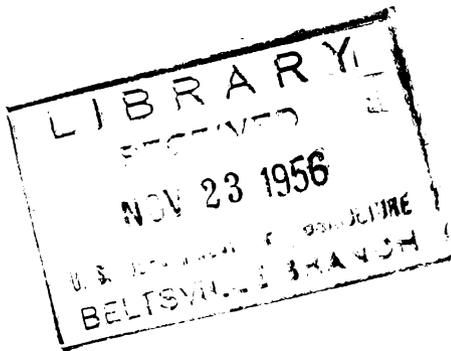


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Glossary of Terms *used in* Forest Fire Control



Agriculture Handbook No. 104

Forest Service

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREWORD

Standard definitions are needed for special terms peculiar to any profession, art, or science. Uniform terminology is essential for comprehensive interchange of ideas between workers either by word of mouth or by writing.

New terms and concepts have been introduced in fire control in the United States since 1939, when the second edition of "Glossary of Terms Used in Fire Control" was published. More concise meanings have furthermore developed for some old and accepted terms, whereas other terms have become obsolete. About 100 new definitions have been added and about 200 former definitions have been revised in wording or meaning.

This third edition of the glossary is intended primarily for those engaged in fire control and for the forest school student. Only those special terms and definitions likely to be needed by forest school students and fire control workers have been included. Terms related to special fields of fire control and related sciences that concern relatively few students or workers have been excluded if definitions are available in glossaries or handbooks pertaining to those fields. Fire-weather forecast terms, omitted here, are given in "Fire Weather Forecast Terminology" published by the U. S. Weather Bureau. Some additional aerial transportation, cargo, and reconnaissance terms are given in "Air Operations Handbook" published by the U. S. Forest Service.

Terms used in only one region have usually been omitted. Since by definition, a glossary explains terms that have a technical meaning not clearly implied by the usual sense of the words, words used in the dictionary sense and terms that are self-explanatory have been largely excluded. Terms upon which many workers in the field of forest-fire control disagree have usually been excluded. Details and examples unnecessary for a precise definition have been purposely avoided.

Although this edition of the glossary is based principally on current Forest Service terminology, other public and private agencies concerned with protecting forest land from fire have been consulted in an effort to reflect the widest current usage of forest fire terminology.

Finally, the ultimate purpose of this glossary is to improve accuracy in the exchange of thought concerning forest-fire control. Unless those engaged in forest-fire work use these terms precisely, that purpose cannot be accomplished.

This handbook supersedes an unnumbered publication of the same title, issued April 1939.

Washington, D. C.

August 1956

Glossary of Terms Used in Forest Fire Control

Prepared by the Forest Service

- Actionable fire.** (1) A fire started or allowed to spread in violation of any law, ordinance, or regulation; (2) any fire that requires suppression.
- Air freight.** All items for transport and delivery entirely by aircraft from airfield to airfield or heliport to heliport.
- Air-ground detection.** A fire detection system combining fixed coverage of key areas by ground detectors with aerial patrol varied according to needs.
- Air officer.** A person responsible as a staff officer for establishing and operating aerial service on a going fire. Is responsible for the effectiveness of such service and for conformance with applicable regulations and instructions. He is directly supervised by the fire boss, service chief, or camp boss.
- Alidade.** A straightedge equipped with sights; an essential part of a device for locating fires.
- Allowable burned area.** The maximum average loss in acreage burned for a given period of years that is considered acceptable under organized fire control for a given area.
- Anchor point.** An advantageous location, usually a barrier to fire spread from which to start constructing fireline. Used to minimize the chance of being flanked by the fire while the line is being constructed.
- Area ignition.** The ignition of a number of individual fires throughout an area either simultaneously or in quick succession, and so spaced that they soon influence and support each other to produce fast, hot spread of fire throughout the area. See Simultaneous ignition.
- Area needing protection.** Any area in which fires are likely to start and spread and do sufficient damage to justify organized fire control.
- Attack a fire.** Limit the spread of fire by cooling, smothering, or removing or otherwise treating the fuel around its perimeter. See Direct method, Indirect method, Parallel method.
- Attack time.** See Elapsed time.

- Azimuth.** Direction from a point, measured in degrees clockwise from true north.
- Azimuth circle.** A circle graduated in degrees in a clockwise direction.
- Back azimuth.** Azimuth plus 180° ; direction opposite to azimuth.
- Back-burn.** Used in some localities to specify fire set to spread against the wind in prescribed burning. Also called backfire.
- Backfire.** (1) Fire set along the inner edge of a fire control line to stop a spreading wildfire by reducing the fuel or changing the direction of force of the fire's convection column. The term applies best where skilled techniques are required for successful execution. Using such fire to consume unburned fuel inside the fireline to speed up line holding and mopup is usually distinguished as "burning out" or "clean burning." (2) A prescribed fire set to burn against the wind. Also called back-burn. (3) To set a backfire.
- Barrier.** Any obstruction to the spread of fire. Typically, an area or strip devoid of flammable fuel.
- Base camp.** See Fire camp.
- Berm.** Outside or downhill side of a ditch or trench.
- Blind area.** An area in which neither the ground nor its vegetation can be seen from a given observation point under favorable atmospheric conditions.
- Block plan.** A detailed prescription for treating a given burning block with fire.
- Blowup.** Sudden increase in fire intensity or rate of spread sufficient to preclude direct control or to upset existing control plans. Often accompanied by violent convection and may have other characteristics of a fire storm.
- Board of review.** A board or committee selected to review results of fire control action on a given unit or the specific action taken on a given fire in order to identify reasons for both good and poor action, and to recommend or prescribe ways and means of doing a more effective and efficient job.
- Breakover.** A fire edge that crosses a control line or natural barrier intended to confine the fire. Also called slopover.
- Breakover fire.** A fire resulting from a breakover, particularly as applied to a fire that breaks out after abandonment or being declared out.
- Broadcast burning.** Intentional burning in which fire is intended to spread over all of a specific area. It may or may not qualify as prescribed burning.

Brush. Shrubs and stands of short scrubby tree species that do not reach merchantable size. (Not a synonym for Slash or Reproduction.)

Buildup. 1. Cumulative effects of drying (during a preceding period) on the current fire danger. 2. Acceleration of a fire with time. 3. Increase in strength of a fire control organization.

Burning block. In prescribed burning, an area having sufficiently uniform stand and fuel conditions to be treated uniformly under a given burning prescription. The size ranges from the smallest that allows an economically acceptable cost per acre up to the largest that can conveniently be treated in one burning period.

Burning conditions. The state of the combined factors of environment that affect fire in a given fuel association.

Burning index. A number in an arithmetic scale determined from fuel moisture content, wind speed, and other selected factors that affect burning conditions and from which ease of ignition of fires and their probable behavior may be estimated. See Danger index.

Burning index class. A segment of a burning index scale identified by such qualitative terms as low, medium, high, very high, or extreme or by numerals 1, 2, 3, ——— 10.

Burning index meter. A device used to determine burning index for different combinations of burning index factors.

Burning out. Setting fire inside a control line to consume fuel between the edge of the fire and the control line. Also called firing out or clean burning. See Backfire.

Burning period. That part of each 24-hour period when fires will spread most rapidly. Typically, this is from 10:00 a. m. to sundown.

Calculation of probabilities. Evaluation of all existing factors pertinent to probable future behavior of a going fire and of the potential ability of available forces to carry out control operations on a given time schedule.

Camp boss. A person responsible for establishing and operating a fire camp. Directly supervised by the fire boss or the service chief in a headquarters camp, or by a sector boss or division boss in a line camp.

Campfire. As used to classify the cause of a forest fire, a fire that was started for cooking or for providing light and warmth and that spreads sufficiently from its source to require action by a fire control agency. Usually exclusive of fires started by railroad or lumbering employees in connection with their work. See also Causes of fires.

Cat boss. A person responsible for supervising one or more tractor operators and helpers to get efficient and productive use of the machines in constructing fireline or in mopping up.

Catface. A defect on the surface of a tree resulting from a wound in which healing has not reestablished the normal cross section. See Fire scar, Fire wound.

Cat line. A fire line constructed by a tractor with a bulldozer or scraper.

Causes of fires. For statistical purposes forest fires are grouped into broad cause classes. The eight general causes defined in U. S. Forest Service practice are: Campfire, Debris burning fire, Incendiary fire, Lightning fire, Lumbering fire, Railroad fire, Smoker fire, Miscellaneous fire. See separate definition of each.

Center firing. A technique of broadcast burning in which fires are set in the center of the area to create a strong draft. Additional fires are then set progressively nearer the outer control lines as indraft builds up to draw them in toward the center. See Simultaneous firing and Area ignition.

Chance. Conditions suitable for a given kind of operation, e. g.: gravity chance, water so located that it can be delivered by gravity to a desired point; pump chance, the quantity and location of water with respect to a fire that is suitable for power pumps.

Checking station. A point on a main route of travel where traffic is checked and travelers instructed as a fire-prevention measure. Sometimes called registration station.

Class of fire (as to kind of fire).

Class A. Fire in solid fuels, including forest fires.

Class B. Fire in flammable liquids.

Class C. Fire in electrical equipment.

Class of fire (as to size of forest fires).

Class A. A fire of one-fourth acre or less.

Class B. A fire of more than one-fourth acre, but less than 10 acres.

Class C. A fire of 10 acres or more, but less than 100 acres.

Class D. A fire of 100 acres or more, but less than 300 acres.

Class E. A fire of 300 acres or more.

Clean burning. See Burning out.

Closed area. An area in which specified activities or entry are temporarily restricted to reduce risk of man-caused fires.

Closure. Legal restriction, but not necessarily elimination, of specified activities such as smoking, camping, or entry that might cause fires in a given area.

Coarse fuels. See Heavy fuels.

Cold trailing. A method of controlling a partly dead fire edge by carefully inspecting and feeling with the hand to detect any fire, digging out every live spot, and trenching any live edge.

Communication officer. A person responsible for installing, operating and maintaining the communication service needed when suppressing a fire. Usually under supervision of the service chief. Supervises communication technicians, operators, and messengers.

Condition of vegetation. Stage of growth, or degree of flammability of vegetation that forms part of a fuel complex. Herbaceous stage is at times used when referring to herbaceous vegetation alone. In grass areas minimum qualitative distinctions for stages of annual growth are usually green, curing, and dry or cured.

Conflagration. A raging, destructive fire. Often used to connote such a fire with a moving front as distinguished from a fire storm. See Fire storm.

Constant danger. Resultant of all fire danger factors that are relatively unchanging in a given area, e. g., values at stake, normal risk, topography, kind of fuel, exposure to prevailing wind, etc. See Variable danger.

Control a fire. To complete control line around a fire, any spot fires therefrom, and any interior islands to be saved; burn out any unburned area adjacent to the fire side of the control lines; and cool down all hot spots that are immediate threats to the control line, until the lines can reasonably be expected to hold under foreseeable conditions. See Suppress a fire.

Control force. Personnel and equipment used to control a fire.

Control line. An inclusive term for all constructed or natural fire barriers and treated fire edge used to control a fire.

Control time. See Elapsed time.

Controlled burning. The planned application of fire with intent to confine it to a predetermined area. See Prescribed burning.

Corral a fire. To surround a fire and any spot fires therefrom with control line that becomes the ultimate fire edge.

Counter fire. Fire set between main fire and backfire to hasten spread of backfire. Also called Draft fire. The act of setting counter fires is sometimes called front firing or strip firing. In European forestry is synonymous with backfire.

Cover type. The designation of a vegetation complex described by dominant species, age, and form.

Creeping. Fire burning with a low flame and spreading slowly. See Smoldering, Running, Spotting.

Crew boss. A person in supervisory charge of usually 5 to 30 fire fighters and responsible for their performance, safety, and welfare for the duration of their assignment to him. Sometimes called foreman.

- Cross shot.** Intersecting lines of sight from two points to the same object. Frequently used to determine the location of a fire from lookouts.
- Crown fire.** A fire that advances from top to top of trees or shrubs more or less independently of the surface fire. Sometimes crown fires are classed as either running or dependent, to distinguish the degree of independence from the surface fire. See Crown out.
- Crown out.** Fire burning principally as a surface fire that intermittently ignites the crowns of trees or shrubs as it advances.
- Crowning.** Fire advancing from crown to crown of trees or shrubs.
- Danger board.** A device to display a rating of the variable fire danger and the values of the factors on which the rating is based.
- Danger class.** A segment of a fire danger scale identified by a qualitative or numerical term.
- Danger index.** A relative number indicating the severity of forest fire danger as determined from burning conditions and other variable factors of fire danger. See Burning index.
- Danger meter.** A device for combining ratings of several variable factors into numerical classes or ratings of fire danger.
- Debris burning fire.** A fire spreading from any fire originally set for the purpose of clearing land, or for rubbish, garbage, range, stubble, or meadow burning. (This does not include incendiary fires, lumbering fires, or hazard reduction on rights-of-way of common-carrier railroads.)
- Detection.** The act or system of discovering and locating fires.
- Difficulty of control.** See Resistance to control.
- Direct attack.** See Direct method.
- Direct method.** A method of suppression that treats the fire as a whole, or all its burning edge, by wetting, cooling, smothering, or chemically quenching the fire or by mechanically separating the fire from unburned fuel.
- Discovery.** Determination that a fire exists. In contrast to detection, location of a fire is not required.
- Discovery time.** See Elapsed time.
- Dispatcher.** A person who receives reports of discovery and status of fires, confirms their location, takes action promptly to provide the men and equipment likely to be needed for control in first attack, and sends them to the proper place. For additional needs, he acts on orders from the fire boss.
- Dispatcher's meter.** A device that gives for specific fuel types the strength of attack required to control a fire within specified speed of attack time standards.

Division. A unit of a complex fire perimeter between designated relief, drainage, or cultural features organized into two to four sectors for control. Usually so planned that it can be personally and completely inspected by the division boss twice per shift.

Division boss. A supervisory staff member responsible for all suppression work on a fire division under general instructions from the fire boss, or line boss acting for him.

Drift smoke. Smoke that has drifted from its point of origin and has lost any original billow form.

Dry lightning storm. A lightning storm with negligible precipitation reaching the ground.

Duff. The partly decomposed organic material of the forest floor beneath the litter of freshly fallen twigs, needles, and leaves. See Litter.

Economic theory. A theory of forest fire control which postulates that the object of control is to keep total cost (prevention plus presuppression plus suppression plus damage) to a minimum. (Abbreviated as minimum $P+P+S+D$, or least cost, or least cost and damage.) See Minimum-damage theory.

Edge firing. A technique of broadcast burning in which fires are set along the edges of an area and allowed to spread to the center.

Elapsed time. Total time used to complete any given step or steps in fire suppression. The basic steps are listed chronologically below. (See local administrative instructions for combinations used in reporting practice.)

DISCOVERY TIME. Elapsed time from start of fire (known or estimated) until the time of the first discovery that results directly in suppression action.

REPORT TIME. Elapsed time from discovery of a fire until the first man who does effective work on the fire is notified of its existence and location.

GETAWAY TIME. Elapsed time from report of a fire to the man who does first effective work on it until he starts to it.

TRAVEL TIME. Elapsed time from beginning of actual travel by the first man doing effective work on a fire until he begins work on the fire.

CORRAL TIME. Elapsed time from first work on a fire by the man who does first effective work until ultimate perimeter of fire is established by control line. (Now seldom used.)

CONTROL TIME. Elapsed time either from first work on a fire or from corral of a fire until holding the control line is assured.

MOPUP TIME. Elapsed time from time of control until the end of organized mopup.

PATROL TIME. Elapsed time from completion of organized mopup until a fire is declared out.

Elapsed time standards. Maximum amounts of time allowed by administrative rule for given steps of fire suppression.

Equipment officer. A person responsible for managing and servicing tools and mechanical equipment (except aerial) and pack stock needed when suppressing a fire. Supervised by service chief. Supervises equipment, service-men, transportation operators, and packers.

Extra-period fire. A fire not controlled by 10 a. m. of the day following discovery.

Fag station. See Smoke here.

False alarm. A reported smoke or fire requiring no suppression, e. g., brush burning under control, mill smoke, false smoke. See False smoke.

False smoke. Any phenomenon likely to be mistaken for smoke, such as gray cliffs, sheep driveway or road dust, or fog.

Feeling for fire. Examining burned material after fire is apparently out and feeling with bare hands to find any live coals.

Fine fuels. See Flash fuels.

Fingers of a fire. The long narrow tongues of a fire projecting from the main body.

Fire behavior. The manner in which fuel ignites, flame develops, and fire spreads and exhibits other phenomena.

Fire boss. The person responsible for all suppression and service activities on a fire. Primary responsibilities are to develop control plans and organize and direct the fire suppression organization in such manner that the fire is completely and efficiently controlled. May carry out all responsibilities alone or assign prescribed line and staff duties to subordinates.

Firebreak. A natural or constructed barrier utilized to stop or check fires that may occur or to provide a control line from which to work. Sometimes called a fire lane.

Fire camp. A camp used to accommodate men and equipment while suppressing a fire. Also called base camp, side camp, or fly camp, depending on location and function.

Fire concentration. A situation in which numerous fires are burning in a locality. Also used at times to denote the rate of fire occurrence per unit of area.

Fire-control. All activities to protect wild land from fire. (Includes prevention, presuppression, and suppression.) See also Control a fire.

Fire-control equipment. All tools, machinery, special devices, and vehicles used in fire control, but excluding structures.

- Fire control improvements.** The structures primarily used for fire control, such as lookout towers, fireguard cabins, telephone lines and roads to lookout stations, etc.
- Fire control planning.** The systematic technological and administrative management process of designing organization, facilities, and procedures to protect wild land from fire.
- Fire cooperater.** A local person or agency who has agreed in advance to perform specified fire control services and who has received advanced training or instructions in giving such service. Also called cooperater, planned cooperater, fire warden, fire agent, per diem guard, etc.
- Fire damage.** The loss, expressed in money or other units, caused by fire. Includes all indirect losses, such as reduction in future values produced by the forest area, as well as direct losses of cover, improvements, wildlife, etc., killed or consumed by fire.
- Fire danger.** Resultant of both constant and variable fire danger factors, which affect the inception, spread, and difficulty of control of fires and the damage they cause. See Constant danger and Variable danger.
- Fire danger board.** See Danger board.
- Fire danger class.** See Danger class.
- Fire danger meter.** See Danger meter.
- Fire danger rating.** A fire control management system that integrates the effects of selected fire danger factors into one or more qualitative or numerical indices of current protection needs. See Fire danger.
- Fire edge.** The boundary of a fire at a given moment.
- Fire effects.** Any consequence—neutral, detrimental, or beneficial—resulting from fire.
- Fire foam.** See Foam.
- Fireguard.** A general term for firemen, lookout men, fire patrolmen, and others employed for prevention, detection, and suppression of fires. See Short-term.
- Fireline.** The part of a control line that is scraped or dug to mineral soil. Sometimes called fire trail. See Control line.
- Fireman.** A person whose principal function is fire suppression. Also called Smokechaser.
- Fire pack.** A one-man unit of fire tools, equipment, and supplies prepared in advance to be carried on the back.
- Fire-progress map.** A map maintained on a large fire to show at given times the location of the fire, deployment of suppression forces, and progress of suppression.

Fireproof. 1. Not burnable. 2. To treat an area, hazard, road, etc., so as to reduce the danger that fires will start or spread, e. g., to fireproof a roadside or campground.

Fire protection. See Fire control.

Fire retardant. Any substance that by chemical or physical action reduces flammability of combustibles.

Fire safety officer. A staff person responsible for identifying the accident and health hazards to fire suppression forces and for advising the fire boss on means of keeping them at a minimum.

Fire scar. 1. A healing or healed injury or wound, caused or accentuated by fire, on a woody plant. See Fire wound, Catface. 2. The scar made on a landscape by fire.

Fire season. The period or periods of the year during which fires are likely to occur, spread, and do sufficient damage to warrant organized fire control.

Fire storm. Violent convection caused by a large continuous area of intense fire. Often characterized by destructively violent surface indrafts near and beyond the perimeter, and sometimes by tornadolike whirls.

Fire suppression organization. 1. The management structure designed to enable carrying out line and staff duties of the fire boss with increases in size and complexity of the suppression job. 2. All supervisory and facilitating personnel assigned to fire suppression duty under the direction of a fire boss.

Fire-tool cache. A supply of fire tools and equipment assembled in planned quantities or standard units at a strategic point for exclusive use in fire suppression.

Fire trail. See Fire line.

Fire trap. 1. An accumulation of highly flammable fuel. 2. A situation in which it is highly dangerous to fight a fire.

Fire warden. An officer in charge of fire control in a given area.

Fire-weather forecast. A weather prediction specially prepared for use in forest fire control.

Fire-weather station. A forest meteorological station specially equipped to measure weather elements that have an important effect on fire control.

Fire wound. Fresh or healing injuries of the cambium of a woody plant caused by fire. See Fire scar.

Firing out. See Burning out.

First-work period. The time between discovery of a fire and 10 a. m. of the following calendar day. Also called Initial shift. Succeeding work periods are 24 hours beginning at 10 a. m.

- First attack.** The first suppression work on a fire.
- Flammability.** The relative ease with which fuels ignite and burn regardless of the quantity of the fuels. Preferred to "inflammability."
- Flank fire.** A fire set along a control line parallel to the wind and allowed to spread at right angles to it.
- Flanking.** Attacking a fire by working along the flanks either simultaneously or successively from a less active or anchor point and endeavoring to connect the two lines at the head.
- Flanks of a fire.** The parts of a fire's perimeter that are roughly parallel to the main direction of spread. See also Parts of a fire.
- Flash fuels.** Fuels such as grass, leaves, draped pine needles, fern, tree moss, and some kinds of slash which ignite readily and are consumed rapidly when dry. Also called fine fuels. See Heavy fuels.
- Foam.** A chemical fire-extinguishing mixture. When applied it forms bubbles which greatly increase the mixture volume. It adheres to the fuel, and reduces combustion by cooling and moistening and by excluding oxygen.
- Followup.** The act of supporting the first man or men who go to a fire by sending additional men or equipment to facilitate suppression. Sometimes called Reinforcement.
- Forced burning.** See Simultaneous ignition.
- Forest fire.** Any wild-land fire not prescribed for the area by an authorized plan.
- Forest protection.** Prevention and control of any cause of potential forest damage.
- Free-burning.** The condition of a fire or part of a fire that has not been checked by natural barriers or by control measures.
- Front firing.** See Counter fire.
- Fuel moisture content.** The quantity of moisture in fuel expressed as a percentage of the weight when thoroughly dried at 212° F.
- Fuel-moisture-indicator stick.** A specially prepared stick or set of sticks of known dry weight continuously exposed to the weather and periodically weighed to determine changes in moisture content, as an indication of moisture changes in forest fuels.
- Fuel reduction.** See Hazard reduction.
- Fuel type.** An identifiable association of fuel elements of distinctive species, form, size, arrangement, or other characteristics that will cause a predictable rate of fire spread or difficulty of control under specified weather conditions.

- Fuel type classification.** The division of forest areas into units according to their characteristics with respect to rate of spread and difficulty of establishing and holding control line.
- Functional method.** See Progressive method.
- Getaway time.** See Elapsed time.
- Going fire.** A current fire during the period between time of start and being declared out.
- Gridiron.** To search for a small fire by systematically traveling over an area on parallel courses or grid lines.
- Ground fire.** Fire that consumes the organic material beneath the surface litter of the forest floor, e. g., a peat fire.
- Gutter trench.** A ditch dug on a slope below a fire, designed to catch rolling burning material.
- Hangover fire.** See Holdover fire.
- Hazard.** A fuel complex defined by kind, arrangement, volume, condition, and location that forms a special threat of ignition or of suppression difficulty.
- Hazard reduction.** Any treatment of a hazard that reduces the threat of ignition and spread of fire.
- Hazemeter.** An instrument for measuring the dependable range of distance at which a standard smoke column can be detected by the eye under existing conditions of haze. Also called visibility meter.
- Head fire.** A fire spreading or set to spread with the wind.
- Head of a fire.** The most rapidly spreading portion of a fire's perimeter, usually to the leeward or up slope. See also Parts of a fire.
- Heavy fuels.** Fuels of large diameter such as snags, logs, and large limbwood, which ignite and are consumed more slowly than flash fuels. Also called coarse fuels. See Flash fuels.
- Held line.** All worked control line that still contains the fire when mopup is completed. Excludes lost line, natural barriers not back-fired, and unused secondary lines.
- Heliport.** A permanent or semipermanent base for helicopters.
- Helispot.** A temporary landing spot for helicopters.
- Herbaceous stage.** See Condition of vegetation.
- Holdover fire.** A fire that remains dormant for a considerable time. Also called hangover fire or sleeper fire.
- Hose-lay.** The arrangement of connected lengths of fire hose and accessories on the ground beginning at the first pumping unit and ending at the point of water delivery. See Progressive hose-lay, Simple hose-lay.

- Hotshot crew.** An intensively trained fire-fighting crew used primarily as followup for first attack forces.
- Hotspot.** A particularly active part of a fire.
- Hotspotting.** Checking the spread of fire at points of more rapid spread or special threat. Is usually the initial step in prompt control with emphasis on first priorities.
- Hour control.** A time standard applied in fire control planning which specifies the maximum allowable time, usually from origin of a fire to the first attack on it, that should insure a burned acreage within the acceptable maximum for a given unit or cover type.
- Incendiary fire.** A fire willfully set by anyone to burn vegetation or property not owned or controlled by him and without consent of the owner or his agent.
- Independent action.** Suppression action by other than the regular fire control organization or cooperators.
- Indirect attack.** See Indirect method and Parallel method.
- Indirect method.** A method of suppression in which the control line is located along natural firebreaks, favorable breaks in topography, or at considerable distance from the fire and the intervening fuel is backfired or burned out. The strip to be backfired is wider than in the parallel method and usually allows a choice of the time when the backfiring will be done.
- Individual-assignment method.** A system of organizing men to control a fire's perimeter in which each crewman is assigned a specific section of control line where he is responsible for all suppression jobs from hotspotting to mopup.
- Inflammability.** See Flammability.
- Information officer.** A staff officer in a fire suppression organization responsible for information releases to the public on a fire situation.
- Initial attack.** See First attack.
- Initial shift.** See First-work period.
- Intelligence officer.** A staff officer in a fire suppression organization who is responsible for gathering and compiling all information needed to develop a suppression plan for the control of a fire.
- Jump spot.** A selected landing area for smokejumpers.
- Knock down.** To reduce the flame or heat on the more vigorously burning parts of a fire edge.
- Least-cost theory.** See Economic theory.
- Legitimate smoke.** Smoke from any authorized use of fire as in locomotives, industrial operations, permitted debris burning, etc.
- Light burning.** Periodic broadcast burning to prevent accumulation of fuels in quantities that would cause excessive damage or difficult suppression in the event of accidental fires.

- Lightning fire.** A fire caused directly or indirectly by lightning.
- Line boss.** A supervisory officer in a fire suppression organization responsible for executing the fire suppression plan adopted by the fire boss. Employed in some stages of organization of large forces. May act as coordinator between two or more divisions or may supervise three to four sector bosses if no divisions have been established.
- Line scout.** A scout in a fire suppression organization assigned to scouting duties on the fireline. See Scout.
- Litter.** The top layer of the forest floor, composed of loose debris of dead sticks, branches, twigs, and recently fallen leaves or needles, little altered in structure by decomposition. See Duff.
- Live burning.** Progressive burning of green slash as it is cut. See Progressive burning.
- Lookout.** 1. A person designated to detect and report fires from a vantage point. 2. A lookout station.
- Lookout-dispatcher.** A person having the combined function of lookout man and dispatcher.
- Lookout-fireman.** A person having the combined function of lookout man and fireman.
- Lookout house.** A building containing living quarters with walls largely of glass, on a tower or natural elevation to permit an unobstructed view.
- Lookout man or Lookout observer.** A person at a lookout station employed to detect and report fires. Called towerman in some localities with flat relief.
- Lookout observatory.** Same as Lookout house defined above, but may not contain living quarters.
- Lookout-patrolman.** A person who travels ridges and other vantage points to discover, locate, report, and suppress fires. Often combines this function with prevention activities.
- Lookout point.** A vantage point selected for fire detection.
- Lookout station.** A location and associated structures for detecting and reporting fires.
- Lookout tower.** A structure to enable a person to be above nearby obstructions to sight. It is usually capped by either a lookout house or observatory.
- Lumbering fire.** A fire except one caused by smokers, resulting from lumbering. (Lumbering includes all activities connected with the harvesting or processing of wood for use or sale. Lumbering fires include those caused by logging railroads which are not common carriers.) See Causes of fires.
- Man-passing-man method.** A system of organizing men in fire suppression in which each crewman is assigned a specific task such

as clearing or digging fire line on a specific section of the control line, and when that task is completed he passes other workers in moving to a new assignment.

Maps and records officer. A staff officer in a fire suppression organization responsible for preparing administrative records of control of a fire such as disposition of men and equipment, instructions issued, progress maps, and organization charts.

Minimum-damage theory. A theory of forest fire control which postulates that the objective is to keep fire damage at a minimum. See Economic theory.

Miscellaneous fire. A fire of known cause that cannot be properly classified under any of the other seven standard causes. See Causes of fires.

Mopup. The act of making a fire safe after it is controlled, such as extinguishing or removing burning material along or near the control line, felling snags, trenching logs to prevent rolling, etc.

Mopup time. See Elapsed time.

Moveup method. See Progressive Method.

Net fire effects. The sum of all effects, both detrimental and beneficial, resulting from burning.

Nonstatistical fire. In U. S. Forest Service practice, any fire that does not qualify for inclusion in national statistical summaries of fires. Representative examples are as follows:

- (a) Fires that have gone out naturally when reached.
- (b) Railroad fires confined to the right-of-way that do not endanger Forest Service-protected land and are suppressed by railroad employees with or without Forest Service help.
- (c) Small fires resulting from legitimate slash or debris burning operations and extinguished by the causative agency.
- (d) Abandoned campfires that because of the condition of forest fuels or weather conditions cannot spread, or are confined to improved fireplaces or stoves.

- (e) Individual incendiary sets when all sets burn together and are suppressed as one fire. In this event all sets will be reported as one fire.

Individual lightning fires set at the same time in proximity to each other that burn together and are suppressed as one fire. In this event only one fire will be reported.

- (f) Individual incendiary sets that are suppressed separately, where less than $\frac{1}{4}$ mile intervenes between any two adjacent sets. Only one fire will be reported for any such sets.

Individual lightning fires set at the same time in proximity to each other (less than $\frac{1}{4}$ mile apart) that are suppressed separately. Only one fire will be reported for any such sets.

- (g) Burning buildings, automotive equipment, haystacks, sawdust piles, etc., that under the prevailing conditions are not a menace to Forest Service-protected land.

- (h) Fires from any cause, confined to private lands, that do not endanger Forest Service-protected lands and are suppressed by landowners or others responsible for their suppression with or without Forest Service aid.

See Statistical fires.

Normal fire season. 1. A season in which weather, fire danger, and number and distribution of fires are about average. 2. Period of the year that normally comprises the fire season.

One-lick method. See Progressive method.

Panoramic photograph. Photographs from a lookout point, bearing azimuth and vertical angle scales, to assist in locating fires with a firefinder.

Para-cargo. Anything intentionally dropped or intended for dropping from any aircraft by parachute, other retarding devices, or free fall.

Parallel method. A method of suppression in which fireline is constructed approximately parallel to, and just far enough from the fire edge to enable men and equipment to work effectively, though the line may be shortened by cutting across unburned fingers. The intervening strip of unburned fuel is normally burned out as the control line proceeds, but may be allowed to burn out unassisted where this occurs without undue delay or threat to the line.

Parts of a fire. On typical free-burning fires the spread is uneven, with the main spread moving with the wind or up slope. The most rapidly moving portion is designated the head of the fire, the adjoining portions of the perimeter at right angles to the head are known as the flanks, and the slowest moving portion is known as the rear.

Patrol. 1. To travel a given route to prevent, detect, and suppress fires. 2. To go back and forth watchfully over a length of control line, during or after its construction, to prevent breakovers, control spot fires, or extinguish overlooked hotspots.

Patrol time. See Elapsed time.

Piling and burning. Piling lopped slash resulting from logging, and subsequently burning the individual piles.

Plans chief. A staff officer in a fire suppression organization responsible for the compilation and analysis of data needed for developing suppression plans.

Plow line. A fireline constructed by a fireline plow, usually drawn by a tractor.

Powersaw boss. See Saw boss.

Preparedness. 1. Condition or degree of being completely ready to cope with a potential fire situation. 2. Mental readiness to recognize changes in fire danger and act promptly when action is appropriate.

Prescribed burning. Skillful application of fire to natural fuels under conditions of weather, fuel moisture, soil moisture, etc., that will allow confinement of the fire to a predetermined area and at the same time will produce the intensity of heat and rate of spread required to accomplish certain planned benefits to one or more objectives of silviculture, wildlife management, grazing, hazard reduction, etc. Its objective is to employ fire scientifically to realize maximum net benefits at minimum damage and acceptable cost.

Presuppression. Activities in advance of fire occurrence to insure effective suppression action. Includes recruiting and training, planning the organization, maintaining fire equipment and fire control improvements, and procuring equipment and supplies. See Prevention; Suppression.

Prevention. Activities directed at reducing the number of fires that start, including public education, law enforcement, personal contact, and reduction of fuel hazards.

Prevention guard. A guard who helps to prevent fires by contacting forest users and inspecting fire prevention measures and fire equipment of industrial operations on the forest. Also called prevention patrolman.

Primary lookout. 1. A lookout point that must be manned to meet planned minimum visible area coverage in a given locality. For that reason, continuous service is necessary during the normal fire season and the lookout man usually is not sent to fires. 2. Sometimes designates the person who occupies such a station, but primary lookout man or observer is more specific in this sense.

Progressive burning. Slash disposal by burning the slash as it is piled. Also called swamper burning.

Progressive hose-lay. A hose-lay in which double shutoff Y's are inserted in the main line at intervals and lateral lines are run from the Y's to the fire edge, thus permitting continuous application of water during extension of the lay.

Progressive Method of Line Construction. A system of organizing men to build fireline in which they advance without changing relative positions in line. There are two principal methods of applying the system: (1) Work is begun with a suitable space, such as 15 feet, between men. Whenever one crewman overtakes another, all of those ahead move one space forward and resume work on the uncompleted part of the line. The last man does not move ahead until the work is complete in his space. Forward progress of the crew is coordinated by a crew leader. This method of organization is variously termed moveup, stepup, bumpup, and functional. 2. Each man does one to several licks or strokes of work and moves forward a specified distance. The distance is determined by the number of men equipped with a given tool and the

- number of licks needed per unit of line to complete the work for that tool. This method is termed one-lick.
- Project fire.** Usually refers to a fire requiring manpower and equipment beyond the resources of the protection unit on which it originates.
- Protection boundary.** The exterior boundary of an area within which a given agency has assumed a degree of responsibility for forest fire control. It may include land in addition to that for which the agency has jurisdictional or contractual responsibility.
- Pump chance.** See Chance.
- Railroad fire.** A fire resulting from maintenance of the right-of-way or construction or operation of a common-carrier railroad. See Causes of fire.
- Rate of spread.** The relative activity of a fire in extending its horizontal dimensions. It is expressed as rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area, depending on the intended use of the information. Usually it is expressed in chains per hour or acres per hour for a specific period in the fire's history.
- Rate-of-spread meter.** A device that computes probable rate of spread of fire for different combinations of fuel moisture, wind speed, and other selected factors.
- Rear of a fire.** The portion of the edge of a fire opposite the head.
- Reburn.** 1. Subsequent burning of an area in which fire has previously burned but has left flammable fuel that ignites when burning conditions are more favorable. 2. An area that has reburned.
- Reinforcement.** See Followup.
- Relative humidity.** The ratio of the amount of moisture in a given volume of space to the amount that volume would contain if it were saturated. The ratio of the actual vapor pressure to the saturated vapor pressure.
- Report time.** See Elapsed time.
- Resistance to control.** The relative difficulty of constructing and holding a control line as affected by resistance to line construction and by fire behavior. Also called difficulty of control. See Resistance to line construction.
- Resistance to line construction.** The relative difficulty of constructing control line as determined by the fuel, topography, and soil. See Resistance to control.
- Risk.** 1. The chance of fire starting as determined by the presence and activity of causative agents. 2. A causative agent.
- Rough.** The accumulation of living and dead ground and understory vegetation, especially grasses, forest litter, and draped dead needles, sometimes with addition of underbrush, such as palmetto, gallberry, and wax myrtle. Most often used for southern pine types.

- Rough reduction.** Reduction of the hazard from the rough. See Hazard reduction, Rough.
- Running.** Behavior of a fire spreading rapidly with a well-defined head. See Smoldering, Creeping, Spotting.
- Saw boss.** A supervisory officer in a fire suppression organization responsible for the activities of saw crews (using hand or power saws) in cutting snags or logs on a fire or part of a fire.
- Scorchline.** Average heights of foliage browning caused by a fire.
- Scout.** A staff worker in a fire suppression organization assigned duties of gathering and reporting timely information such as existing location and behavior of a fire, progress in control, and the physical conditions that affect the planning and execution of the suppression job.
- Scratch line.** An unfinished preliminary control line hastily established or constructed as an emergency measure to check the spread of a fire.
- Secondary lookout.** 1. A lookout point used to supplement the visible area coverage of the primary lookout system when required by fire danger, poor visibility, or other factors. 2. Sometimes designates the person who occupies such a station, but secondary lookout man is more specific in this sense.
- Sector.** A designated segment of fire perimeter or control line comprising the suppression work unit for two or more crews under one sector boss.
- Sector boss.** A staff officer responsible for all suppression activities on a specific sector of a fire.
- Seen area.** See Visible area.
- Seen-area map.** See Visible-area map.
- Service chief.** A staff officer in a fire suppression organization responsible for procuring, maintaining, and distributing men, equipment, supplies, and facilities at the times and places specified by the suppression plan for the fire.
- Set.** 1. An individual incendiary fire. 2. The point or points of origin of an incendiary fire. 3. Material left to ignite an incendiary fire at a later time. 4. Individual lightning or railroad fires, especially when several are started within a short time. 5. Burning material at the points deliberately ignited for backfiring, slash burning, prescribed burning, and other purposes.
- Severity index.** A number that indicates the relative net cumulated effects of daily fire danger on the fire load for an area during a selected period, such as a fire season.
- Short-term.** Persons or work for which employment is less than 12 months. (Excludes fire fighters hired for a particular fire.) In Federal service short-term appointments are usually to the position of Fire Control Aid.

Side camp. See Fire camp.

Simple hose-lay. A hose-lay consisting of consecutively coupled lengths of hose without laterals. The lay is extended by inserting additional lengths of hose in the line between pump and nozzle.

Simultaneous ignition. A technique of broadcast burning or backfiring by which the fuel on an area to be burned is ignited at many points simultaneously and the sets are so spaced that each receives timely stimulation by radiation from the adjoining sets. By such techniques, all burn together quickly and a hot, clean burn is possible under unfavorable burning conditions where single sets would not spread. See Area ignition.

Slash. Debris left after logging, pruning, thinning, or brush cutting. It includes logs, chunks, bark, branches, stumps, and broken understory trees or brush.

Slash disposal. Treatment of slash to reduce the fire hazard or for other purposes. (Preferred to Brush disposal.)

Sleeper fire. See Holdover fire.

Slopovert. See Breakover.

Smoke candle. A pyrotechnical product that gives smoke with uniform color like that of a small fire and at a standard rate.

Smokechaser. See Fireman.

Smoke haze. Haze caused by smoke alone and not by water vapor, dust, or other particles.

Smoke here. A signed spot where smoking is permitted in an area that in general is closed to smoking. Sometimes called fag station.

Smokejumper. A fire fighter who travels to fires by aircraft and parachute.

Smoker fire. A fire caused by a smoker's matches, or by burning tobacco in any form. See Causes of fires.

Smoldering. Behavior of a fire burning without flame and barely spreading. See Creeping, Running, Spotting.

Snag. A standing dead tree or part of a dead tree from which at least the leaves and smaller branches have fallen. Often called stub, if less than 20 feet tall.

Span of control. The maximum number of subordinates who can be directly supervised by one person without loss of efficiency. In fire suppression the number varies by activity, but is usually in the general range of 3-8.

Speed of attack. Elapsed time from origin of a fire to arrival of the first suppression force.

Spike camp. See Fire camp.

Spot burning. A modified form of broadcast slash burning in which only the greater accumulations are fired and the fire is confined to these spots.

- Spot fire.** Fire set outside the perimeter of the main fire by flying sparks or embers.
- Spotting.** Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the main fire.
- Standby crew.** A group of men especially organized, trained, and placed for quick suppression work on fires.
- Statistical fire.** In U. S. Forest Service practice, a fire that is suppressed wholly or in part by Forest Service employees or co-operators and on which suppression work is done either to prevent the fire from spreading to or burning over national forest or other lands for which the Forest Service assumes protection responsibility. See Nonstatistical fires.
- Stepup method.** See Progressive method.
- Straw boss.** A working leader responsible for efficient and productive work of usually 3 to 8 fire fighters.
- Strength of attack.** The number of men and machines with which a fire is attacked.
- Strip burning.** 1. Setting fire to a narrow strip of fuel adjacent to a control line and then burning successively wider adjacent strips inside as the preceding strip burns out. Also called Strip firing.
2. Burning only a relatively narrow strip or strips of slash through a cutting unit and leaving the remainder.
- Strip firing.** See Strip burning.
- Supply officer.** A person responsible for supplying and distributing the supplies and equipment needed to suppress a fire and for servicing tools and simple equipment. Supervised by the service chief.
- Suppress a fire.** Extinguish a fire or confine the area it burns within fixed boundaries.
- Suppression.** All the work of extinguishing or confining a fire beginning with its discovery. See Fire control, Prevention, Presuppression.
- Suppression crew.** Two or more men stationed at a strategic location, either regularly or in emergency, for initial action on fires. Duties are essentially the same as those of individual firemen.
- Suppression foreman.** A man in charge of a suppression crew.
- Suppression squad.** See Suppression crew.
- Surface fire.** Fire that burns surface litter, other loose debris of the forest floor, and small vegetation.
- Swamper.** An axman who cuts and clears away brush, and limbs small trees and down timber, that can be cleared with an ax.
- Swamper burning.** See Progressive burning.

Tanker boss. A person in a fire suppression organization responsible for supervising usually 3 to 5 tanker units to get efficient and productive use of water in either direct attack or mopup work on fires.

Test fire. A controlled fire set to evaluate such things as fire behavior, detection performance, control measures, etc.

Towerman. A lookout man stationed at a tower.

Travel time. See Elapsed time.

Travel-time map. A map showing the length of time required to reach various parts of an area by a fireman or crew from specified locations.

Trench. Formerly used as synonym for "fireline," which is preferred. See Gutter trench.

Undercut line. A fireline below a fire on a slope. Also called under-slung line.

Variable danger. Resultant of all fire danger factors that vary from day to day, month to month, or year to year, e. g., weather, fuel moisture, foliage growth and condition, variable man-caused hazard, and variable risks of ignition. See Constant danger.

Vegetation stage. See Condition of vegetation.

Visibility distance. Maximum distance at which a smoke column of specified size and density can be seen and recognized as a smoke by the unaided eye. See Visual range.

Visible area. The ground or vegetation thereon that can be directly seen from a given lookout point under favorable atmospheric conditions.

Visible area map. A map showing the specific territory in which either the ground surface or the vegetation growing thereon is directly visible, to practical distances, from a lookout point.

Visual range. Maximum distance at which a given object can just be seen by an observer with normal vision. See Visibility distance.

Water-supply map. A map showing location of supplies of water readily available for pumps, tanks, trucks, camp use, etc.

Wet water. Water with added chemicals, called wetting agents, that increase its spreading and penetrating properties.

Wetting agent. A chemical that reduces the surface tension of water and causes it to spread and penetrate more effectively.

Wildfire. 1. An unplanned fire requiring suppression action, as contrasted with a prescribed fire burning within prepared lines enclosing a designated area, under prescribed conditions. 2. A free-burning fire unaffected by fire suppression measures.

Wild land. Uncultivated land, excepting fallow lands.

Wood cylinders. See Fuel-moisture-indicator sticks.