

## MINERS' CIRCULARS

- †MC 2. Permissible Explosives Tested Prior to January 1, 1911, and Precautions to be Taken in Their Use, by Clarence Hall. 1911. 12 pp.
- †MC 3. Coal-Dust Explosions, by G. S. Rice. 1911. 22 pp. Calls attention to how coal dust is produced in mining and how coal-dust explosions originate and are propagated; summarizes means by which such explosions may be prevented. (Superseded by MC 21.)
- †MC 4. The Use and Care of Mine Rescue Breathing Apparatus, by J. W. Paul. 1911. 28 pp., 5 figs. Superseded by handbook entitled "Self-Contained Oxygen Breathing Apparatus."
- †MC 5. Electrical Accidents in Mines, Their Causes and Prevention, by H. H. Clark, W. D. Roberts, L. C. Ilsley, and H. F. Randolph. 1911. 16 pp., 4 figs. Presents suggestions as to measures that mine foremen, mine electricians, and miners should take to prevent electrical accidents. Also gives directions for the treatment of shock.
- †MC 6. Permissible Explosives Tested Prior to January 1, 1912, and Precautions to be Observed in Their Use, by Clarence Hall. 1912. 20 pp.
- †MC 7. The Use and Misuse of Explosives in Coal Mining, by J. J. Rutledge. 1913. 52 pp., 8 figs. Describes precautions to be observed in handling and using permissible explosives and black blasting powder in mines.
- †MC 8. First-Aid Instructions for Miners, by M. W. Glasgow, W. A. Raudenbush, and C. O. Roberts. 1913. 67 pp., 51 figs. (Superseded by MC 23.)
- †MC 9. Accidents from Falls of Roof and Coal, by G. S. Rice. 1912. 18 pp. Calls attention to the high death rate from roof falls in coal mines and the precautions to be taken by miners and mine foremen.
- †MC 10. Mine Fires and How to Fight Them, by J. W. Paul. 1912. 14 pp. Gives common causes of fires and describes fire-fighting methods.
- †MC 11. Accidents from Mine Cars and Locomotives, by L. M. Jones. 1912. 16 pp. Gives precautions that should be followed in traveling haulage roads and in handling mine cars.
- †MC 12. Use and Care of Miners' Safety Lamps, by J. W. Paul. 1913. 16 pp., 4 figs. Describes proper methods of examining, cleaning, and filling safety lamps and of testing for gas in a mine.
- †MC 13. Safety in Tunneling, by D. W. Brunton and J. A. Davis. 1913. 19 pp. Contains suggestions to superintendents, foremen, and miners on the prevention of accidents.
- †MC 14. Gases Found in Coal Mines, by G. A. Burrell and F. M. Seibert. 1914. 23 pp. Describes the gases and their effects on men.
- †MC 15. Rules for Mine Rescue and First-Aid Field Contests, by J. W. Paul. 1913. 12 pp. Recommends rules that have been found satisfactory.
- †MC 16. Hints on Coal-Mining Ventilation, by J. J. Rutledge. 1914. 22 pp. Mentions some of the causes of poor ventilation and states what the miner can do to insure good air.
- †MC 17. Accidents from Falls of Rock and Ore, by Edwin Higgins. 1914. 15 pp., 8 figs. Revised as MC 41.
- †MC 18. Notes on Miners' Carbide Lamps, by J. W. Paul. 1915. 11 pp. Gives suggestions to the miner, mine foreman, and others on the use and care of carbide lamps.
- †MC 19. The Prevention of Accidents from Explosives in Metal Mining, by Edwin Higgins. 1914. 16 pp., 11 figs. Gives suggestions on the storage, handling, and use of fuse, detonator, and explosives.
- †MC 20. How a Miner Can Avoid Some Dangerous Diseases, by A. J. Lanza and J. H. White. 1916. 26 pp., 4 figs. Points out the danger from various diseases and the precautions that should be taken.
- †MC 21. What a Miner Can Do to Prevent Explosions of Gas and Coal Dust, by G. S. Rice. 1915. 24 pp. (Supersedes MC 3.) Shows how miners can avoid careless practices.
- †MC 22. Dangerous and Safe Practices in Bituminous Mines, by Edward Steidle. 1919. 110 pp., 181 figs. Shows, by numerous pictures, good and bad practice in coal mining, and emphasizes the measures that should be taken to increase safety.
- †MC 23. Elementary First Aid for the Miner, by W. A. Lynott and D. Harrington. 1916. 24 pp., 19 figs. (Supersedes MC 8.) Also printed in Italian, Polish, and Slovak. Superseded by Advanced First-Aid Instructions for Miners.
- †MC 24. Miners' Safety and Health Almanac for 1919, by R. C. Williams. 1918. 48 pp., 7 figs. Contains numerous suggestions on the preservation of health and the prevention of disease.
- †MC 25. Erection of Mine Barricades During Mine Fires or After Explosions, by J. W. Paul, B. O. Pickard, and M. W. von Bernewitz. 1923. 28 pp., 3 pls., 12 figs. Shows how miners who may be trapped in a mine by an explosion or a fire may escape death by sealing themselves behind well-constructed barricades, bulkheads, or stoppings. (See MC 42R.)
- †MC 26. Miners' Safety and Health Almanac for 1920, compiled by R. C. Williams. 1919. 51 pp., 15 figs. Contains numerous suggestions on the prevention of disease and the preservation of health.
- †MC 27. Causes and Prevention of Fires and Explosions in Bituminous-Coal Mines, by Edward Steidle. 1920. 75 pp., 117 figs. A series of pictures illustrates dangerous practice and proper and safe practice. A brief description setting forth the lesson taught accompanies each picture.
- †MC 28. Sanitation in Mines, by R. R. Sayers. 1924. 16 pp., 3 pls. Discusses drinking water, sewage disposal and ventilation.
- †MC 29. Misuse of Flame Safety Lamps and Dangers of Mixed Lights, by L. C. Ilsey. 1925. 12 pp., 2 pls. Shows how explosions have been caused by the abuse or misuse of flame safety lamps or by the use of open lights and safety lamps in the same mine.
- †MC 30. Use of the Miners' Self-Rescuer, by S. H. Katz and J. J. Forbes. 1928. 26 pp., 23 figs. Tells about the construction and use of self-rescuers and describes four underground safety systems for distributing them.
- †MC 31. Questions and Answers on Timbering Bituminous-Coal Mines, by J. W. Paul. 1928. 32 pp., 31 figs. Discusses simplified timbering practice. The questions and answers are supplemented with sketches of mine timbers, principally props, caps, wedges, and crossbars or collars, for support of im-

†Out of print.

- mediate roof in rooms and entries and on lines of pillar extraction. (Superseded by MC 40.)
- †MC 32. Use of a type N Miners' Gas Mask, by S. H. Katz and G. S. McCaa. 1929. 29 pp., 14 figs. Describes the gases found in mines and the all-service gas mask, and outlines the organization and methods under which crews equipped with gas masks should operate in mines.
- MC 33. Mine Gases and Methods for Detecting Them (Revised March 1954), by J. J. Forbes and G. W. Grove. 1954. 82 pp., 27 figs. Revision of the first of a series of miners' circulars originally published in 1929 designed to be used in a course of training to prepare mine officials to organize men for rescue and recovery operations, circular discusses nature and occurrence of mine gases and mixtures of gases and various methods for detecting them. Gives particular attention to flame safety lamps; methane-indicating instruments; various types of carbon-monoxide detectors; methods for detecting atmospheres deficient in oxygen or containing accumulations of blackdamp; and methods for detecting hydrogen sulfide, oxides of nitrogen, and sulfur dioxide. Circular was revised in 1937 and 1948. 55 cents.
- MC 34. Sampling and Analysis of Mine Atmospheres, by L. B. Berger and H. H. Schrenk. 1948. 103 pp., 27 figs. Revision of Miners' Circular 34, Sampling Mine Gases and Use of the Bureau of Mines Portable Orsat Apparatus in Their Analysis (Revised June 1936), by W. P. Yant and L. B. Berger. Second of series of miners' circulars to be used in course of training that will prepare mine officials to organize men for mine rescue and recovery operations. Describes Bureau of Mines methods of sampling mine atmospheres and use of portable Orsat apparatus for analyzing mine atmospheres. 25 cents.
- MC 35. Protection Against Mine Gases, by J. J. Forbes and G. W. Grove, Revised 1954, by W. Dan Walker, Jr., S. J. Pearce, A. E. Morrow, and L. B. Berger. 1954. 58 pp., 25 figs. Revision of the third of a series of miners' circulars originally issued in 1929 for use in a course of training to prepare mine officials to organize men for rescue and recovery operations, circular discusses erection of barricades during mine fires or following mine explosions; respiratory protective equipment, including the self-rescuer, gas masks, and self-contained breathing apparatus; and resuscitation. Its object is to acquaint men thoroughly with the various methods and devices used for protection against mine gases. Circular was revised in 1937 and 1948. 55 cents.
- MC 36. Procedure in Sealing and Unsealing Mine Fires and in Recovery Operations Following Mine Explosions, Revised May 1948, by J. J. Forbes and G. W. Grove. 1948. 84 pp., 27 figs. Last of series of four miners' circulars to be used in course of training that will prepare mine officials to organize men for rescue and recovery work. Discusses organization, equipment and materials, and procedure in fighting, sealing, and unsealing mine fires and in recovery operations following explosions. Also includes practice problem for recovery procedure. Although data relate primarily to comparatively thin or medium-thick coal beds with little if any pitch, it is believed that procedure for sealing and unsealing mines, together with principles and technique of identifying fire gases, is applicable, with modifications in some instances, to metal mines and coal beds whether thick or thin and with varying pitches. 30 cents.
- †MC 37. Safety Education in Schools of Mining Districts, by F. S. Crawford, A. U. Miller, and C. W. Owings. 1938. 34 pp., 1 fig. Stresses importance of safety education in school courses, particularly in mining districts; gives examples of American Automobile Association loose-leaf safety lessons and of National Safety Council plan for primary, intermediate, and upper grades; outlines Bureau of Mines course in first-aid instruction for high-school students and Bethlehem Steel Co. course for seventh- and eighth-grade pupils; and discusses safety instruction in schools and colleges, school-boy patrols, and school safety organizations, including outline for Minnesota school district.
- MC 38. Some suggestions on Safety in Timbering Anthracite Mines, by R. D. Currie. 1939. 21 pp., 20 figs. States managerial duties and responsibilities in connection with timbering and accidents from falls of roof and coal and lists questions and answers prepared for guidance of Bureau of Mines instructors in presenting Accident Prevention Course for Anthracite Mine Officials prepared by Bureau. 10 cents.
- †MC 39. Central Mine Rescue Stations, by J. J. Forbes, C. W. Owings, A. U. Miller, F. E. Griffith, James Westfield, Jr., E. E. Quenon, and M. L. Williams. 1939. 55 pp., 13 figs. Describes Federal, State, State and private, and private mine rescue stations; discusses training methods and equipment; and outlines State mining laws pertaining to mine rescue equipment.
- †MC 40. Some Information on Timbering Bituminous-Coal Mines, by J. J. Forbes and C. W. Owings. 1939. 37 pp., 37 figs. (Supersedes MC 31.) Greater effort should be made to prevent injuries from falls of roof and coal in mines. Knowledge of what causes roof to fall and of methods to prevent such falls should aid in overcoming this constant hazard. The 154 questions and answers presented in the circular are supplemented with sketches of mine timbers, principally props, caps, wedges, and cross-bars or collars for support of immediate roof at working places, such as in rooms and entries and along lines of pillar extraction.
- †MC 41. Accidents from Falls of Rock or Ore in Metal Mines, by E. H. Denny. 1940. 21 pp. (Revision in part, of MC 17 and RI 2944.) Describes typical accidents from falls of rock and discusses measures that management may take to lessen accidents from falls of rock or ore, as well as steps that individual miners may take to preserve their own lives and those of their fellow workers.
- MC 42. Barricading as a Life-Saving Measure Following Mine Fires and Explosions. Revised December 1946, by D. Harrington and W. J. Fene. 1948. 80 pp., 49 figs. Shows how miners trapped in a mine by an explosion or a fire may escape death by sealing themselves behind well-located and well-constructed barricades, bulkheads, or stoppings. In 1923 MC 25 was issued, giving information on barricading done before that date. 25 cents.
- †MC 43. Some Haulage Safety Devices for Use on Grades, Slopes, and Inclined Shafts, by G. W. Grove, S. H. Ash, and E. J. Ristedt. 1942. 44 pp., 51 figs. Discusses and illustrates various safety devices for use on inclines; considers their adaptability with reference to types of inclines.
- MC 44. Construction, Care, and Use of Permissible Flame Safety Lamps, by A. B. Hooker. 1944. 18 pp., 5 figs. 10 cents.
- †MC 45. Explanation and Justification of Tentative Inspection Standards for Bituminous-Coal Mines and Lignite Mines. 1944. 139 pp. Prepared primarily to assist Federal coal-mine inspectors through explanation and interpretation of the safety recommendations contained in Bureau of Mines IC 7268. Should be of interest to those in industry who are concerned with coal-mine safety. Contains extensive bibliography.

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- MC 46. Explanation of Tentative Inspection Standards for Anthracite Mines. 1945. 118 pp. Prepared primarily to assist Federal coal-mine inspectors through explanation and interpretation of the safety recommendations contained in Bureau of Mines IC 7282, this publication also is of interest to those in industry who are concerned with coal-mine safety. Contains extensive bibliography. 15 cents.
- MC 47. Accident Statistics as an Aid to Prevention of Accidents in Bituminous-Coal Mines. Coal-Mine Accident-Prevention Course—Section 1, Revised February 1948. 1949. 42 pp., 13 figs. Revision of the first in a series of miners' circulars published in 1945, designed to help mine officials and supervisors in studying the tools and techniques of accident prevention. Covers methods of measuring frequency of injuries, classification of injuries, causes and costs of injuries, and corrective measures. 15 cents.
- MC 48. Accidents From Falls of Roof and Coal in Bituminous-Coal Mines. Coal-Mine Accident-Prevention Course—Section 2 (Revised January 1957). 1958. 141 pp., 93 figs. Revision of the second in a series of miners' circulars originally published in 1945 covering various phases of accident prevention in bituminous-coal mines, circular directs attention to conditions and circumstances that contribute to roof-fall accidents in coal mines and suggests practices and regulations to reduce such accidents. 50 cents.
- MC 49. Accidents From Hoisting and Haulage in Bituminous-Coal Mines. Coal-Mine Accident-Prevention Course—Section 3 (Revised March 1954). 1955. 88 pp., 45 figs. Revision of the third in a series of miners' circulars originally published in 1946 constituting a textbook for courses of instruction on accident prevention in bituminous-coal mining, circular deals with causes and prevention of hoisting and haulage accidents. Safe equipment, safe haulage roads, safe auxiliaries, and safe practices are the four haulage safety fundamental requirements. 40 cents.
- MC 50. Explosions and Fires in Bituminous-Coal Mines. Coal-Mine Accident-Prevention Course—Section 4 (Revised March 1954). 1954. 115 pp., 59 figs. Revision of the fourth in a series of miners' circulars originally published in 1946 constituting a textbook for courses of instruction on accident prevention in bituminous-coal mining, circular gives factors responsible for mine fires and explosions and describes methods for preventing these disasters. 50 cents.
- MC 51. Accident Statistics as an Aid to Prevention of Accidents in Metal Mines. Metal-Mine Accident-Prevention Course—Section 1. 1945. 26 pp., 5 figs. First in series covering a variety of phases of accident prevention in metal mines. Deals with the preparation of general statistics on accidents in metal and nonmetal mines, the causes and costs of accidents, and the value of investigating and reporting all accidents. 10 cents.
- MC 52. Accidents From Falls of Rock or Ore at Metal and Nonmetallic Mines. Metal- and Nonmetallic-Mine Accident-Prevention Course—Section 2, revised July 1955 by Edward Thomas and Roy G. Stott. 1957. 85 pp., 67 figs. Revision of the second in a series of miners' circulars originally published in 1945 covering various phases of accident prevention at metal and nonmetallic mines, circular deals with occurrence of accidents and injuries caused by falls of rock or ore and their causes. Also suggests preventive measures that may be employed to guard against and reduce the frequency and seriousness of injuries from this source. 40 cents.
- MC 53. Accidents From Hoisting and Haulage at Metal and Nonmetallic Mines. Metal- and Nonmetallic-Mine Accident-Prevention Course—Section 3 (Revised January 1955), by Frank E. Cash. 1955. 110 pp., 61 figs. Revision of the third in a series of miners' circulars originally published in 1945 on accident prevention in metal and nonmetallic mines, publication presents hazards of hoisting and haulage and means of preventing accidents. 40 cents.
- MC 54. Accidents From Explosives at Metal and Nonmetallic Mines. Metal- and Nonmetallic-Mine Accident-Prevention Course—Section 4 (Revised July 1956), by Frank E. Cash. 1957. 110 pp., 57 figs. Revision of the fourth in a series of miners' circulars originally published in 1945 covering a variety of phases of accident prevention in metal and nonmetallic mines, publication gives information on accidents and injuries due to storing, handling, and using explosives and precautions for preventing them. 75 cents.
- MC 55. Fires, Gases, and Ventilation in Metal and Nonmetallic Mines. Metal- and Nonmetallic-Mine Accident-Prevention Course—Section 5 (Revised January 1955), by Frank E. Cash. 1957. 124 pp., 56 figs. Revision of the fifth in a series of miners' circulars originally published in 1946 covering phases of accident prevention in metal and nonmetallic mines, circular explains causes of fires and measures to prevent, control, and extinguish them; describes mine gases and methods of detection and personal protection; and discusses necessity for and standards of proper ventilation. 65 cents.
- MC 56. Electrical and Mechanical Hazards and Falls of Persons at Metal and Nonmetallic Mines. Metal- and Nonmetallic-Mine Accident-Prevention Course—Section 6, revised March 1955 by Lawrence H. Harrison and Frank E. Cash. 1957. 107 pp., 67 figs. Revision of the sixth in a series of miners' circulars originally published in 1946 covering a variety of phases of accident prevention in metal and nonmetallic mines, circular covers accidents and injuries from electricity and machinery and their prevention. Part I discusses hazards created by bare wires, broken insulation, contact with charged equipment, short circuits, open-type switches, and similar factors. Part II deals with guarding of machinery, maintenance of compressed-air equipment, machine drilling, operation of scraper hoists, and care of handtools. Part III suggests safety precautions. 50 cents.
- MC 57. Health and Miscellaneous Hazards at Metal and Nonmetallic Mines. Metal- and Nonmetallic-Mine Accident-Prevention Course—Section 7, revised June 1956 by Frank E. Cash. 1957. 85 pp., 44 figs. Revision of the seventh in a series of miners' circulars originally published in 1946 covering various phases of accident prevention in metal and nonmetallic mines, circular deals with health, safety organization, and other accident-prevention factors in mines, including supervision, training in safe practices, illumination, and the use of goggles and protective clothing. Also discusses miscellaneous causes of injuries. 40 cents.
- MC 58. Explosives Accidents in Bituminous-Coal Mines. Coal-Mine Accident-Prevention Course—Section 5 (Revised March 1954). 1955. 86 pp., 48 figs. Revision of the fifth in a series of miners' circulars originally published in 1947 forming a textbook on accident prevention in bituminous-coal mining, circular discusses proper methods of storing, handling, transporting, charging, and firing for the prevention of accidents. Describes nonpermissible explosives, permissible explosives, and blasting devices and recommends that permissible explosives be used for blasting coal because they are less likely to ignite the explosive mixtures that may be found in coal mines. 40 cents.

MC 59. Electrical Accidents in Bituminous-Coal Mines. Coal-Mine Accident-Prevention Course—Section 6 (Revised May 1954), by C. L. Brown and E. J. Gleim. 1955. 100 pp., 51 figs. Revision of the sixth in a series of miners' circulars originally published in 1947 forming a textbook for courses of instruction on accident prevention in bituminous-coal mining, circular discusses dangers coincident with transmission of electric power and the installation and operation of electrical machinery at bituminous-coal mines. Includes recommendations for eliminating the dangers or minimizing the hazards. 45 cents.

MC 60. Miscellaneous Accidents in Bituminous-Coal Mines. Coal-Mine Accident Prevention Course—Section 7 (Revised March 1954). 1954. 85 pp., 38 figs. Revision of the seventh in a series of miners'

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circulars originally published in 1947 constituting a textbook for courses of instruction on accident prevention in bituminous-coal mining, circular discusses causes of miscellaneous surface and underground accidents in bituminous-coal mines and gives recommendations for their prevention. 40 cents.

†MC 61. Safe Practices in Mine Hoisting, by D. Harrington and J. H. East, Jr. 1946. 55 pp., 21 figs. Summarizes safe hoisting practices recognized by the mining industry and suggests a number of safety rules that may be used in connection with hoisting. Safe practices in hoisting from mine shafts and slopes, hoist construction, signaling and proper care, installation and utilization of hoisting conveyances for hoisting and lowering mine personnel are discussed, and latest statistical information on frequency and severity of hoisting accidents in coal and noncoal mines is given. Bibliography included.