRMAN: I might report that Dr. T. L. Hansen, Chief Surgeon, Chicago, Rock Island & Pacific Railroad has been made Chairman of the Committee of Direction and Dr. A. M. W. Hursh, Chief Medical Examiner, Pennsylvania Railroad has been elected Vice-Chairman. They will carry on after this meeting is over today.

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**OFFICERS AND PERSONNEL OF COMMITTEES OF THE
MEDICAL AND SURGICAL SECTION FOR THE YEAR 1951-1952**

Dr. T. L. Hansen, Chairman
Dr. A. M. W. Hursh, Vice-Chairman
H. S. Dewhurst, Secretary

Committee of Direction

Dr. T. L. Hansen, Chairman
Dr. A. M. W. Hursh, Vice-Chairman

(Term expires in 1952)

Dr. M. B. Clayton, Chief Surgeon, Southern Railway System, Washington, D. C.
Dr. K. E. Dowd, Chief Medical Officer, Canadian National Railways, Montreal, Quebec, Canada.
Dr. T. L. Hansen, Chief Surgeon, Chicago, Rock Island and Pacific Railroad, Chicago, Illinois.
Dr. J. Huber Wagner, Chief Surgeon, Bessemer and Lake Erie Railroad, 1027 Carnegie Bldg., Pittsburgh 19, Pennsylvania.

(Term expires in 1953)

Dr. R. J. Bennett, Jr., Chief Surgeon, Elgin, Joliet & Eastern Railway, 208 South La Salle Street, Chicago, Illinois.
Dr. A. M. W. Hursh, Chief Medical Examiner, Pennsylvania Railroad System, 15 North 32nd Street, Philadelphia 4, Pennsylvania.
Dr. W. E. Mishler, Chief Surgeon, Erie Railroad, 608 Republic Building, Cleveland 1, Ohio.
Dr. I. Goldowsky, Medical Director, Central Railroad of New Jersey, Jersey City, New Jersey.

(Term expires in 1954)

Dr. Duncan Eve, Chief Surgeon, Nashville, Chattanooga & St. Louis Railway, Nashville, Tenn.
Dr. R. M. Graham, Director, Department of Sanitation and Surgery, The Pullman Company, Chicago, Illinois.
Dr. A. R. Metz, Chief Surgeon (Lines East), Chicago, Milwaukee, St. Paul & Pacific Railroad, Chicago, Illinois.
Dr. W. W. Washburn, Chief Surgeon, Southern Pacific Company, San Francisco 17, California.

Committee on Disability and Rehabilitation

Dr. James K. Stack (Chairman), Chief Surgeon, Chicago & North Western Railway, 127 North Clinton Street, Chicago 6, Illinois.

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EAR 1951-1952

- Dr. J. F. DePree, Chief Surgeon (Lines West), Chicago, Milwaukee, St. Paul & Pacific Railroad, 407 Medical Arts Building, Seattle 1, Washington.
- Dr. S. M. English, Medical & Surgical Director, Room 217 B&O Central Building, Baltimore 1, Maryland.
- Dr. R. S. Kieffer, Chief Surgeon, Missouri-Kansas-Texas Railroad, St. Louis 1, Missouri.
- Dr. W. W. Washburn, Chief Surgeon, Southern Pacific Company, Hospital Department, 1400 Fell Street, San Francisco 17, California.

Committee on Fractures

- Dr. B. W. Stockwell (Chairman), Chief Surgeon, Detroit & Toledo Shore Line Railroad, Detroit, Michigan.
- Dr. Ralph G. Carothers, Chief Surgeon, Cincinnati, New Orleans & Texas Pacific Railway, Cincinnati 2, Ohio.
- Dr. Duncan Eve, Chief Surgeon, Nashville, Chattanooga & St. Louis Railway, 2001 Hayes Street, Nashville 4, Tennessee.
- Dr. C. F. Holton, Chief Surgeon, Central of Georgia Railway, Savannah, Georgia.
- Dr. J. Huber Wagner, Chief Surgeon, Bessemer & Lake Erie Railroad, 1027 Carnegie Bldg., Pittsburgh 19, Pennsylvania.

Committee on Developments Resulting from Physical Examinations

- Dr. R. J. Bennett, Jr. (Chairman), Chief Surgeon, Elgin, Joliet & Eastern Railway, 208 South La Salle Street, Chicago, Illinois.
- Dr. J. J. Brundage, Chief Medical Examiner, Chesapeake & Ohio Ry., Huntington, West Virginia.
- Dr. B. I. Derauf, Chief Surgeon, Northern Pacific Ry., St. Paul 1, Minnesota.
- Dr. O. H. Hornell, Chief Surgeon, Chicago, Burlington & Quincy Railroad, 547 West Jackson Boulevard, Chicago 6, Illinois.
- Dr. K. C. Walden, Superintendent and Medical Director, Relief Department, Atlantic Coast Line Railroad, Wilmington, North Carolina.
- Dr. R. S. Westline, Chief Surgeon, Chicago & Eastern Illinois Railroad, 334 West 63rd Street, Chicago, Illinois.

Committee on Medical Aspects of Air Conditioning of Cars

- Dr. R. M. Graham (Chairman), Director, Department of Sanitation and Surgery, The Pullman Company, Merchandise Mart Plaza, 22 West North Bank Drive, Chicago 54, Illinois.
- Dr. M. B. Clayton, Chief Surgeon, Southern Railway System, 15th and K Streets N.W., Washington, D. C.
- Dr. Charles B. Fenwick, Chief of Medical Services, Canadian Pacific Railway, Windsor Station, Quebec, Canada.

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**Representatives of the Medical and Surgical Section
on the Joint Committee on Railway Sanitation**

Dr. H. M. Graham, Director, Department of Sanitation and Surgery, The Pullman Company, Chicago, Illinois.

Dr. M. B. Clayton, Chief Surgeon, Southern Railway System, Washington, D. C.

Dr. A. M. W. Hursh, Chief Medical Examiner, Pennsylvania Railroad, Philadelphia, Pennsylvania.