

A Publication of the
**National Wildfire
Coordinating Group**

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Department of Agriculture**

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Department of the Interior**

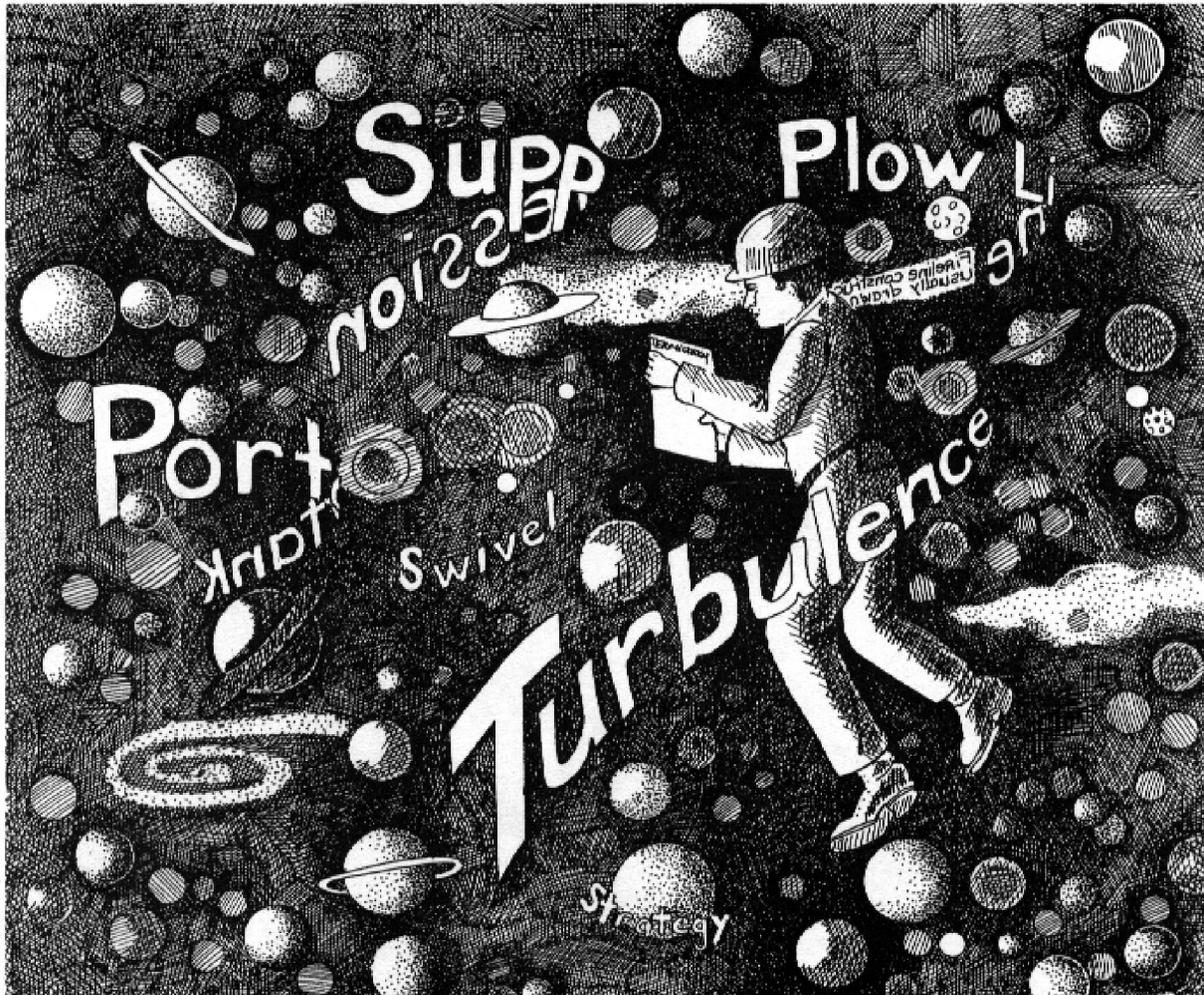
**National Association of
State Foresters**

Glossary of Wildland Fire Terminology



**PMS 205
NFES 1832**

NOVEMBER 1996



FIRE ORDERS

Fight fire aggressively but provide for safety first.
Initiate all action based on current and expected fire behavior.
Recognize current weather conditions and obtain forecasts.
Ensure instructions are given and understood.

Obtain current information on fire status.
Remain in communication with crew members, your supervisor, and adjoining forces.
Determine safety zones and escape routes.
Establish lookouts in potentially hazardous situations.
Retain control at all times.
Stay alert, keep calm, think clearly, act decisively.

WATCH OUT SITUATIONS

1. Fire not scouted and sized up.
2. In country not seen in daylight.
3. Safety zones and escape routes not identified.
4. Unfamiliar with weather and local factors influencing fire behavior.
5. Uninformed on strategy, tactics, and hazards.
6. Instructions and assignments not clear.
7. No communication link with crew members or supervisor.
8. Constructing line without safe anchor point.
9. Building fireline downhill with fire below.
10. Attempting frontal assault on fire.
11. Unburned fuel between you and the fire.
12. Cannot see main fire, not in contact with someone who can.
13. On a hillside where rolling material can ignite fuel below.
14. Weather is getting hotter and drier.
15. Wind increases and/or changes direction.
16. Getting frequent spot fires across line.
17. Terrain and fuels make escape to safety zone difficult.
18. Taking a nap near the fireline.



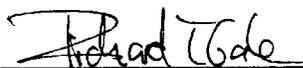
APPROVAL STATEMENT

on behalf of the

NATIONAL WILDFIRE COORDINATING GROUP

The following material has been approved for use by the National Wildfire Coordinating Group and all its working teams. The material is approved for interagency use and is known as:

Glossary of Wildland Fire Terminology
First Edition, November 1996



Member NWCG and Incident Operations Standards
Working Team Liaison

Date 12-05-96



Chair, Incident Operations Standards
Working Team

Date December 5, 1996

Glossary of Wildland Fire Terminology

Prepared by

National Wildfire Coordinating Group
Incident Operations Standards Working Team

November 1996

Sponsored for NWCG publication by the Incident Operations Standards Working Team, November 1996.

Additional copies of this publication may be ordered from: National Interagency Fire Center, Great Basin Cache Supply Office, 3833 S. Development Ave., Boise, Idaho. Order: NFES #1832.

Preface

The need for an NWCG Glossary has existed for many years. The initial document, Dictionary of Fire Terminology, was developed about 1989 by Jack Wilson, then Director of the Boise Interagency Fire Center, and Dave Butts, Retired Fire Director for the National Park Service. Work was stopped when other products became available, but those documents did not meet the needs of NWCG. In 1995, through a combined effort of the Incident Command System Working Team (ICSWT), now called the Incident Operations Standards Working Team (IOSWT), and the National Fire and Aviation Training Support Group (NFATSG) at the National Interagency Fire Center (NIFC), the work to develop a wildland glossary was resurrected. This wildland fire glossary has been developed by combining terms from numerous smaller glossaries, including International Forestry, National Association of State Foresters, those associated with approved courses (e.g., prescribed fire, smoke management, fire effects, fire behavior and foam), guides (e.g., Air Tactics, Interagency Helicopter Operations, and Wildfire Suppression Tactics), the Storm King Investigation Report, the Federal Wildland Fire Management Policy and Program Review Report, and the Fireline Handbook.

An October 1995 review copy was distributed to NWCG, all the NWCG working teams, numerous agencies and subject matter experts (SME's). Over 400 copies were distributed which resulted in over 650 comments. These comments were reviewed by a five person committee and appropriate modifications were made.

Introduction

Objective of Glossary

The objective is to provide the wildland fire community a single document that covers wildland fire, prescribed fire and incident management terminology used by the National Wildfire Coordinating Group (NWCG) and its working teams. This document will help to improve communication and provide consistency in terminology throughout the organizations with a primary mission of wildland fire management. It will also facilitate consistent use of these terms in publications, course development, and incident management activities.

Maintenance of Glossary

This glossary is intended to be a dynamic document and updated on a regular cycle. An active file of terms to be added or corrected will be maintained by the NFATSG at NIFC for the IOSWT. Anyone wishing to send wildland terminology information in for inclusion may do so by sending it to:

National Interagency Fire Center
National Fire and Aviation Support Group
Training Standards Team
3833 S. Development Ave
Boise, Idaho 83705-5354

All suggested changes will be approved by the IOSWT of NWCG before being incorporated into the next edition of the glossary.

Reference Definitions

Some of the terms within this glossary will have references or comments at the end of the definition to help broaden the understanding of the term. An explanation of those references is as follows:

Syn., means the term is synonymous with another, meaning it is the same, alike or similar.

See also, means that there are related terms that the user might also want to consult.

Also called, means there are sometimes other names used for the item or topic, which are not listed in this glossary.

- A -

ABORT: To jettison a load of water or retardant from an aircraft, or terminate a preplanned aircraft maneuver.

ABORT AREA: A designated area where unused quantities of water or fire retardant may be jettisoned, usually to permit an air tanker to land with less than a full load.

ABOVE GROUND LEVEL (AGL): Term frequently used in aviation operations, usually in connection with a stated altitude.

ABSOLUTE HUMIDITY: Total amount of water vapor in the air.

ACCELERANT: Any substance applied to fuel to expedite the burning process.

ACCEPTABLE BURN: Maximum average area burned over a specified period of years that is considered an acceptable loss for a specified area under organized fire suppression. (Syn. ALLOWABLE BURNED AREA)

ACCEPTABLE DAMAGE: Damage which does not seriously impair the flow of economic and social benefits from wildlands.

ACCEPTABLE FIRE RISK: The potential fire loss a community is willing to accept rather than provide resources to reduce such losses.

ACCESSIBILITY BURN: Burning of understory prior to the sale of forest products to improve the efficiency of timber marking and harvesting. (Syn. PREMARKING BURN)

ACTION PLAN: Any tactical plan developed by any element of ICS in support of the incident action plan. (see also INCIDENT ACTION PLAN)

ACTIONABLE FIRE: Any fire that requires suppression, especially a fire started or allowed to spread in violation of law, ordinance, or regulation.

ACTIVE CROWN FIRE: A fire in which a solid flame develops in the crowns of trees, but the surface and crown phases advance as a linked unit dependent on each other.

ACTIVE FIRE: Any wildfire on which suppression action has not reached an extensive mopup stage. (Syn. GOING FIRE)

ACTIVE RESOURCES: Resources checked in and assigned work tasks on an incident. (Syn. ASSIGNED RESOURCES)

ACTIVITY FUELS: Fuels resulting from, or altered by, forestry practices such as timber harvest or thinning, as opposed to naturally created fuels.

ACTUAL TIME OF ARRIVAL (ATA): Term used in flight planning/following to document time of arrival at a point.

ACTUAL TIME OF DEPARTURE (ATD): Term used in flight planning/following to document time of departure from a point.

ACTUAL TIME EN ROUTE (ATE): Term used in flight planning/following to document actual time spent flying between points.

ADAPTER: A device for connecting hoses of the same size with non-matching hose threads, or connecting a threaded coupling to a quick-connect coupling.

ADIABATIC PROCESS: Thermodynamic change of state in which no heat is added or subtracted from a system; compression always results in warming, expansion in cooling.

ADMINISTRATIVE PAYMENT TEAM: Team authorized to make a full range of vendor payments in support of incident unit's administrative staff.

ADVANCING A LINE: Moving a hose lay toward a specified area from the point where the hose-carrying apparatus has stopped.

ADVANCING FRONT COMBUSTION STAGE: The period of combustion when a fire is spreading, usually accompanied by flaming combustion that releases heat to sustain the convection column.

ADVECTION: The transfer of atmospheric properties by the horizontal movement of air, usually in reference to the transfer of warmer or cooler air, but may also refer to moisture.

ADZE HOE: A fire-trenching or digging tool having a sharp, tempered blade, which is useful for heavy grubbing, trenching, and light cutting.

AERIAL DETECTION: A system for or the act of discovering, locating, and reporting fires from aircraft.

AERIAL FUELS: Standing and supported live and dead combustibles not in direct contact with the ground and consisting mainly of foliage, twigs, branches, stems, cones, bark, and vines.

AERIAL IGNITION: Ignition of fuels by dropping incendiary devices or materials from aircraft.

AERIAL IGNITION DEVICE (AID): Inclusive term applied to equipment designed to ignite wildland fuels from an aircraft. (see also DELAYED AERIAL IGNITION DEVICES, HELITORCH, PING-PONG BALL SYSTEM, PLASTIC SPHERE DISPENSER)

AERIAL OBSERVER: A person specifically assigned to discover, locate, and report wildland fires from an aircraft and to observe and describe conditions at the fire scene.

AERIAL PHOTO INTERPRETER: A person skilled in identification and measurements of natural and cultural features on aerial photographs.

AERIAL RECONNAISSANCE: Use of aircraft for detecting and observing fire behavior, values-at-risk, suppression activity, and other critical factors to facilitate command decisions on strategy and tactics needed for fire suppression.

AGENCY: An agency is a division of government with a specific function, or a non-governmental organization (e.g., private contractor, business, etc.) that offers a particular kind of assistance. In ICS, agencies are defined as jurisdictional (having statutory responsibility for incident mitigation), or assisting and/or cooperating (providing resources and/or assistance). (see also SUPPORTING AGENCY, and COOPERATING AGENCY)

AGENCY/AREA COORDINATION CENTER: A facility which serves as a central point for one or more agencies to use in processing information and resource requests. It may also serve as a dispatch center for one of the agencies.

AGENCY DISPATCH: The agency or jurisdictional facility from which resources are allocated to incidents.

AGENCY DISPATCHER: A person working within an agency organization who processes resources to and from incidents. (see also DISPATCHER)

AGENCY EXECUTIVE OR ADMINISTRATOR: Line officer (or designee) of the agency or jurisdiction that has responsibility for the incident. These usually include; NPS Park Superintendent, BIA Agency Superintendent, USFS Forest Supervisor, BLM District Manager, FWS Refuge Manager, State Forest Officer, Fire Chief.

AGENCY REPRESENTATIVE (AREP): An individual assigned to an incident from an assisting or cooperating agency who has been delegated authority to make decisions on matters affecting that agency's participation at the incident. Reports to the incident liaison officer.

AIR ATTACK: The deployment of fixed-wing or rotary aircraft on a wildland fire, to drop retardant or extinguishing agents, shuttle and deploy crews and supplies, or perform aerial reconnaissance of the overall fire situation.

AIR ATTACK BASE: Permanent facility at which aircraft are stationed for use in air attack operations. (see also RELOAD BASE)

AIR CARGO: All items for transport and delivery by aircraft.

AIR CONTAMINANT: An airborne dust, fume, gas, mist, odor, smoke, vapor, soot, pollen, carbon, acid or particulate matter or any combination thereof.

AIR GUARD: A common VHF-FM frequency used by natural resource agency aircraft for emergency radio transmissions. Also called national air safety guard frequency.

AIR MASS: An extensive body of air having the same properties of temperature and moisture in a horizontal plane.

AIR NET (Aircraft Network): Applies to radio frequencies primarily used for air operations.

AIR OPERATIONS BRANCH DIRECTOR (AOBD): The person primarily responsible for management of air operations on an incident.

AIR PACK: Portable air (not oxygen) tanks with regulators which allow firefighters to breathe while in toxic smoke conditions. Usually rated for 30 minutes of service. Used primarily on fires involving structures or hazardous materials. (Syn. SELF-CONTAINED BREATHING APPARATUS - SCBA) (see also RESPIRATOR)

AIR POLLUTION: The general term referring to the undesirable addition of substances (gases, liquids, or solid particles) to the atmosphere that are foreign to the natural atmosphere or are present in quantities exceeding natural concentrations.

AIR POLLUTION ALERT: A statement issued by an Air Quality Regulatory Agency due to high measured concentrations of pollutants. The alert remains in effect until monitoring shows a decrease in pollutant levels. Should conditions worsen, air pollution warnings and emergencies may be issued. At each stage (alert, warning and emergency) additional emission restrictions are put into effect so as to not intensify the situation. Essentially, at the emergency level all industrial activities and auto usage stop.

AIR QUALITY: The composition of air with respect to quantities of pollution therein; used most frequently in connection with "standards" of maximum acceptable pollutant concentrations. Used instead of "air pollution" when referring to programs.

AIR QUALITY CONTROL REGION: A primary air quality administrative area, designated in accordance with the provisions of the 1970 Clean Air Act, on the basis of geographical and meteorological considerations.

AIR QUALITY MAINTENANCE AREA (AQMA): An area that has been identified by an Air Quality Regulatory Agency to have the potential for exceeding any federal or state ambient air quality standard due to projected growth and development.

AIR QUALITY MODEL: Mathematical or quantitative representation or simulation of air quality processes; e.g., emission models, receptor models, or air quality dispersion models.

AIR STAGNATION ADVISORY (ASA): A statement issued by a National Weather Service forecast office when atmospheric conditions are stable enough such that the potential exists for air pollutants to accumulate in a given area. The statement is initially issued when conditions are expected to last for at least 36 hours.

AIR SUPPORT GROUP SUPERVISOR (ASGS): Person responsible for logistical support and management of helibase and helispot operations, and temporary fixed-wing bases. The ASGS also maintains liaison with air tanker and fixed-wing aircraft bases.

AIR TACTICAL GROUP SUPERVISOR (ATGS): Person responsible for directing and coordinating airborne aircraft operations, and management of air space for an incident.

AIR TANKER/FIXED-WING COORDINATOR (ATCO): Airborne person responsible for coordinating air tanker/fixed-wing operations on an incident.

AIR TANKER: Fixed-wing aircraft certified by FAA as being capable of transport and delivery of fire retardant solutions.

AIR TRANSPORTABLE MODULAR UNIT (ATMU): A weather data collection and forecasting facility consisting of four modules, weighing a total of 282 pounds and occupying 27.1 cubic feet of space when transported. Used by incident meteorologists on an incident. (see also INCIDENT METEOROLOGIST and MICRO-REMOTE ENVIRONMENTAL MONITORING SYSTEM)

AIRBORNE PARTICULATES: Total suspended particulate matter found in the atmosphere as solid particles or liquid droplets. Chemical composition of particulates varies widely, depending on location and time of year. Airborne particulates include: windblown dust, emissions from industrial processes, smoke from the burning of wood and coal, and the exhaust of motor vehicles.

AIRCRAFT ACCIDENT: An unplanned event that does substantial damage or causes serious injuries when associated with the operation of applicable aircraft, occurring between the time engine(s) is (are) started or rotors turning for the purpose of commencing flight, until the aircraft comes to rest with engines and propellers or rotors stopped, the brakes set or wheel chocks in place and all persons have disembarked.

AIRCRAFT BASE RADIO OPERATOR: Person responsible to the helibase manager for establishing and facilitating communications among incident- or project-assigned helicopters, helibases, helispots, air operations staff or project aviation manager, and the takeoff and landing coordinator.

AIRCRAFT DATA CARD: "Card" or documentation required to be on board the aircraft which approves use and indicates specific types of use.

AIRCRAFT FOOTPRINT: That area on the surface of the earth, runway, or ramp that is covered by the tread of the aircraft tire while the aircraft is motionless. Also called wheel loading.

AIRCRAFT GROUND MISHAP: An aircraft mishap in which there is no intent to fly; however, the power plants and/or rotors are in operation and damage is incurred requiring replacement or repair of rotors, propellers, wheels, tires, wing tips, flaps, etc., or injury is incurred requiring first-aid or medical attention.

AIRCRAFT INCIDENT: An unplanned event that results in damage which is less than serious aircraft incident criteria, or injuries not requiring medical attention.

AIRCRAFT TIMEKEEPER: Person responsible to helibase manager for keeping time and other information concerning all helicopters assigned to the helibase.

ALIDADE: A sighting device used by lookouts to determine the horizontal bearing and sometimes the vertical angle of a fire from a lookout. (Syn. OSBORNE FIREFINDER) (see also FIREFINDER MAP)

ALL TERRAIN VEHICLE (ATV): Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other terrain. (Syn. OFF-ROAD VEHICLE)

ALLOCATED RESOURCES: Resources dispatched to an incident, that have not yet checked in. (see also ASSIGNED RESOURCES and AVAILABLE RESOURCES)

ALLOWABLE BURNED AREA: Maximum average area burned over a specified period of years that is considered an acceptable loss for a specified area under organized fire suppression. (Syn. ACCEPTABLE BURN)

ALLOWABLE PAYLOAD: The amount of weight that is available for passengers and/or cargo. On the load calculation form it is the operating weight subtracted from the selected weight.

ALTIMETER SETTING: The barometric pressure reading used to adjust a pressure altimeter for variations in existing atmospheric pressure or to the standard altimeter setting (29.92) inches.

AMBIENT AIR: Air of the surrounding environment.

ANCHOR POINT: An advantageous location, usually a barrier to fire spread, from which to start constructing a fireline. The anchor point is used to minimize the chance of being flanked by the fire while the line is being constructed.

ANEMOMETER: An instrument designed to measure wind speed.

ANNUAL: A plant completing its life cycle in a year or less.

ANTICYCLONE: An area of high atmospheric pressure with closed clockwise circulation. (see also SURFACE HIGH, HIGH PRESSURE RIDGE)

APPARATUS: A motor-driven vehicle, or group of vehicles, designed and constructed for the purpose of fighting fires. May be of different types such as engines, water tenders, ladder trucks, etc.

APPROVED: In fire service terminology, that which is inspected and listed by recognized fire-testing agencies. The term as used in National Fire Protection Association standards means approval by the authority having jurisdiction, such as the fire chief, insurance inspection department, or other agency that enforces standards or regulations.

ARAMID: The generic name for a high-strength, flame-resistant, synthetic fabric used in the shirts and jeans of firefighters. Nomex ®, a brand name for aramid fabric, is the term commonly used by firefighters.

AREA COMMAND: An organization established to: (1) oversee the management of multiple incidents that are each being handled by an incident management team (IMT) organization; or (2) to oversee the management of a very large incident that has multiple IMT's assigned to it. Area Command has the responsibility to set overall strategy and priorities, allocate critical resources based on priorities, ensure that incidents are properly managed, and that objectives are met and strategies followed.

AREA IGNITION: Ignition of several individual fires throughout an area, either simultaneously or in rapid succession, and so spaced that they add to and influence the main body of the fire to produce a hot, fast-spreading fire condition. Also called simultaneous ignition.

AREA OF INFLUENCE: Delineated area surrounding a base which can be reached first by the ground or air attack units assigned to the base. Also called zone of influence.

AREA SOURCE: A source category of air pollution that generally extends over a large area. Prescribed burning, field burning, home heating, and open burning are examples of area sources.

ARMED: A term used in air tanker parlance to indicate that the dropping mechanism is set to

allow a programmed release of part or all of the load of fire retardant.

ARSON FIRE: A wildfire willfully ignited by anyone to burn, or spread to, vegetation or property without consent of the owner or his/her agent. (Syn. INCENDIARY FIRE)

ASPECT: Cardinal direction toward which a slope faces. (see also EXPOSURE)

ASPIRATE (foam): To draw in gases (or other substances); nozzle aspirating systems draw air into the nozzle to mix with the foam solution.

ASSIGNED RESOURCES: Resources checked in and assigned work tasks on an incident. (Syn. ACTIVE RESOURCES) (see also ALLOCATED RESOURCES and AVAILABLE RESOURCES)

ASSIGNMENTS: Tasks given to resources to perform within a given operational period, based upon tactical objectives in the incident action plan.

ASSISTANT: Term used as a title for subordinates of the command staff positions. In some cases, assistants are also assigned to unit leader positions in the planning, logistics, and finance/administration sections. Qualifications, technical capability, and responsibility of assistants are normally less than those of the person holding the primary position.

ASSISTANT DISBURSING OFFICER (ADO): Person authorized to write and disburse paychecks to emergency firefighters and vendors.

ASSISTING AGENCY: An agency directly contributing tactical or service resources to another agency. (see also AGENCY, COOPERATING AGENCY, and SUPPORTING AGENCY)

ATMOMETER: An instrument that provides an approximate measure of evapotranspiration by measuring the water loss from an artificial evaporating surface.

ATMOSPHERIC INVERSION: (1) Departure from the usual increase or decrease with altitude of the value of an atmospheric property (in fire management usage, nearly always refers to an increase in temperature with increasing height). (2) The layer through which this departure occurs (also called inversion layer). The lowest altitude at which the departure is found is called the base of the inversion. (see also INVERSION, ATMOSPHERIC STABILITY, and STABLE LAYER OF AIR)

ATMOSPHERIC PRESSURE: The force exerted by the weight of the atmosphere, per unit area.

ATMOSPHERIC STABILITY: The degree to which vertical motion in the atmosphere is enhanced or suppressed. Vertical motions and pollution dispersion are enhanced in an unstable atmosphere. Thunderstorms and active fire conditions are common in unstable atmospheric conditions. Stability suppresses vertical motion and limits pollution dispersion. (see also

INVERSION, ATMOSPHERIC INVERSION, and STABLE LAYER OF AIR)

ATTACK A FIRE: Limit the spread of fire by any appropriate means.

ATTACK LINE: A line of hose, preconnected to the pump of a fire apparatus and ready for immediate use in attacking a fire. Contrasted to supply lines connecting a water supply with a pump or to feeder lines extended from a pump to various points around the perimeter of a fire.

ATTACK TIME: The starting date, hour, and minute of the first suppression work on a fire.

ATTACK UNIT: Single vehicle or aircraft and its associated personnel and material provided for the purpose of responding to and abating a fire or other emergency.

ATTACK UNIT RESPONSE: The response of one attack unit to a fire or other emergency with no regard for the number of return trips to that same fire or emergency.

ATTAINMENT AREA: An area considered to have air quality as good as, or better than, the National Ambient Air Quality Standards (NAAQS) as defined in the Clean Air Act.

AUTOMATIC DIRECTION FINDER (ADF): An aircraft radio navigational receiver operating in the low frequency bands.

AUTOMATIC LIGHTNING DETECTION SYSTEM (ALDS): An electronic system that detects cloud-to-ground lightning strikes by their electrical discharges and plots their locations.

AUTOMATICALLY REGULATED: A proportioning method or device that readily adjusts to changes in water flow and or pressure to maintain a desired mix ratio.

AUTOROTATION: A helicopter flight condition in which the lifting rotor is driven entirely by action of air when the helicopter is in motion.

AUXILIARY PUMP: A secondary pump on an engine in addition to the main pump. Usually of small capacity.

AVAILABLE FUEL: (1) That portion of the total fuel that would actually burn under various environmental conditions. (2) Fuel available for use in a motor vehicle, aircraft, or other motorized equipment.

AVAILABLE FUEL ENERGY: Amount of heat released per unit area when the available fuel burns, often expressed in Btu's per square foot.

AVAILABLE RESOURCES: Resources assigned to an incident and available for assignment. (see also ALLOCATED RESOURCES, ASSIGNED RESOURCES)

AVERAGE RELATIVE HUMIDITY: Part of the National Fire Danger Rating System (NFDRS). The mathematical average of the maximum and minimum relative humidities measured at a fire weather station from one basic observation time to the next.

AVERAGE TEMPERATURE: The mathematical average of the maximum and minimum dry-bulb temperatures measured at a fire weather station from one basic observation time to the next.

AVERAGE WORST DAY: Average fire danger of the highest 15% of the days occurring in the average worst year.

AVERAGE WORST YEAR: Third worst fire season in the last ten, as determined by the sum of daily danger or burning indices during the regularly declared fire season; use the same number of days each year to determine these totals.

AVOIDANCE: A smoke emission control strategy that considers meteorological conditions when scheduling prescribed fires in order to avoid incursions into smoke sensitive areas.

AZIMUTH: Horizontal angle or bearing of a point measured clockwise from true (astronomic) north.

AZIMUTH CIRCLE: A circle graduated in 360 degrees in a clockwise direction from true (astronomic) north.

- B -

BACK AZIMUTH: Angle or bearing 180 degrees opposite of azimuth.

BACKBURN: Used in some localities to specify fire set to spread against the wind in prescribed burning.

BACKDRAFT: Instantaneous explosion or rapid burning of superheated gases that occurs when oxygen is introduced into an oxygen-depleted confined space. It may occur because of inadequate or improper ventilation procedures.

BACKFIRE: A fire set along the inner edge of a fireline to consume the fuel in the path of a wildfire and/or change the direction of force of the fire's convection column. (see also BURN OUT)

BACKFIRE TORCH: A flame generating device (e.g., a fount containing diesel oil or kerosene and a wick, or a backpack pump serving a flame-jet). (see also DRIP TORCH, FLAME THROWER) (Syn. BURNING TORCH)

BACKFIRING: A tactic associated with indirect attack, intentionally setting fire to fuels inside the control line to slow, knock down, or contain a rapidly spreading fire. Backfiring provides a wide defense perimeter and may be further employed to change the force of the convection column. Backfiring makes possible a strategy of locating control lines at places where the fire can be fought on the firefighter's terms. Except for rare circumstance meeting specified criteria, backfiring is executed on a command decision made through line channels of authority.

BACKGROUND LEVEL: In air pollution control, the concentration of air pollutants in a definite area during a fixed period of time prior to the starting up, or the stoppage, of a source of emission under control. In toxic substances monitoring, the average presence in the environment, originally referring to naturally-occurring phenomena.

BACKING FIRE: Fire spreading, or ignited to spread, into (against) the wind or downslope. A fire spreading on level ground in the absence of wind is a backing fire.

BACKING WIND: Wind that changes direction in a counter clockwise motion.

BACKPACK PUMP: A portable sprayer with hand-pump, fed from a liquid filled container fitted with straps, used mainly in fire and pest control. (see also BLADDER BAG)

BAFFLE: A partitioned wall placed in vehicular or aircraft water tanks to reduce shifting of the water load when starting, stopping or turning.

BALL VALVE: A valve in which fluid flow is controlled by a ball with a hole drilled through it. In one position, fluid flows through the hole. When the valve is turned 90 degrees (1/4 turn) the hole is perpendicular to the flow and the ball stops the flow. Intermediate valve positions can be used to adjust the flow.

BAMBI BUCKET ®: A collapsible bucket slung below a helicopter. Used to dip water from a variety of sources for fire suppression.

BANKING SNAGS: The act of throwing mineral soil about the base of an unlighted snag to prevent its being ignited by a surface fire.

BAROMETER: An instrument for measuring the pressure of the atmosphere. The two principal types are the mercurial and the aneroid.

BARRIER: Any obstruction to the spread of fire. Typically an area or strip devoid of combustible fuel.

BASE: (1) The location at which primary logistics functions for an incident are coordinated and administered. There is only one base per incident. (Incident name or other designator will be added to the term "base.") The incident command post may be collocated with the base. (2) The location of initial attack forces. (see also CAMP)

BASE AREA: Part of the National Fire Danger Rating System (NFDRS). An area representative of the major fire problems on a protection unit. Base fuel model and slope class are chosen from the base area.

BASE FUEL MODEL: Part of the National Fire Danger Rating System (NFDRS). A representation of the vegetative cover and fuel in a base area. Used in the calculation of fire danger rating.

BASE MANAGER: Person responsible to the facilities unit leader for providing all services, supplies, and non-technical coordination for all units operating within the incident base.

BASE OBSERVATION TIME: Part of the National Fire Danger Rating System (NFDRS). The time established to take the fire danger observations. It should be at the time of day when the fire danger is normally the highest. The usually agreed upon time is 1:00 pm standard time. This allows time to transmit observations and prepare forecasts.

BASE STATION: A fixed central radio dispatching station controlling movements of one or more mobile units.

BASELINE: In prescribed burning, the initial line of fire, usually set as a backing fire along a barrier or control line, which serves to contain subsequent burning operations.

BATCH MIX: Manually adding and mixing a concentrated chemical, such as liquid foam, or powdered or liquid retardant with water, or gelling agents with fuel, into solution in a tank or container.

BEARING: The horizontal direction to or from any point, usually measured clockwise from true north, or some other reference point through 360 degrees.

BEAUFORT WIND SCALE: A system of estimating and reporting wind speeds. In its present form for international meteorological use it equates (a) Beaufort force (or Beaufort number), (b) wind speed, (c) descriptive term, and (d) visible effects upon land objects or sea surface.

BEHAVE: A system of interactive computer programs for modelling fuel and fire behavior, comprised of two systems: BURN and FUEL.

BELT WEATHER KIT: Belt-mounted case with pockets fitted for anemometer, compass, sling psychrometer, slide rule, water bottle, pencils, and book of weather report forms. Used to take weather observations to provide on-site conditions to the fire weather forecaster or fire behavior analyst. Observations include air temperature, wind speed and direction, and relative humidity.

BERM: A ridge of soil and debris along the outside edge of a fireline, resulting from line construction. (see also THROW OUT)

BEST AVAILABLE CONTROL MEASURES (BACM): Control measures to be developed by Environmental Protection Agency (EPA) which apply to residential wood combustion, fugitive dust, and prescribed and silvicultural burning in "serious" PM-10 non-attainment areas. BACM is more stringent than RACM. Final guidance on BACM is still being developed.

BEST AVAILABLE CONTROL TECHNOLOGY (BACT): An emission limitation based on the maximum degree of emission reduction which (considering energy, environmental, and economic impacts, and other costs) is achievable through application of production processes and available methods, systems, and techniques. In no event does BACT permit emissions in excess of those allowed under any applicable Clean Air Act provisions. Use of the BACT concept is allowable on a case-by-case basis for major new or modified emissions sources in attainment areas and applies to each regulated pollutant.

BIOLOGICAL SEVERITY: The degree of biological impact of a fire on various biotic ecosystem components.

BLACKLINE: Preburning of fuels adjacent to a control line before igniting a prescribed burn. Blacklining is usually done in heavy fuels adjacent to a control line during periods of low fire danger to reduce heat on holding crews and lessen chances for spotting across control line. In fire suppression, a blackline denotes a condition where there is no unburned material between the fireline and the fire edge.

BLADDER BAG: A collapsible backpack portable sprayer made of neoprene or high-strength nylon fabric fitted with a pump. (see also BACKPACK PUMP)

BLIND AREA: An area in which neither the ground nor its vegetation can be seen from a given observation point.

BLOCK PLAN: A detailed prescription for treating a specified burning block with fire. (see also BURNING BLOCK)

BLOW DOWN: An area of previously standing timber which has been blown over by strong winds or storms.

BLOWUP: Sudden increase in fireline intensity or rate of spread of a fire sufficient to preclude direct control or to upset existing suppression plans. Often accompanied by violent convection and may have other characteristics of a fire storm. (see also EXTREME FIRE BEHAVIOR, FIRE STORM and FLARE-UP)

BOARD OF REVIEW: A board or committee selected to review results of fire suppression 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. Reviews the results of a safety/accident investigation.

BOILING LIQUID EXPANDING VAPOR EXPLOSION (BLEVE): (1) The failure of a closed container as a result of overpressurization caused by an external heat source. (2) A major failure of a closed liquid container into two or more pieces when the temperature of the liquid is well above its boiling point at normal atmospheric pressure.

BOLE: The trunk of a tree.

BONE YARD: A mopup term. (1) To "bone yard" a fire means to systematically work the entire area, scraping embers off remaining fuel, feeling for heat with the hands, and piling unburned materials in areas cleared to mineral soil. (2) An area cleared to mineral soil for piling unburned fuels.

BOOSTER HOSE: The most common type of hose attached and stored on wildland engine booster reels. The hose is made of neoprene and does not appreciably collapse when stored empty.

BOOSTER PUMP: An intermediary pump for supplying additional lift in pumping water uphill past the capacity of the first pump.

BOOSTER REEL: A reel for the booster hose mounted on a fire engine, often supplied by the auxiliary pump. This reel usually carries a 1-inch (25 mm) or 3/4 inch (19 mm) hose and frequently contains an electric rewind mechanism.

BOUNDARY CONDITIONS: The temperature and relative humidity of the boundary layer.

BOUNDARY LAYER: The air in immediate contact with a fuel particle.

BOUNDARY VALUE: The equilibrium moisture content (EMC) commensurate with the boundary conditions and precipitation events of the preceding 24 hours.

BOWLES BAG: A neoprene tank designed for attachment to the landing skid frame of a helicopter. It has a capacity of 80 to 100 gallons (303 to 378 liters) of water or retardant.

BOX CANYON: A steep-sided, dead end canyon.

BRANCH: The organizational level having functional or geographical responsibility for major parts of incident operations. The branch level is organizationally between section and division/group in the operations section, and between section and unit in the logistics section. Branches are identified by roman numerals or by functional name (e.g. service, support).

BREAK A LINE: To insert a gate valve or some other device into a hose line.

BREAK COUPLING: To detach two pieces of hose by backing the swivel thread off the nipple thread.

BREAK LEFT OR RIGHT: Means "turn" left or right: applies to aircraft in flight, usually on the drop run, and when given as a command to the pilot, implies expectation of prompt compliance.

BRITISH THERMAL UNIT (BTU): Amount of heat required to raise 1 pound of water 1 degree Fahrenheit (from 59.5⁰ to 60.5⁰ F), measured at standard atmospheric pressure.

BROADCAST BURNING: Intentional burning within well defined boundaries for reduction of fuel hazard, as a resource management treatment, or both.

BROWN AND BURN: Application of herbicide to desiccate living vegetation prior to burning.

BROWNSPOT CONTROL: Prescribed fire to control fungal infection (brown spot disease) of longleaf pine (*Pinus palustris*) in the "grass" (small seedling) stage.

BRUSH: A collective term that refers to stands of vegetation dominated by shrubby, woody plants, or low growing trees, usually of a type undesirable for livestock or timber management.

BRUSH BLADE: Blade attachment with long teeth specially suited to ripping and piling brush with minimum inclusion of soil. Also called brush rake or root rake.

BRUSH FIRE: A fire burning in vegetation that is predominantly shrubs, brush, and scrub growth.

BRUSH HOOK: A heavy cutting tool designed primarily to cut brush at the base of the stem. Used in much the same way as an axe and having a wide blade, generally curved to protect the blade from being dulled by rocks.

BRUSH MANAGEMENT: Manipulation of stands of brush by manual, mechanical, chemical, or biological means or by prescribed burning for the purpose of achieving land management objectives.

BRUSH PATROL UNIT: Any light, mobile vehicular unit with limited pumping and water capacity for off-road operations.

BUBBLE: The building block of foam; bubble characteristics of water content and durability influence foam performance.

BUCKET DROPS: The dropping of fire retardants or suppressants from specially designed buckets slung below a helicopter.

BUCKING: Sawing through the bole of a tree after it has been felled.

BUILD-UP: (1) The cumulative effects of long-term drying on current fire danger. (2) The

increase in strength of a fire management organization. (3) The accelerated spreading of a fire with time. (4) Towering cumulus clouds which may lead to thunderstorms later in the day.

BUILDUP INDEX (BUI): A relative measure of the cumulative effect of daily drying factors and precipitation on fuels with a ten-day timelag.

BULK DENSITY: Weight per unit volume. For fuels, this is usually expressed as pounds per cubic foot; for soils, grams per cubic centimeter.

BUMPUP METHOD: Progressive method of fireline construction on a wildfire without changing relative positions in the line. Work is begun with a suitable space between workers; whenever one worker overtakes another, all of those ahead move one space forward and resume work on the uncompleted part of the line. The last worker does not move ahead until work is completed in his/her space. Forward progress of the crew is coordinated by a crew boss. (Syn. MOVEUP METHOD)

BURN: (1) An area burned over by wildland fire.

(2) A reference to a working fire.

(3) An injury to flesh caused by a cauterizing agent, heat from a fire, or a heated object.

a) First Degree Burn: A burn which causes only pain, redness, and swelling.

b) Second Degree Burn: A burn in which the skin is blistered.

c) Third Degree Burn: A flesh burn in which charring occurs.

BURN BOSS: Person responsible for supervising a prescribed fire from ignition through mopup.

BURN SEVERITY: A qualitative assessment of the heat pulse directed toward the ground during a fire. Burn severity relates to soil heating, large fuel and duff consumption, consumption of the litter and organic layer beneath trees and isolated shrubs, and mortality of buried plant parts.

BURN OUT: Setting fire inside a control line to consume fuel between the edge of the fire and the control line. (see also BACKFIRE)

BURN OUT TIME: The duration of flaming and smoldering combustion phases at a specified point within a burn or for the whole burn, expressed in convenient units of time.

BURNING BAN: A declared ban on open air burning within a specified area, usually due to sustained high fire danger.

BURNING BLOCK: In prescribed burning, an area having sufficiently uniform conditions of stand and fuel to be treated uniformly under a given burning prescription. NOTE: 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. (see also BLOCK PLAN)

BURNING CONDITIONS: The state of the combined factors of the environment that affect fire

behavior in a specified fuel type.

BURNING INDEX: An estimate of the potential difficulty of fire containment as it relates to the flamelength at the head of the fire. A relative number related to the contribution that fire behavior makes to the amount or effort needed to contain a fire in a specified fuel type. Doubling the burning index indicates that twice the effort will be required to contain a fire in that fuel type as was previously required, providing all other parameters are held constant.

BURNING PERIOD: That part of each 24-hour period when fires spread most rapidly; typically from 10:00 AM to sundown.

BURNING PRIORITY RATING: System of rating slash to indicate the treatment objective, whether or not burning is required to meet that objective, the fuel treatment necessary to achieve successful burning, and the time of year burning should occur.

BURNING ROTATION: The planned number of years between prescribed fires on a specified area.

BURNING TORCH: A flame generating device (e.g., a fount containing diesel oil or kerosene and a wick, or a backpack pump serving a flame-jet). (see also DRIP TORCH, FLAME THROWER) (Syn. BACKFIRE TORCH)

BURNING-INDEX METER: A device used to determine the burning index for different combinations of burning-index factors.

BURN PATTERNS: The characteristic configuration of char left by a fire; in wildland fires burn patterns are influenced by topography, wind direction, length of exposure, and type of fuel. They can be used to trace a fire's origin.

BUYING TEAM: A team that supports the procurement effort through the local administrative staff and is authorized to procure a wide range of services, supplies, land and equipmental rentals. In addition, the buying team leader has the responsibility of coordinating property accountability with the supply unit leader.

BUYS BALLOT'S LAW: If a person stands with his back to the wind, the high atmospheric pressure is found to his right in the Northern Hemisphere. The high pressure on the right moves clockwise and outward from the cell. The low pressure on the left moves counterclockwise and toward the center of the cell. Therefore, the general air circulation between the high and the low cell is from right to left.

- C -

CACHE: A pre-determined complement of tools, equipment and/or supplies stored in a designated location, available for incident use.

CALCULATION OF PROBABILITIES: Evaluation of all factors pertinent to probable future behavior of a going fire and of the potential ability of available forces to perform fire suppression operations on a specified time schedule.

CALIBRATED AIRSPEED: Indicated airspeed of an aircraft, corrected for position and instrument error. Equal to true airspeed in standard atmosphere at sea level.

CAMP: A geographical site(s), within the general incident area, separate from the incident base, equipped and staffed to provide sleeping, food, water, and sanitary services to incident personnel. (see also BASE)

CAMP MANAGER: Person responsible to the facilities unit leader for providing all services, supplies, and non-technical coordination for all units within the camp. There may be one or more camps per incident, each with a camp manager.

CANDLING: The burning of the foliage of a single tree or a small group of trees, from the bottom up. (Syn. TORCHING)

CANOPY: The stratum containing the crowns of the tallest vegetation present, (living or dead) usually above 20 feet.

CARBON DIOXIDE (CO₂): A colorless, odorless, nonpoisonous gas, which results from fuel combustion and is normally a part of the ambient air.

CARBON MONOXIDE (CO): A colorless, odorless, poisonous gas produced by incomplete fuel combustion.

CARCINOGEN: Any substance that can cause or contribute to the production of cancer.

CARDINAL ALTITUDES: "Odd" or "even" thousand-foot (305 m) altitudes or flight levels. E.g., 5,000, 6,000, 7,000; FL 250, FL 260, and FL 270.

CARDINAL DIRECTIONS: North, south, east, west; used for giving directions and information from the ground or air in describing the fire (e.g., the west flank or east flank, not right flank or left flank).

CARGO CHUTE: A parachute designed and rigged for dropping equipment and supplies from an aircraft.

CARGO COMPARTMENT: An internal area of an aircraft specifically designed to carry

baggage or cargo.

CARGO DROP: Dropping of equipment or supplies, with or without a parachute, from an aircraft in flight.

CARGO HOOK: Mechanically and electrically operated hook attached to the bottom of a helicopter to which a sling load is attached.

CARGO NET: Net attached to the cargo hook of a helicopter, used to carry cargo. Also called cargo sling.

CARGO RACK: Externally mounted rack for transporting supplies or cargo aboard a helicopter.

CAROUSEL HOOK: A remote hook attached to the end of a longline. It has four or more individual hooks which can be independently released, allowing the pilot to fly cargo loads to different locations without landing.

CARRIED WET: Booster hose carried full of water during mild weather to speed discharge of water on fire without filling or priming from tank.

CARRIER FUELS: The fuels that support the flaming front of the moving fire.

CASUALS: Emergency firefighters employed to cope with a sudden and unexpected fire-caused emergency, or potential for extreme fire behavior, which threatens damage to property under public management. (see also EMERGENCY FIREFIGHTER)

CATEGORY DAY: A numerical index related to the ability of the atmosphere to disperse smoke. Different agencies use different scales [e.g., in South Carolina, the current scale is based on ventilation factor and ranges from 1 (poor) to 5 (excellent)].

CATFACE: Defect on the surface of a tree resulting from a wound where healing has not re-established the normal cross-section.

CEILING: (1) Height above the earth's surface of the lowest layer of clouds or obscuring phenomena aloft that is not classified as a thin layer or partial obscuration, that together with all lower clouds or obscuring phenomena covers more than half the sky as detected from the point of observation. (2) Maximum height of a temporary flight restriction (TFR).

CELSIUS: A temperature scale with 0^o as the freezing point of water and 100^o as the boiling point of water at sea level.

CENTER FIRING: Method of broadcast burning in which fire is ignited in the center of the area to create a strong draft; additional fires are then ignited progressively nearer the outer control lines (sometimes in one step) as indraft increases so as to draw the flames and smoke toward the

center.

CENTIPOISE (CP): Standard unit of viscosity equal to 0.01 poise, the cP unit of viscosity. Water at 20 degrees C has viscosity of 1.002 cP.

CENTRIFUGAL PUMP: Pump which expels water by centrifugal force through the ports of a circular impeller rotating at high speed. With this type of pump, the discharge line may be shut off while the pump is running without damaging the pump or hose.

CHAIN: Unit of measure in land survey, equal to 66 feet (20 M) (80 chains equal 1 mile). Commonly used to report fire perimeters and other fireline distances, this unit is popular in fire management because of its convenience in calculating acreage (e.g., 10 square chains equal one acre).

CHAIN LIGHTNING: Lightning in a long zigzag or apparently broken line.

CHAIN OF COMMAND: A series of management positions in order of authority.

CHAR: (1) A charred substance or charred remains. (2) In fire simulation, a darkened area within the fire perimeter; usually indicates fire has already passed through; usually created by an opaque material blocking out a selected portion of basic scene illumination.

CHARGED LINE: Hose filled with water under pressure and ready to use. Also called live line. (see also LIVE REEL)

CHASE TRUCK: Vehicle that carries crew gear, supplies, and operational equipment for initial/extended attack.

CHECK-IN: The process whereby resources first report to an incident. Check-in locations include: incident command post (resources unit), incident base, camps, staging areas, helibases, helispots, or direct to the line. (see also REPORTING LOCATIONS)

CHECK LINE: A temporary fireline constructed at right angles to the control line and used to hold a backfire in check as a means of regulating the heat or intensity of the backfire.

CHECK VALVE: A valve that permits flow of liquid through a hose or pipe in one direction but prevents a return flow. Uses include the prevention of backflow on uphill hose lays, loss of prime with centrifugal pumps and chemical contamination in fire chemical mixing systems.

CHEVRON BURN: Burning technique in which lines of fire are started simultaneously from the apex of a ridge point, and progress downhill, maintaining position along the contour; used in hilly areas to ignite ridge points or ridge ends.

CHIEF: The ICS title for individuals responsible for command of functional sections: operations, planning, logistics and finance/administration.

CHIEF OF PARTY: The chief of party is responsible to the sending unit dispatcher until destination is reached. Chief of party is responsible for all traveling personnel assigned on the manifest list.

CIRRUS: A form of high cloud, composed of ice crystals, which seldom obscures the sun.

CLAIMS SPECIALIST (CLMS): Person responsible to the compensation/claims unit leader for handling all claims-related activities (other than injury) for the incident.

CLASS 1 AREA (AIR QUALITY): Geographic areas designed by the Clean Air Act where only a very small amount or increment of air quality deterioration is permissible.

CLASS II AREAS (AIR QUALITY): All areas of the country not designated Class I. A greater amount of air pollution can be added to these areas than Class I.

CLASS A FOAM: Foam intended for use on Class A or woody fuels; made from hydrocarbon-based surfactant, therefore lacking the strong filming properties of Class B foam, but possessing excellent wetting properties.

CLASS B FOAM: Foam designed for use on Class B or flammable liquid fires; made from fluorocarbon-based surfactants, therefore capable of strong filming action, but incapable of efficient wetting of Class A fuels.

CLASS OF FIRE (As to kind of fire for purpose of using proper extinguisher):

- Class A - Fires involving ordinary combustible materials (such as wood, cloth, paper, rubber, and many plastics) requiring the heat absorbing (cooling) effects of water, water solutions, or the coating effects of certain dry chemicals, which retard combustion.
- Class B - Fires involving flammable or combustible liquids, flammable gases, greases, and similar materials where extinguishment is most readily secured by excluding air (oxygen), inhibiting the release of combustible vapors, or interrupting the combustion chain reaction.
- Class C - Fires involving live electrical equipment where safety to the operator requires the use of electrically nonconductive extinguishing agents.

- Class D - Fires involving certain combustible metals (such as magnesium, titanium, zirconium, sodium, potassium, etc.) requiring a heat absorbing extinguishing medium not reactive with burning metals.
(see also SIZE CLASS OF FIRE)

CLEAN AIR ACT: A federal law enacted to ensure that air quality standards are attained and maintained. Initially passed by Congress in 1963, it has been amended several times.

CLEAN BURN: Any fire, whether deliberately set or accidental, that destroys all aboveground vegetation and litter, along with the lighter slash exposing the mineral soil.

CLEAR TEXT: The use of plain English in radio communications transmissions. No Ten Codes or agency specific codes are used when using Clear Text.

CLEARING INDEX: A derived value used to indicate smoke dispersal. Formula uses the depth of the mixing layer multiplied by the average wind speed for that layer, divided by 100.

CLIMATE: The prevalent or characteristic meteorological conditions of any place or region, and their extremes.

CLOCK METHOD: Means of establishing a flight path to a target on a fire by referring to clock directions from the aircraft's present location, with the nose of the aircraft pointing at 12:00.

CLOSED AREA: An area in which specified activities or entry are temporarily restricted to reduce risk of human-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.

CLOUD: A visible cluster of minute water/ice particles in the atmosphere.

CLOUDY: Adjective class representing the degree to which the sky is obscured by clouds. In weather forecast terminology, expected cloud cover of about 0.7 or more warrants use of this term. In the National Fire Danger Rating System, 0.6 or more cloud cover is termed "cloudy."

COLD FRONT: The leading edge of a relatively cold air mass which displaces and may cause warmer air to rise. If the lifted air contains enough moisture, cloudiness, precipitation and even thunderstorms may result. As fronts move through a region, in the Northern Hemisphere, the winds at a given location will experience a marked shift in direction. Ahead of an approaching cold front, winds will usually shift gradually from southeast to south, and on to southwest. As a cold front passes, winds shift rapidly to west, then northwest. Typical cold front windspeeds range between 15 and 30 mph but can be much higher.

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

COLLECTIVE CONTROL: Controls the pitch angle of the main (helicopter) rotor blades. Used

as primary altitude control.

COLONIZER: Species of vegetation that establish on a burned (or otherwise denuded) site from seed.

COMBINATION NOZZLE: Also called an "adjustable fog nozzle," this nozzle is designed to provide either a solid stream or a fixed spray pattern suitable for applying water, wet water or foam solution.

COMBINATION NOZZLE TIP: Two attached straight stream nozzle tips of different orifice size used to increase or restrict water flow.

COMBUSTION: The rapid oxidation of fuel in which heat and usually flame are produced. Combustion can be divided into four phases: preignition, flaming, smoldering, and glowing.

COMBUSTION EFFICIENCY: The relative amount of time a fire burns in the flaming phase of combustion, as compared to smoldering combustion. A ratio of the amount of fuel that is consumed in flaming combustion compared to the amount of fuel consumed during the smoldering phase, in which more of the fuel material is emitted as smoke particles because it is not turned into carbon dioxide and water.

COMBUSTION PERIOD: Total time required for a specified fuel component to be completely consumed.

COMBUSTION RATE: Rate of heat release per unit of burning area per unit of time. (see also REACTION INTENSITY)

COMMAND: The act of directing, and/or controlling resources by virtue of explicit legal, agency, or delegated authority.

COMMAND STAFF: The command staff consists of the information officer, safety officer and liaison officer. They report directly to the incident commander and may have an assistant or assistants, as needed.

COMMERCIAL FOREST LAND: Land that is producing, or is capable of producing, crops of industrial wood and is not withdrawn from timber use by statute or administrative regulation.

COMMISSARY: Supply of items such as candy, tobacco products, toilet items, and work clothes that are made available for sale to firefighters working on a wildfire.

COMMISSARY MANAGER (CMSY): Person responsible to the time unit leader for operating the commissary at an incident base or camp.

COMMUNICATIONS UNIT: An organizational unit in the Logistics Section responsible for

providing and maintaining communication services at an incident. May also be a facility (e.g., a trailer or mobile van) used to provide the major part of an incident communications center.

COMPACTNESS: Spacing between fuel particles.

COMPACTS: Formal working agreements among agencies to obtain mutual aid.

COMPANY: Any piece of (fire) equipment having a full complement of personnel.

COMPASS ROSE: A circle, graduated in degrees, printed on some charts or marked on the ground at an airport or heliport. It is used as a reference to either true or magnetic direction.

COMPENSATION/CLAIMS UNIT: Functional unit within the Finance/Administration Section responsible for financial concerns resulting from property damage, injuries or fatalities at the incident.

COMPENSATION-FOR-INJURY MANAGER: Person responsible to the compensation/claims unit leader for administering financial matters arising from serious injuries and deaths occurring at an incident.

COMPLEX: Two or more individual incidents located in the same general area which are assigned to a single incident commander or unified command.

COMPRESSED AIR FOAM SYSTEMS (CAFS): A generic term used to describe foam systems consisting of an air compressor (or air source), a water pump, and foam solution.

COMPUTED GROSS WEIGHT: Term used in calculating permissible payload for helicopters. Computed gross weight is the maximum computed gross weight, from performance charts, at which a helicopter is capable of hovering in ground effect or hovering out of ground effect at stated density altitude.

CONCENTRATE: A substance that has been concentrated; specifically, a liquid that has been made denser, as by the removal of some of its water.

CONDENSATION: The process by which a gas becomes a liquid.

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.

CONDUCTION: Heat transfer through a solid material from a region of higher temperature to a region of lower temperature.

CONFINE A FIRE: The least aggressive wildfire suppression strategy, typically allowing the wildland fire to burn itself out within determined natural or existing boundaries such as rocky ridges, streams, and possibly roads.

CONFLAGRATION: A raging, destructive fire. Often used to connote such a fire with a moving front as distinguished from a fire storm.

CONFLAGRATION THREAT: Likelihood that a wildfire capable of causing considerable damage will occur.

CONSISTENCY (Foam): Uniformity and size of bubbles.

CONSTANT DANGER: Resultant of all fire danger factors that are relatively unchanging in a specific area (e.g., resource values at risk, topography, fuel type, exposure to prevailing wind).

CONSUMPTION: The amount of a specified fuel type or strata that is removed through the fire process, often expressed as a percentage of the preburn weight.

CONTAIN A FIRE: A moderately aggressive wildfire suppression strategy which can reasonably be expected to keep the fire within established boundaries of constructed firelines under prevailing conditions.

CONTAINMENT: (1) Completion of a control line around a fire and any associated spot fires which can reasonably be expected to stop the fire's spread. (2) The act of controlling hazardous spilled or leaking materials.

CONTINENTAL CLIMATE: Climate that is characteristic of the interior of a land mass of continental size, marked by large annual diurnal and day-to-day ranges of temperature, low relative humidity and irregular precipitation.

CONTOUR MAP: A map having lines of equal elevation that represent the land surface,(Topographic).

CONTROL A FIRE: To complete control line around a fire, any spot fire therefrom, and any interior island 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. (Syn. CONTROLLED)

CONTROL FORCE: Personnel and equipment used to control a fire.

CONTROLLED: The completion of control line around a fire, any spot fires therefrom, and any interior islands to be saved; burned 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 the foreseeable conditions. (Syn. CONTROL A FIRE)

CONTROLLED AIRSPACE: Airspace of defined dimensions within which air traffic control service is provided to IFR and VFR flights in accordance with the airspace classification.

CONTROL LINE: An inclusive term for all constructed or natural barriers and treated fire edges used to control a fire.

CONTROLLING NOZZLE: Shut-off nozzle that permits the nozzle operator to open or close the nozzle or adjust the pattern of the stream.

CONTROL TIME: The time a fire is declared controlled.

CONVECTION: (1) The transfer of heat by the movement of a gas or liquid; convection, conduction, and radiation are the principal means of energy transfer. (2) As specialized in meteorology, atmospheric motions that are predominantly vertical in the absence of wind (which distinguishes this process from advection), resulting in vertical transport and mixing of atmospheric properties.

CONVECTION COLUMN: The rising column of gases, smoke, fly ash, particulates, and other debris produced by a fire. The column has a strong vertical component indicating that buoyant forces override the ambient surface wind. (see also SMOKE PLUME)

CONVECTIVE ACTIVITY: General term for manifestations of convection in the atmosphere, alluding particularly to the development of convective clouds and resulting weather phenomena, such as showers, thunderstorms, squalls, hail, tornadoes, etc.

CONVECTIVE-LIFT FIRE PHASE: The phase of a fire when most of the emissions are entrained into a definite convection column.

CONVERGENCE: The term for horizontal air currents merging together or approaching a single point, such as at the center of a low pressure area producing a net inflow of air. The excess air is removed by rising air currents. Expansion of the rising air above a convergence zone results in cooling, which in turn often gives condensation (clouds) and sometimes precipitation.

CONVERGENCE ZONE: (1) The area of increased flame height and fire intensity produced when two or more fire fronts burn together. (2) In fire weather, that area where two winds come together from opposite directions and are forced upwards often creating clouds and precipitation.

CONVERSION BURNING: Burning an area where brush has excluded forest reproduction to prepare the area for tree planting.

COOPERATIVE FIRE PROTECTION (CFP): A staff unit within the branch of State and Private Forestry or Aviation and Fire Management in the National Forest System, USDA Forest

Service.

COOPERATOR: Local agency or person who has agreed in advance to perform specified fire control services and has been properly instructed to give such service.

COOPERATING AGENCY: An agency supplying assistance including but not limited to direct tactical or support functions or resources to the incident control effort (e.g. Red Cross, law enforcement agency, telephone company, etc.). (see also AGENCY, SUPPORTING AGENCY)

CO-OP FIRE: Refers to federal, state, and local cooperative fire programs.

COORDINATION: The process of systematically analyzing a situation, developing relevant information, and informing appropriate command authority of viable alternatives for selection of the most effective combination of available resources to meet specific objectives. The coordination process (which can be either intra- or interagency) does not involve dispatch actions. However, personnel responsible for coordination may perform command or dispatch functions within limits established by specific agency delegations, procedures, legal authority, etc.

COORDINATION CENTER: Term used to describe any facility that is used for the coordination of agency or jurisdictional resources in support of one or more incidents.

COORDINATED RESOURCE MANAGEMENT: A process that directly involves everyone concerned with resource management in a given planning area.

COORDINATES: The intersection of lines of reference, usually expressed in degrees/minutes/seconds of latitude and longitude, used to determine or report position or location.

CORIOLIS FORCE: An apparent force due to the rotation of the earth that causes a deflection of air to the right in the Northern Hemisphere and to the left in the Southern Hemisphere.

CORROSION: Result of chemical reaction between a metal and its environment (i.e., air, water, and impurities in same).

COST SHARING AGREEMENTS: Agreements between agencies or jurisdictions to share designated costs related to incidents. Cooperative Fire Protection Agreements with States, agencies, and jurisdictions outline the procedures for cost sharing.

COST UNIT: Functional unit within the finance/administration section responsible for tracking costs, analyzing cost data, making cost estimates, and recommending cost-saving measures.

COUNCIL TOOL: Long-handled combination rake and cutting tool, the blade of which is

constructed of a single row of three or four sharpened teeth. Also called fire rake, council rake. (see also RICH TOOL)

COUNTER FIRE: Fire set between main fire and backfire to hasten spread of backfire. Emergency firing to stop, delay, or split a fire front, or to steer a fire. Also called draft fire.

COUPLING: Device that connects the ends of adjacent hoses or other components of hose.

COURSE: In aviation, the intended direction of horizontal flight.

COVER: The area on the ground covered by the combined aerial parts of plants expressed as a percent of the total area.

COVERAGE LEVEL: Recommended amount of aerially applied retardant keyed to the NFDRS fuel models and/or fire behavior models. Coverage level 2 represents 2 gallons of retardant per hundred square feet. Levels range from 1 to 6 for most fuel models. A coverage level of greater than 6 is for heavy fuels. The levels can be adjusted for fire behavior.

COVER TYPE: The designation of a vegetation complex described by dominant species, age, and form.

COYOTE TACTICS: A progressive line construction duty involving self-sufficient crews which build fire line until the end of the operational period, remain at or near the point while off duty, and begin building fireline again the next operational period where they left off.

CREEPING FIRE: Fire burning with a low flame and spreading slowly.

CREW: An organized group of firefighters under the leadership of a crew boss or other designated official.

CREW BOSS: A person in supervisory charge of usually 16 to 21 firefighters and responsible for their performance, safety, and welfare.

CREW SHUTTLE: Transportation of fireline personnel to and/or from assigned fireline locations.

CREW TRANSPORT: Any vehicle capable of transporting a specified number of personnel in a specified manner.

CRITERIA POLLUTANTS: Those air pollutants designated by the Environmental Protection Agency as potentially harmful and for which ambient air standards have been set to protect the

public health and welfare. The criteria pollutants are carbon monoxide, sulfur dioxide, particulate, nitrogen dioxide, ozone, hydrocarbons and lead.

CRITICAL BURNOUT TIME: Total time a fuel can burn and continue to feed energy to the base of a forward-travelling convection column.

CROSS SHOT: Intersecting lines of sight from two points to the same object, frequently used to determine location of a fire from lookouts. Also called cross bearing.

CROWN CONSUMPTION: Combustion of the twigs, and needles or leaves of a tree during a fire.

CROWN COVER: The ground area covered by the crown of a tree as delimited by the vertical projection of its outermost perimeter.

CROWN FIRE: A fire that advances from top to top of trees or shrubs more or less independent of a surface fire. Crown fires are sometimes classed as running or dependent to distinguish the degree of independence from the surface fire.

CROWN OUT: A fire that rises from ground into the tree crowns and advances from tree top to tree top. To intermittently ignite tree crowns as a surface fire advances.

CROWN RATIO: The ratio of live crown to tree height.

CROWN SCORCH: Browning of needles or leaves in the crown of a tree or shrub caused by heating to lethal temperature during a fire. Crown scorch may not be apparent for several weeks after the fire.

CROWN SCORCH HEIGHT: The height above the surface of the ground to which a tree canopy is scorched.

CROWNING POTENTIAL: A probability that a crown fire may start, calculated from inputs of foliage moisture content and height of the lowest part of the tree crowns above the surface.

CUMULONIMBUS: The ultimate growth of a cumulus cloud into an anvil-shaped cloud with considerable vertical development, usually with fibrous ice crystal tops, and usually accompanied by lightning, thunder, hail, and strong winds.

CUMULUS: A principal low cloud type in the form of individual cauliflower-like cells of sharp non-fibrous outline and less vertical development than cumulonimbus.

CUP TRENCH: A fireline trench on the downhill side of fire burning on steep slopes that is supposed to be built deep enough to catch rolling firebrands that could otherwise start fire below

the fireline. A high berm on the outermost downhill side of the trench helps the cup trench catch material. Also called gutter trench.

CURB WEIGHT: Weight of a truck empty (without payload and driver) but ready to drive, including a full fuel tank, cooling system, crankcase, tools, spare wheel, and all other equipment specified as standard.

CURING: Drying and browning of herbaceous vegetation or slash.

CYCLIC CONTROL: A cockpit control stick for regulating the tilt of the main rotor(s) in relation to the body of the helicopter. Used as primary control for bank and horizontal movement.

- D -

DAILY ACTIVITY LEVEL: Part of the National Fire Danger Rating System (NFDRS). In fire danger rating, a subjective estimate of the degree of activity of a potential human-caused fire source relative to that which is normally experienced. Five activity levels are defined: none, low, normal, high, and extreme.

DEAD FUELS: Fuels with no living tissue in which moisture content is governed almost entirely by absorption or evaporation of atmospheric moisture (relative humidity and precipitation).

DEBRIS BURNING FIRE: (1) In fire suppression terminology, a fire spreading from any fire originally ignited to clear land or burn rubbish, garbage, crop stubble, or meadows (excluding incendiary fires). (2) In prescribed fire terminology, a fire used to dispose of scattered, piled, or windrowed dead woody fuel, generally in the absence of a merchantable overstory. Its purpose is to reduce unsightly fuel concentrations, or consume unwanted natural fuels to facilitate subsequent resource management or land use actions on the area.

DECK: The helibase operational area that includes the touchdown pad, safety circle, hover lanes, and external cargo transport area.

DECK COORDINATOR: Person responsible to the helibase manager for coordinating the movement of personnel and cargo at the helibase landing area.

DEEP-SEATED FIRE: A fire burning far below the surface in duff, mulch, peat, or other combustibles as contrasted with a surface fire. A fire that has gained headway and built up heat in a structure so as to require greater cooling for extinguishment.

DEEPENING: As it refers to atmospheric pressure, a decrease in the central pressure of a low. This is usually accompanied by intensification of the cyclonic circulation (counter-clockwise wind

flow around the low).

DEGRADATION: In a discussion of fire retardant slurries, deterioration of viscosity.

DELAYED AERIAL IGNITION DEVICES (DAID): Polystyrene balls, 1.25 inches in diameter, containing potassium permanganate. The balls are fed into a dispenser, generally mounted in a helicopter, where they are injected with a water-glycol solution and then drop through a chute leading out of the helicopter. The chemicals react thermally and ignite in 25-30 seconds. The space between ignition points on the ground is primarily a function of helicopter speed, gear ratio of the dispenser, and the number of chutes used (up to four). (see also AERIAL IGNITION DEVICE, HELITORCH, PING-PONG BALL SYSTEM, PLASTIC SPHERE DISPENSER)

DELEGATION OF AUTHORITY: A statement provided to the incident commander by the agency executive delegating authority and assigning responsibility. The delegation of authority can include objectives, priorities, expectations, constraints and other considerations or guidelines as needed. Many agencies require written delegation of authority to be given to incident commanders prior to their assuming command on larger incidents.

DEMOBILIZATION: Release of resources from an incident in strict accordance with a detailed plan approved by the incident commander.

DEMOBILIZATION UNIT: Functional unit within the planning section responsible for assuring orderly, safe and efficient demobilization of incident resources.

DENSE LAYER: A layer of clouds whose ratio of dense sky cover to total sky cover is more than one-half.

DENSE SKY COVER: Sky cover that prevents detection of higher clouds or the sky above it.

DENSITY (Foam): The ratio of the original volume of the nonaerated foam solution to the resultant volume of foam. The inverse of expansion.

DENSITY ALTITUDE: Pressure altitude corrected for temperature deviations from standard atmosphere. Used as an index to aircraft performance characteristics such as take-off distance and rate of climb. Density altitude bears the same relation to pressure altitude as true altitude does to indicated altitude.

DEPLOYMENT ZONE: Used when fire conditions are such that escape routes and safety zones have been compromised. Deployment zones are last ditch areas where fire shelters must be deployed to ensure firefighter survival due to the available space and/or fire behavior conditions at the deployment zone location. (see also SAFETY ZONE)

DEPTH OF BURN (DOB): The reduction in forest floor thickness due to consumption by fire.

DEPUTY: A qualified individual who could be delegated the authority to manage a functional operation or perform a specific task. In some cases, a Deputy could act as relief for a superior. Deputies can be assigned to the incident commander, general staff, and branch directors.

DESIGNATED CONTROL BURN (DESCON): Management system used in the Southern Region of the Forest Service which permits designated personnel to accept specific wildfires as prescribed fires and handle them accordingly. Only fires burning within a specified range of environmental and fuel conditions and contributing to land management goals may be accepted as DESCON fires.

DESICCANT: Chemical that, when applied to a living plant, causes or accelerates drying of its aerial parts; used to facilitate burning of living vegetation by substantially lowering fuel moisture content within a few hours.

DESIGNATED AREA: Those areas identified as principal population centers or other areas requiring protection under state or federal air quality laws or regulations.

DESIRED PLANT COMMUNITY: A plant community which produces the kind, proportion, and amount of vegetation necessary for meeting or exceeding the land use plant goals and activity plan objectives established for the site.

DETECTION: The act or system of discovering and locating fires. (Syn. FIRE DETECTION)

DEW POINT: Temperature to which a specified parcel of air must cool, at constant pressure and water-vapor content, in order for saturation to occur. The dew point is always lower than the wet-bulb temperature, which is always lower than the dry-bulb temperature, except when the air is saturated and all three values are equal. Fog may form when temperature drops to equal the dew point.

DIGITAL ELEVATION MODEL: A set of points which defines the terrain as numbers for computer applications. This data may be used to draw contours, make ortho photos, slope maps, and drive fire models.

DILUTION: A control strategy used in managing smoke from prescribed fires in which smoke concentration is reduced by diluting it through a greater volume of air, either by scheduling during good dispersion conditions or burning at a slower rate.

DIRECT ATTACK: Any treatment applied directly to burning fuel such as wetting, smothering, or chemically quenching the fire or by physically separating the burning from unburned fuel.

DIRECT PROTECTION AREA: That area for which a particular fire protection organization has the primary responsibility for attacking an uncontrolled fire and for directing the suppression

action. Such responsibility may develop through law, contract, or personal interest of the firefighting agent (e.g., a lumber operator). Several agencies or entities may have some basic responsibilities (e.g., private owner) without being known as the fire organization having direct protection responsibility. (Syn. PROTECTION AREA)

DIRECTOR: The ICS title for an individual responsible for supervision of a branch.

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

DISCRETE FREQUENCY: A separate radio frequency most commonly used in air traffic control which reduces frequency congestion by controlling the number of aircraft or other resources operating on a particular frequency.

DISPATCH: The implementation of a command decision to move a resource or resources from one place to another.

DISPATCHER: A person who receives reports of discovery and status of fires, confirms their locations, takes action promptly to provide people and equipment likely to be needed for control efforts. (see also AGENCY DISPATCHER)

DISPATCH CENTER: A facility from which resources are assigned to an incident.

DISPERSION: The decrease in concentration of airborne pollutants as they spread throughout an increasing volume of atmosphere.

DISTANCE MEASURING EQUIPMENT (DME): Aircraft navigational equipment that provides the slant range distance in miles (kilometers) from the aircraft to the VOR station to which the DME is tuned, usually at or near an airport.

DISTURBANCE: A weather system usually associated with clouds, rain and/or wind.

DIURNAL: Daily, especially pertaining to cyclic actions which are completed within 24 hours, and which recur every 24 hours, such as temperature, relative humidity and wind.

DIVERGENCE: The expansion or spreading out of a horizontal wind field. Generally associated with high pressure and light winds.

DIVISION: Divisions are used to divide an incident into geographical areas of operation. Divisions are established when the number of resources exceeds the span-of-control of the operations chief. A division is located within the ICS organization between the branch and the task force/strike team. (see also GROUP)

DOCUMENTATION UNIT: Functional unit within the planning section responsible for

collecting, recording and safeguarding all documents relevant to the incident.

DOODLEBUG (stone boat): Water tank trailer of 200 or 250 gallon (757 or 943 L) capacity. Equipped with suction hose, strainer, and valves for filling backpack cans. Sometimes fitted with a pump making it a self-contained fire unit. When so equipped it can be pulled by pickup or tractor.

DOUBLE DOUGHNUT: Two lengths of hose rolled side by side or a single length rolled into two small coils for convenient handling.

DOUBLE FEMALE COUPLING: A hose-coupling device having two female swivel couplings to permit joining two male hose nipples of the same size and thread type when lines are laid with couplings in opposite or reverse directions.

DOUBLE JACKET HOSE: Fire hose having two cotton or other fiber jackets outside the rubber lining or tubing.

DOUBLE MALE COUPLING: A hose-coupling device having two male thread nipples for connecting hose and for connecting two female couplings of the same diameter.

DOUGHNUT ROLL: A 50 or 100 foot length of hose or a 50 foot length of hose rolled up for easy handling. There are various ways of forming the doughnut. A convenient one has both couplings close together with the male thread protected by the female coupling.

DOWNLOADING (AVIATION): A calculated reduction in payload to provide a margin of safety.

DOZER: Any tracked vehicle with a front mounted blade used for exposing mineral soil. (see also TRACTOR)

DOZER COMPANY: A resource that includes a dozer, its transportation unit and a standard complement of personnel for its operation.

DOZER LINE: Fireline constructed by the front blade of a dozer.

DOZER TENDER: Any ground vehicle with personnel capable of maintenance, minor repairs, and limited fueling of dozers.

DRAFT: Drawing water from static sources such as a lake, pond, cistern, river, etc. into a pump which is above the level of the water supply. This is done by removing the air from the pump and allowing atmospheric pressure [14.7 psi (101 kPa) at sea level] to push water through a noncollapsible suction hose into the pump.

DRAIN TIME: The time (minutes) it takes for foam solution to drop out from the foam mass; for

a specified percent of the total solution contained in the foam to revert to liquid and drain out of the bubble structure.

DRAPED FUELS: Needles, leaves, and twigs that have fallen from above and have lodged on lower branches or brush. Draped fuels are part of aerial fuels.

DRIFT: Effect of wind on smoke, retardant drops, paracargo, smokejumper streamers, etc.

DRIFT SMOKE: Smoke that has drifted from its point of origin and is no longer dominated by convective motion. May give false impression of a fire in the general area where the smoke has drifted.

DRIP TORCH: Hand-held device for igniting fires by dripping flaming liquid fuel on the materials to be burned; consists of a fuel fount, burner arm, and igniter. Fuel used is generally a mixture of diesel and gasoline.

DRIVE AXLE: An axle that supports a portion of the vehicle weight and transmits a driving force to the wheels.

DRIVE WHEELS: The number of wheels that are powered by all of the vehicle's drive axles. Dual tires are considered as single wheels. This information is commonly referenced by the terms "4x2", "4x4", etc. where the first figure indicates the total number of wheels on the ground and the second figure, the number of drive wheels.

DRIZZLE: Precipitation composed exclusively of water drops smaller than 0.02 inches (0.5 mm) in diameter.

DROP CONFIGURATION: The type of air drop selected to cover the target. Terms which specify drop configuration include: Salvo-drop the entire load, Trail- drop tanks in sequence, Single or Double Door-drop a partial load.

DROP PASS: Indicates that the air tanker has the target in sight and will make a retardant drop on this run over the target.

DROP PATTERN: The distribution of an aerially delivered retardant drop on the target area in terms of its length, width, and momentum (velocity x mass) as it approaches the ground. The latter determines the relative coverage level of the fire retardant on fuels within the pattern. (Syn. PATTERN)

DROP ZONE (DZ): Target area for airtankers, helitankers, cargo dropping. (see also TARGET)

DROUGHT: A period of relatively long duration with substantially below-normal precipitation, usually occurring over a large area.

DROUGHT INDEX: A number representing the net effect of evaporation, transpiration and precipitation in producing cumulative moisture depletion in deep duff or upper soil layers. (see also KEETCH-BYRAM DROUGHT INDEX)

DRUM LIFTER: Device used to transport a 55-gallon drum (208 L) via sling on a helicopter.

DRY AIR MASS: A portion of the atmosphere that has a relatively low dew point temperature and where the formation of clouds, fog, or precipitation is unlikely.

DRY BULB: A name given to an ordinary thermometer used to determine the temperature of the air (to distinguish it from the wet bulb).

DRY FOAM: A low expansion foam type with stable bubble structure and slow drain time which is used primarily for resource and property protection.

DRY HYDRANT: Permanent devices with fire engine threads attached to expedite drafting operations in locations where there are water sources suitable for use in fire suppression (e.g., piers, wharves, bridges over streams, highways adjacent to ponds); also permanently installed supply private fire pumps which depend upon suction sources. Also called suction pipe.

DRY LIGHTNING STORM: Thunderstorm in which negligible precipitation reaches the ground. Also called dry storm.

DRY RUN: A trial pass over the target area by a lead plane and/or an airtanker to pinpoint target areas and warn ground personnel of the impending retardant or extinguishing agent drop.

DRY STORAGE: Refers to dry chemical retardants stored at air attack bases and available for mixing with water. (see also WET STORAGE)

DRY ADIABATIC LAPSE RATE: The rate of decrease of temperature with height of a parcel of dry air lifted adiabatically through an atmosphere in hydrostatic equilibrium. Numerically equal to 9.767°C per km or about 5.4°F per thousand feet.

DRY-BULB TEMPERATURE: Temperature of the air.

DRY-BULB THERMOMETER: In a psychrometer, the thermometer not covered with muslin which is used to determine air temperature.

DUFF: The layer of decomposing organic materials lying below the litter layer of freshly fallen twigs, needles, and leaves and immediately above the mineral soil. (see also HUMUS, LITTER)

DURABILITY (Foam): The effective life span of foam bubbles.

DUTY WEEK: Regular number of hours worked per week by a full-time firefighter, excluding overtime.

- E -

EARLY BURNING: Prescribed burning early in the dry season before the leaves and undergrowth are completely dry or before the leaves are shed, as an insurance against more severe fire damage later on.

ECOSYSTEM: An interacting natural system including all the component organisms together with the abiotic environment and processes affecting them.

ECONOMIC FIRE PROTECTION THEORY: A concept postulating that the object of fire protection is to minimize total cost (i.e., sum of the costs of fire prevention, fire presuppression, fire detection, fire suppression, and net costs of fire damage/benefits).

EDDY: A circular-like flow of a fluid (such as air or water) drawing its energy from a flow of much larger scale, and brought about by pressure irregularities as in the downwind (lee) side of a solid obstacle. For example, wind conditions may be erratic on the downwind side of large rock outcroppings, buildings, etc.

EDGE: (1) The place where plant communities meet or where successional stages or vegetative conditions within plant communities come together. (2) The boundary between two fairly distinct fuel types.

EDGE FIRING: Method of burning in which fires are set along the edges of an area and allowed to spread inward.

EDUCTOR: A device used to introduce and mix fire chemical into a water stream. An eductor is a fitting with three ports, an inlet for water flow, an outlet for water flow, and an inlet for fire chemical concentrate. The flow of water through the eductor produces a region of lower pressure at the fire chemical inlet, drawing the chemical into the water stream.

EFFECTIVE WINDSPEED: The midflame windspeed adjusted for the effect of slope on fire spread.

EJECTOR: A syphon device used to fill an engine's tank when the water source is below or beyond the engine's drafting capability.

ELAPSED TIME: The total time taken to complete any step(s) in fire suppression. NOTE: Generally divided chronologically into discovery time, report time, getaway time, travel time, attack time, control time, mop-up time, and patrol time.

ELEVATION LOSS: In hydraulics, the pressure loss caused by raising water through hose or pipe to a higher elevation (roughly equal to one psi for every two-foot increase in elevation above the pump) (11.3 kPa per meter).

EMERGENCY: Any incident which requires the response of a fire protection organization's attack units and/or support units.

EMERGENCY FIREFIGHTER (EFF): Person employed as emergency worker on forest or wildland fire which threatens damage to property under public management. Hired for the duration of the emergency only. (see also CASUALS)

EMERGENCY LOCATOR TRANSMITTER (ELT): A radio transmitter attached to the aircraft structure which operates from its own power source on 121.5 MHz and 243 MHz, transmitting a distinctive downward swept audio tone for homing purposes and is designed to function without human action after an accident.

EMERGENCY MANAGEMENT COORDINATOR/DIRECTOR: The individual within each political subdivision that has coordination responsibility for jurisdictional emergency management.

EMERGENCY MEDICAL TECHNICIAN (EMT): A health-care specialist with particular skills and knowledge in pre-hospital emergency medicine.

EMERGENCY OPERATIONS CENTER (EOC): A pre-designated facility established by an agency or jurisdiction to coordinate the overall agency or jurisdictional response and support to an emergency.

EMERGENCY OPERATIONS PLAN: The plan that each jurisdiction has and maintains for responding to appropriate hazards.

EMISSION: A release into the outdoor atmosphere of air contaminants such as smoke.

EMISSION FACTOR (EF_p): The mass of particulate matter produced per unit mass of fuel consumed (pounds per ton, grams per kilogram).

EMISSION RATE: The amount of smoke produced per unit of time (lb./min). Emission Rate = Available Fuel x Burning Rate x Emission Factor.

EMISSION REDUCTION: A strategy for controlling smoke from prescribed fires that minimizes the amount of smoke output per unit area treated.

EMISSION STANDARD: Limitation on the release of a contaminant, or multiple contaminants, to the ambient air from a single source.

EMPTY WEIGHT: Weight of an aircraft/engine including the structure, powerplant, all fixed

equipment, all fixed ballast, unusable fuel, undrainable oil, and total quantity of hydraulic fluid.

ENERGY RELEASE COMPONENT (ERC): The computed total heat release per unit area (British thermal units per square foot) within the flaming front at the head of a moving fire.

ENGINE: Any ground vehicle providing specified levels of pumping, water, and hose capacity but with less than the specified level of personnel.

ENGINE COMPANY: A resource that includes an engine of a specific type. The type specifies tank capacity, pump rating, hose capacity and number of personnel.

ENHANCEMENT BURN: Prescribed fire for recreation and aesthetic purposes (e.g., maintain park-like stands of trees, increase number and visibility of flowering annuals and biennials).

ENTRAPMENT: A situation where personnel are unexpectedly caught in a fire behavior-related, life-threatening position where planned escape routes or safety zones are absent, inadequate, or compromised. An entrapment may or may not include deployment of a fire shelter for its intended purpose. These situations may or may not result in injury. They include "near misses."

ENVELOPMENT: Direct attack with multiple anchor points, that allows for multiple points of attack. Generally used as an engine tactic in the wildland/urban interface.

ENVIRONMENT: The complex surroundings of an item or area of interest, such as air, water, natural resources, and their physical conditions (temperature, humidity).

ENVIRONMENTAL LAPSE RATE: The actual rate of decrease of temperature with elevation.

ENVIRONMENTAL SPECIALIST: Person responsible to the planning section chief for collecting and analyzing environmental information about the incident area, determining environmental restrictions and requirements, and providing the information as an input to the incident action plan and to incident personnel as needed.

EPISODE (Pollution): A condition of poor contaminant dispersion which may result in concentrations considered potentially harmful to health or welfare. Episodes may also occur during periods of fairly good dispersion if the source of air contaminants is extremely large.

EQUILIBRIUM MOISTURE CONTENT: Moisture content that a fuel particle will attain if exposed for an infinite period in an environment of specified constant temperature and humidity. When a fuel particle reaches equilibrium moisture content, net exchange of moisture between it and its environment is zero.

EQUIPMENT MANAGER: Person responsible to the ground support unit leader for servicing, repairing, and fueling all apparatus and equipment on the incident, for obtaining transportation

and scheduling its use, and for maintaining records of equipment service and use.

EQUIPMENT TIME RECORDER: Person responsible to the time unit leader for assisting all other units at the incident in properly maintaining a daily record of equipment use time, maintaining current records for charges and credits for fuel, parts, services, and commissary items for all equipment, and checking and closing all time record forms before demobilization of equipment.

EQUIPMENT USE FIRE: Fire caused by mechanical equipment other than railroad operations.

ESCAPE ROUTE: A preplanned and understood route firefighters take to move to a safety zone or other low-risk area. When escape routes deviate from a defined physical path, they should be clearly marked (flagged).

ESCAPED FIRE: Fire which has exceeded or is expected to exceed initial attack capabilities or prescription.

ESCAPED FIRE SITUATION ANALYSIS (EFSA): A decision-making process that evaluates alternative suppression strategies against selected environmental, social, political, and economic criteria. Provides a record of decisions.

ESTIMATED TIME OF ARRIVAL (ETA): Term used in resource planning/forecasting to estimate time of arrival at a point.

ESTIMATED TIME OF DEPARTURE (ETD): Term used in resource planning/forecasting to estimate time of departure from a point.

ESTIMATED TIME EN ROUTE (ETE): Term used in resource planning/forecasting to estimate time spent between points.

EVAPORATION: The transformation of a liquid to its gaseous state; heat is released by the liquid during this process.

EVENT: A planned, non-emergency activity. ICS can be used as the management system for a wide range of events, e.g., parades, concerts or sporting events.

EXEMPT/NONEXEMPT: Categories of employees as defined in the Fair Labor Standards Act (FLSA), who are either covered or exempted from coverage under the Act: Pay entitlements vary depending on the employee's FLSA status.

EXHAUST PRIMER: Device which uses the exhaust cylinder of an engine for priming a centrifugal pump.

EXPANDED DISPATCH: An organization needed to support an incident which expands along

with the Incident Command System.

EXPANSION: The ratio of the volume of the foam in its aerated state to the original volume of the non-aerated foam solution.

EXPOSURE FIRE: Classification for a fire not originating in a building, but which ignites building(s). A fire originating in one building and spreading to another is classified under the original cause of fire.

EXPOSURE: (1) Property that may be endangered by a fire burning in another structure or by a wildfire. (2) Direction in which a slope faces, usually with respect to cardinal directions. (see also ASPECT) (3) The general surroundings of a site with special reference to its openness to winds.

EXTEND: To drop retardant in such a way that the load slightly overlaps and links a previous drop. "Extend your last drop."

EXTENDED ATTACK INCIDENT: A wildland fire that has not been contained or controlled by initial attack forces and for which more firefighting resources are arriving, en route, or being ordered by the initial attack incident commander. Extended attack implies that the complexity level of the incident will increase beyond the capabilities of initial attack incident command.

EXTERIOR FIRE PROTECTION: The protection of structures from the exterior, with no interior access or activity.

EXTERNAL LOAD: A load that is carried or extends outside of the aircraft fuselage.

EXTERNAL PAYLOAD: Maximum external stress load (in pounds) with full fuel and pilot in calm air at standard atmospheric temperature.

EXTINGUISHING AGENT: Substance used to put out a fire by cooling the burning material, blocking the supply of oxygen, or chemically inhibiting combustion.

EXTRA BURNING PERIOD: For any particular fire which is neither contained nor controlled, any 24-hour period following the termination of the first burning period.

EXTREME FIRE BEHAVIOR: "Extreme" implies a level of fire behavior characteristics that ordinarily precludes methods of direct control action. One or more of the following is usually involved: high rate of spread, prolific crowning and/or spotting, presence of fire whirls, strong convection column. Predictability is difficult because such fires often exercise some degree of influence on their environment and behave erratically, sometimes dangerously. (see also BLOWUP, FLARE-UP and FIRE STORM)

- F -

FACILITIES UNIT: Functional unit within the logistics section that provides the layout, activation, and management of all incident facilities. These facilities may include the incident base, feeding areas, sleeping areas, sanitary facilities, etc.

FACILITY MAINTENANCE SPECIALIST: Person responsible to the base / camp manager for general maintenance of the base or camp, including provision of sleeping and sanitation facilities, lighting and electricity, and camp cleanliness.

FAHRENHEIT: A temperature scale on which 32^o F denotes the temperature of melting ice, and 212^o F the temperature of boiling water, both under standard atmospheric pressure.

FALLER: A person who fells trees. Also called sawyer, and cutter.

FALSE ALARM: A reported smoke or fire requiring no suppression; for example, brush burning under control, mill smoke, false smoke, etc.

FEDERAL AVIATION REGULATION (FAR): Refers to the regulations governing all aviation activities of civil aircraft within the United States and its territories.

FEDERAL LAND POLICY AND MANAGEMENT ACT (FLPMA): Federal Land Policy and Management Act of 1976 (Public Law 94-570, 90 Stat. 2743, 43 USC 1701).

FEMALE COUPLING: Coupling made to receive a male coupling of the same thread, pitch and/or diameter.

FIELD OBSERVER: Person responsible to the Situation Unit Leader for collecting and reporting information about an incident obtained from personal observations and interviews.

FILLING: An increase in the central pressure of a low. Counter- clockwise wind flow around the low usually decreases as filling occurs.

FINAL APPROACH: Flight path in the direction of the landing along the extended runway center line from the base leg to the runway.

FINAL RUN: An air tanker is "on final" when it is on line with the target and intends to make the drop on that pass; also applies to cargo dropping.

FINANCE/ADMINISTRATION SECTION: The section responsible for all incident costs and financial considerations. Includes the time unit, procurement unit, compensation/claims unit and cost unit.

FINE FUEL MOISTURE: The probable moisture content of fast-drying fuels which have a timelag constant of 1 hour or less; such as, grass, leaves, ferns, tree moss, pine needles, and small twigs (0-1/4").

FINE FUELS: Fast-drying dead fuels, generally characterized by a comparatively high surface area-to-volume ratio, which are less than 1/4-inch in diameter and have a timelag of one hour or less. These fuels (grass, leaves, needles, etc.) ignite readily and are consumed rapidly by fire when dry. (see also FLASH FUELS)

FINGERS OF A FIRE: The long narrow extensions of a fire projecting from the main body.

FIRE AGENCY: Official group or organization compelled and authorized under statutes or law to control fires within a designated area or upon designated lands. (see also RESPONSIBLE FIRE AGENCY, PROTECTING AGENCY)

FIRE ANALYSIS: Review of fire management actions taken on a specific fire, group of fires, or fire season in order to identify reasons for both effective and ineffective actions, and to recommend or prescribe ways and means of doing a more efficient job. Also called hot line review.

FIREBASE: Computerized bibliographic information file that stores and retrieves citations and information digests of fire related information.

FIRE BEHAVIOR: The manner in which a fire reacts to the influences of fuel, weather, and topography.

FIRE BEHAVIOR FORECAST: Prediction of probable fire behavior, usually prepared by a fire behavior analyst, in support of fire suppression or prescribed burning operations.

FIRE BEHAVIOR PREDICTION MODEL: A set of mathematical equations that can be used to predict certain aspects of fire behavior when provided with an assessment of fuel and environmental conditions.

FIRE BEHAVIOR PREDICTION SYSTEM: A system that uses a set of mathematical equations to predict certain aspects of fire behavior in wildland fuels when provided with data on fuel and environmental conditions.

FIRE BEHAVIOR ANALYST: Person responsible to the planning section chief for establishing a weather data collection system and for developing fire behavior predictions based on fire history, fuel, weather, and topography.

FIRE BENEFITS: Fire effects with positive monetary, social, or emotional value or that contribute, through changes in the resource base, to the attainment of organizational goals.

FIREBRAND: Any source of heat, natural or human made, capable of igniting wildland fuels. Flaming or glowing fuel particles that can be carried naturally by wind, convection currents, or by gravity into unburned fuels.

FIREBREAK: A natural or constructed barrier used to stop or check fires that may occur, or to provide a control line from which to work.

FIRE 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.

FIRECAST: Set of computerized FIREMODELS run during fire season at the operations coordination center on preselected locations to indicate possible fire spread from those points for that date.

FIRE CAUSE: For statistical purposes fires are grouped into broad cause classes. The nine general causes used in the U.S. are: lightning, campfire, smoking, debris burning, incendiary, machine use (equipment), railroad, children, and miscellaneous.

FIRE CAUSE CLASS: Any class into which wildland fires are grouped according to their origin.

FIRE CLIMATE: Composite pattern of weather elements over time that affect fire behavior in a given region.

FIRE CLIMAX: Plant community maintained by periodic fires.

FIRE CONCENTRATION (Complex): (1) Generally, a situation in which numerous fires are burning in a locality. (2) More specifically, the number of fires per unit area or locality for a given period, generally a year.

FIRE CREW: General term for two or more firefighters organized to work as a unit.

FIRE CREW WORK FORMATION: Standard crew arrangement used for fireline construction in indirect attack; consists of line locator, line cutters, rakers, torch operators, and mopup crew.

FIRE DAMAGE: Detrimental fire effects expressed in monetary or other units, including the unfavorable effects of fire-induced changes in the resource base on the attainment of organizational goals.

FIRE DAMAGE APPRAISAL: Method of determining financial or other losses resulting from a fire.

FIRE DANGER: Sum of constant danger and variable danger factors affecting the inception, spread, and resistance to control, and subsequent fire damage; often expressed as an index.

FIRE DANGER INDEX: A relative number indicating the severity of wildland fire danger as determined from burning conditions and other variable factors of fire danger.

FIRE DANGER RATING: A fire management system that integrates the effects of selected fire danger factors into one or more qualitative or numerical indices of current protection needs.

FIRE DANGER RATING AREA: Geographical area within which climate, fuel, and topography are relatively homogeneous, hence fire danger can be assumed to be uniform.

FIRDAT (Fire Data Manipulation Program): A routine of FIREFAMILY that combines historical weather records with the equations of the NFDRS to produce frequency distributions of the NFDRS indexes and components. (see also FIREFAMILY)

FIRE DAY: Standard 24-hour period beginning at 1000 hours, during which most wildfires undergo a predictable speeding up and slowing down of intensity, depending primarily on the influence of weather and fuel factors.

FIRE DEATH: Fire casualty which is fatal or becomes fatal within one year of the fire.

FIRE DETECTION: Act or system of discovering and locating fires. (Syn. DETECTION)

FIRE DISCOVERY: The act of determining that a fire exists; does not include determining its location.

FIRE DISTRICT: A rural or suburban fire organization, usually tax supported, that maintains fire companies and apparatus. It is also called a fire protection district.

FIRE DUTY: Actual physical engagement in firefighting service as distinguished from staff work at headquarters or maintenance division; work at an individual fire done by an individual firefighter or by a company.

FIRE ECOLOGY: The study of the effects of fire on living organisms and their environment.

FIRE EDGE: The boundary of a fire at a given moment.

FIRE EFFECTS: The physical, biological, and ecological impacts of fire on the environment.

FIRE ENVIRONMENT: The surrounding conditions, influences, and modifying forces of topography, fuel, and weather that determine fire behavior.

FIREFAMILY (Fire Data Program): A computer program that uses historical weather data for fire planning. Its three major routines are FIRDAT, SEASON, and FIRINF.

FIREFIGHTER: Person whose principal function is fire suppression.

FIREFIGHTING FORCES: Qualified firefighters, together with their equipment and material, used to suppress wildland fires.

FIREFIGHTING TECHNOLOGY IMPLEMENTATION PROGRAM (FIRETIP): A computer program through which the technology of FIRESCOPE is transferred to areas outside southern California, where complex, multi-agency fires and other incidents commonly occur.

FIREFINDER MAP: A map, generally mounted on a wood or metal base, that is provided with an azimuth circle at the center of which is pivoted an alidade, and forms part of an Osborne Firefinder. (see also OSBORNE FIREFINDER)

FIRELAMP (Fire and Land Management Planning): Computerized multi-resource model that simulates the effects that naturally caused prescribed fires have on the future production of natural resources such as timber, forage, wildlife, recreation, and water.

FIRELINE: The part of a control line that is scraped or dug to mineral soil. Also called fire trail.

FIRE-FLOOD CYCLE: The greatly increased rate of water run off and soil movement from steep slopes that may follow removal of the vegetative cover by burning.

FIRE FREQUENCY: The number of fires per unit time in some designated area. The size of the area must be specified (units-number/time/area).

FIRE FRONT: The part of a fire within which continuous flaming combustion is taking place. Unless otherwise specified, the fire front is assumed to be the leading edge of the fire perimeter. In ground fires, the fire front may be mainly smoldering combustion.

FIRE GUARD: A general term for a firefighter, lookout, patrol, prevention guard, or other person directly employed for prevention and/or detection and suppression of fires.

FIRE HAZARD: A fuel complex, defined by volume, type condition, arrangement, and location, that determines the degree of ease of ignition and of resistance to control.

FIRE HAZARD INDEX: A numerical rating for specific fuel types, indicating the relative probability of fires starting and spreading, and the probable degree of resistance to control; similar to burning index, but without effects of wind speed.

FIRE HAZARDOUS AREAS: Those wildland areas where the combination of vegetation, topography, weather, and the threat of fire to life and property create difficult and dangerous problems.

FIRE INCIDENCE: The average number of fires in a specified area during a specified time period. (Syn. FIRE OCCURRENCE)

FIRE INFORMATION RETRIEVAL AND EVALUATION SYSTEM (FIRES): A personal computer (PC) program that merges fire and weather/index files, and allows plotting and analysis of fire occurrence and fire danger.

FIRE INJURY: Injury suffered as the result of a fire that requires (or should require) treatment by a practitioner of medicine within one year of the fire, regardless of whether treatment was actually received.

FIRE INSURANCE TREE: A seed tree left as a precaution against regeneration being destroyed by fire.

FIRELINE INTENSITY: The product of the available heat of combustion per unit of ground and the rate of spread of the fire, interpreted as the heat released per unit of time for each unit length of fire edge. The primary unit is Btu per second per foot (Btu/sec/ft) of fire front.

FIRE INTERVAL: Time (in years) between two successive fires in a designated area (i.e., the interval between two successive fire occurrences); the size of the area must be clearly specified.

FIRE INVESTIGATION: Procedure undertaken to determine, at a minimum, when, where, how a fire (or fires) started, and by whom.

FIRE LANE: Cleared path wide enough to permit single-lane vehicular access in a remote area.

FIRELINE EXPLOSIVES (FLE): Specially developed coils containing explosive powder that are detonated to create a fireline through ground fuels.

FIRELINE INTENSITY: The rate of heat release per unit time per unit length of fire front. Numerically, it is the product of the heat yield, the quantity of fuel consumed in the fire front, and the rate of spread.

FIRE LOAD: The number and size of fires historically experienced on a given unit over a given period (usually one day) at a given index of fire danger.

FIRE LOAD INDEX (FLI): Numerical rating of the maximum effort required to contain all probable fires occurring within a rating area during the rating period.

FIRE MANAGEMENT: Activities required for the protection of burnable wildland values from fire and the use of prescribed fire to meet land management objectives.

FIRE MANAGEMENT AREA: One or more parcels of land having a common set of fire management objectives.

FIRE MANAGEMENT IMPROVEMENTS: All structures built and used primarily for fire management, e.g. lookout towers, lookout cabins, telephone lines, and also firebreaks, fuelbreaks, and roads to lookouts.

FIRE MANAGEMENT OBJECTIVE: Planned, measurable result desired from fire protection and use based on land management goals and objectives.

FIRE MANAGEMENT PLAN: Statement, for a specific area, of fire policy, objective, and prescribed action; may include maps, charts, tables, and statistical data.

FIREMODEL: Computer program which, with specified information, predicts an hourly rate of spread from a point of origin.

FIRE OCCURRENCE: The average number of fires in a specified area during a specified time period. (Syn. FIRE INCIDENCE)

FIRE OCCURRENCE MAP: A map that shows by symbols the starting points of all fires for a given period.

FIRE PACK: A one-person unit of fire tools, equipment, and supplies prepared in advance for carrying on the back.

FIRE PERIMETER: The entire outer edge or boundary of a fire.

FIRE PLANNING: Systematic technological and administrative management process of designing organization, facilities, and procedures to protect wildland from fire.

FIRE PLOTTING MAP: A map used for determining the location of fires, commonly provided with an azimuth circle to facilitate location by cross bearings.

FIRE PLOW: A heavy duty plowshare or disc plow usually pulled by a tractor to construct a fireline.

FIRE PRESUPPRESSION: Activities undertaken in advance of fire occurrence to help ensure more effective fire suppression; includes overall planning, recruitment and training of fire personnel, procurement and maintenance of firefighting equipment and supplies, fuel treatment, and creating, maintaining, and improving a system of fuelbreaks, roads, water sources, and control lines.

FIRE PREVENTION: Activities, including education, engineering, enforcement and administration, that are directed at reducing the number of wildfires, the costs of suppression, and fire-caused damages to resources and property.

FIRE-PROOFING: Removing or treating fuel with fire retardant to reduce the danger of fires igniting or spreading (e.g., fire-proofing roadsides, campsites, structural timber). Protection is relative, not absolute.

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.

FIRE QUALIFICATIONS: Computerized interagency summary of fire suppression qualifications of listed personnel. Available information includes fire training record, fire experience record, and physical fitness testing score for each individual.

FIRE REGIME: Periodicity and pattern of naturally-occurring fires in a particular area or vegetative type, described in terms of frequency, biological severity, and area extent.

FIRE REPORT: An official record of a fire, generally including information on cause, location, action taken, damage, costs, etc., from start of the fire until completion of suppression action. These reports vary in form and detail from agency to agency.

FIRE RESISTANT TREE: A species with compact, resin-free, thick corky bark and less flammable foliage that has a relatively lower probability of being killed or scarred by a fire than a fire sensitive tree.

FIRE RESOURCES: All personnel and equipment available or potentially available for assignment to incidents.

FIRE RETARDANT: Any substance except plain water that by chemical or physical action reduces flammability of fuels or slows their rate of combustion.

FIRE RISK: (1) The chance of fire starting, as determined by the presence and activity of causative agents. (2) A causative agent. (3) A number related to the potential number of firebrands to which a given area will be exposed during the rating day (National Fire Danger Rating System).

FIRE SCAN: An optical-electronic system for securing infrared imagery from aircraft so as to detect small fires or fire perimeters through smoke, haze and forest canopy.

FIRE SCAR: (1) A healing or healed injury or wound to woody vegetation, caused or accentuated by a fire. (2) The mark left on a landscape by fire.

FIRE SCAR ANALYSIS: Analysis of one or more fire scars to determine individual tree fire frequency or mean fire intervals for specified areas.

FIRE SEASON: (1) Period(s) of the year during which wildland fires are likely to occur, spread, and affect resources values sufficient to warrant organized fire management activities. (2) A legally enacted time during which burning activities are regulated by State or local authority.

FIRESCOPE: Firefighting Resources of California Organized for Potential Emergencies. A multi-agency coordination system designed to improve the capabilities of California's wildland fire protection agencies. Its purpose is to provide more efficient resources allocation and utilization, particularly in multiple or large fire situations during critical burning conditions.

FIRE SENSITIVE TREE: A species with thin bark or highly flammable foliage that has a relatively greater probability of being killed or scarred by a fire.

FIRE SERVICE: The organized fire protection service; its members, individually and collectively; allied organizations assisting protection agencies.

FIRESETTING: Igniting of incendiary fires.

FIRE SEVERITY: Degree to which a site has been altered or disrupted by fire; loosely, a product of fire intensity and residence time.

FIRE SHELTER: An aluminized tent offering protection by means of reflecting radiant heat and providing a volume of breathable air in a fire entrapment situation. Fire shelters should only be used in life threatening situations, as a last resort.

FIRE SHELTER DEPLOYMENT: The removing of a fire shelter from its case and using it as protection against fire.

FIRE SHOVEL: Type of shovel specifically designed for use in constructing a fireline; has a tapered blade with both edges sharpened for scraping, digging, grubbing, cutting, and throwing.

FIRE SIMULATOR: Training device that imposes simulated fire and smoke on a landscape image, for the purpose of instructing fire suppression personnel in different fire situations and fire suppression techniques.

FIRE SPREAD MODEL: A set of physics and empirical equations that form a mathematical representation of the behavior of fire in uniform wildland fuels.

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 tornado-like whirls. (see also BLOWUP, EXTREME FIRE BEHAVIOR and FLARE-UP)

FIRE SUPPRESSANT: Any agent used to extinguish the flaming and glowing phases of combustion by direct application to the burning fuel.

FIRE SUPPRESSION: All work and activities connected with fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished.

FIRE SUPPRESSION ORGANIZATION: (1) The personnel collectively assigned to the suppression of a specific fire or group of fires.
(2) The personnel responsible for fire suppression within a specified area. (3) The management structure, usually shown in the form of an organization chart of the persons and groups having specific responsibilities in fire suppression.

FIRE SWATTER: A fire tool that consists of a thick, flat piece of rubber on a long handle used to drag over or smother out flames of grass fires. (see also FLAPPER)

FIRING TECHNIQUE: Any method of igniting a wildland area to consume the fuel in a prescribed pattern; e.g., heading or backing fire, spot fire, strip-head fire, and ring fire.

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 wildland operations.

FIRE TRAP: (1) An accumulation of highly combustible material, rendering firefighting dangerous. (2) Any situation in which it is highly dangerous to fight fire.

FIRE TREATMENT: The use of fire to accomplish a specified objective.

FIRE TRIANGLE: Instructional aid in which the sides of a triangle are used to represent the three factors (oxygen, heat, fuel) necessary for combustion and flame production; removal of any of the three factors causes flame production to cease.

FIRE WEATHER: Weather conditions which influence fire ignition, behavior, and suppression.

FIRE WEATHER FORECAST: A weather prediction specially prepared for use in wildland fire operations and prescribed fire.

FIRE WEATHER INDEX (FWI): A numerical rating in the Canadian fire danger rating system, based on meteorological measurements of fire intensity in a standard fuel type. (The standard fuel type is representative of jack pine and lodgepole pine.) The FWI is comprised of three fuel moisture codes, covering classes of forest fuel of different drying rates, and two indices that represent rate of spread and the amount of available fuel.

FIRE WEATHER STATION: A meteorological station specially equipped to measure weather elements that have an important effect on fire behavior.

FIRE WEATHER WATCH: A possible critical fire weather pattern. (The NWS has replaced Red Flag Watch with Fire Weather Watch to avoid the overuse of Red Flag Terminology). (see also RED FLAG WARNING)

FIRE WHIRL: Spinning vortex column of ascending hot air and gases rising from a fire and carrying aloft smoke, debris, and flame. Fire whirls range in size from less than one foot to over 500 feet in diameter. Large fire whirls have the intensity of a small tornado.

FIX: Geographical position determined by visual reference to the surface, by reference to one or more radio navigational aids, by celestial plotting, or by any other navigational device.

FIXED-POINT DETECTION: Detection of fires from lookout towers or other semi-permanent locations as distinguished from roving ground patrols or aerial detection.

FIXED TANK: A device mounted inside or directly underneath an aircraft which can contain water or retardant for dropping onto a fire.

FLAME: A mass of gas undergoing rapid combustion, generally accompanied by evolution of sensible heat and incandescence.

FLAME ANGLE: Angle between the flame at the leading edge of the fire front and the ground surface, expressed in degrees.

FLAME DEPTH: The depth of the fire front.

FLAME HEIGHT: The average maximum vertical extension of flames at the leading edge of the fire front. Occasional flashes that rise above the general level of flames are not considered. This distance is less than the flame length if flames are tilted due to wind or slope.

FLAME LENGTH: The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface), an indicator of fire intensity.

FLAME THROWER: Device for throwing a stream of flaming liquid, used to facilitate rapid ignition during burn out operations on a wildfire or during a prescribed fire operation. (Syn. TERRA TORCH ®)

FLAMING COMBUSTION PHASE: Luminous oxidation of gases evolved from the rapid decomposition of fuel. This phase follows the pre-ignition phase and precedes the smoldering combustion phase, which has a much slower combustion rate. Water vapor, soot, and tar comprise the visible smoke. Relatively efficient combustion produces minimal soot and tar and white smoke; high moisture content also produces white smoke.

FLAMING FRONT: That zone of a moving fire where the combustion is primarily flaming. Behind this flaming zone combustion is primarily glowing or involves the burning out of larger fuels (greater than about 3 inches in diameter). Light fuels typically have a shallow flaming front, whereas heavy fuels have a deeper front. (see also FIRE FRONT)

FLAMING PHASE: That phase of a fire where the fuel is ignited and consumed by flaming combustion.

FLAMMABILITY: The relative ease with which fuels ignite and burn regardless of the quantity of the fuels. Preferred to "inflammability."

FLANK FIRE: A firing technique consisting of treating an area with lines of fire set into the wind which burn outward at right angles to the wind.

FLANKING FIRE SUPPRESSION: Attacking a fire by working along the flanks either simultaneously or successively from a less active or anchor point and endeavoring to connect 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.

FLAPPER: Fire suppression tool, sometimes improvised, used in direct attack for smothering out flames along a fire edge; may consist merely of a green pine bough or wet sacking, or be a manufactured tool such as a flap of belting fabric fastened to a long handle. (see also FIRE SWATTER)

FLARE-UP: Any sudden acceleration in rate of spread or intensification of the fire. Unlike blowup, a flare-up is of relatively short duration and does not radically change existing control plans. (see also BLOWUP, EXTREME FIRE BEHAVIOR and FIRE STORM)

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. (see also FINE FUELS)

FLASHOVER: (1) Rapid combustion and/or explosion of unburned gases trapped at some distance from the main fire front. Usually occurs only in poorly ventilated topography. (2) Stage of a fire at which all surfaces and objects within a space have been heated to their ignition temperature, and flame breaks out almost at once over the surface of all objects within the space.

FLIGHT FOLLOWING: The method and process through which an aircraft is tracked from departure point to destination. Flight following is the knowledge of the aircraft location and condition with a reasonable degree of certainty such that, in the event of mishap, those on board may be rescued.

FLIGHT PATH: Track of an aircraft over the earth's surface.

FLIGHT PLAN: Specified information relating to the intended flight of an aircraft that is filed orally or in writing with an air traffic control facility.

FLIGHT TIME: The time from the moment the aircraft first moves under its own power for the purpose of flight until the moment it comes to rest at the next point of landing.

FLIGHT VISIBILITY: Average forward horizontal distance from the cockpit of an aircraft in flight at which prominent unlighted objects may be seen and identified by day and prominent lighted objects may be seen and identified by night.

FLOATABLE PUMP: Small portable pump that floats in the water source.

FLOW CONDITIONER: Chemical powders that will, in very small quantities, tend to prevent other powders from caking and flocculating. Imparts free-flowing qualities to powder. Used with fire retardant chemicals.

FLUID FOAM: A low expansion foam type with some bubble structure and moderate drain time, exhibiting properties of both wet and dry foam types, which is used for extinguishment, protection, and mopup.

FLY ASH: Particulate matter emitted by a fire and larger than 10 microns in diameter with a consequently short residence time in the atmosphere.

FOAM: The aerated solution created by forcing air into, or entraining air in water containing a foam concentrate by means of suitably designed equipment or by cascading it through the air at a high velocity. Foam reduces combustion by cooling, moistening and excluding oxygen.

FOAMING AGENT: An additive that reduces the surface tension of water (producing wet water) causing it to spread and penetrate more effectively and which produces foam through mechanical means.

FOAM BLANKET: A layer of foam which forms an insulating and reflective barrier to heat and is used for fuel protection, suppression, and mopup.

FOAM CONCENTRATE: The concentrated foaming agent as received from the manufacturer which, when added to water, creates a foam solution; use only those approved for use in wildland fire situations by the authority having jurisdiction.

FOAM GENERATION: The foam production process of forcing air into or entraining air in foam solution, creating a mass of bubbles.

FOAM LINE: A body of foam placed along areas to be protected from fire; also used as an anchor for indirect attack in place of hand-made fire trail.

FOAM SOLUTION: A low expansion foam type with no expansion, therefore lacking bubble structure, which is used for mopup and flame knockdown.

FOAM SYSTEMS: The apparatus and techniques used to mix concentrate with water to make solution, pump and mix air and solution to make foam, and transport and apply foam. (Systems defined here include compressed air foam and nozzle aspirated.)

FOAM TYPE: A term used to describe the consistency and viscosity of low expansion foam as the combination of drain time and expansion.

FOEHN WIND: A warm, dry and strong general wind that flows down into the valleys when stable, high pressure air is forced across and then down the lee slopes of a mountain range. The descending air is warmed and dried due to adiabatic compression producing critical fire weather conditions. Locally called by various names such as Santa Ana winds, Devil winds, North winds, Mono winds, etc.

FOLDING TANK: A portable, collapsible water tank with a tubular frame. Tank capacities vary in size from 500-1500 gallons.

FOOD UNIT: Functional unit within the Logistics Section responsible for providing meals for incident personnel.

FORB: A plant with a soft, rather than permanent woody stem, that is not a grass or grasslike plant.

FORCED LANDING: Landing necessitated by failure of engines, systems, or components which makes continued flight impossible and which may not result in damage.

FORECAST AREA: Geographical area for which a fire weather forecast is specified.

FOREST FIRE: Variously defined for legal purposes (e.g., the State of California Public Resources Code: an uncontrolled fire on lands covered wholly or in part by timber, brush, grass, grain, or other flammable vegetation). Types of fires are ground, surface, and crown.

FOREST FLOOR: Organic surface component of the soil supporting forest vegetation; comprised of litter, fermentation, and humus layers.

FOREST PLANNING LANGUAGE AND SIMULATOR (FORPLAN): Computer program developed to facilitate the use of simulation for integrating fire into the land management planning process. FORPLAN incorporates unique characteristics of previous systems, links numerous models and data bases, allows selection of variable resolution levels, and permits discrete time simulation of disturbances on plants, fuels, and animals.

FOREST PROTECTION: That branch of forestry concerned with the prevention and control of damage to forests arising mainly from the action of humans (particularly unauthorized fire, grazing and browsing, felling, fumes and smoke) and of pests and pathogens, but also from storm, frost, and other climatic agencies.

FOREST RESIDUE: Accumulation in the forest of living or dead (mostly woody) material that is added to and rearranged by human activities such as harvest, cultural operations, and land clearing.

FOREST SERVICE: Generally understood to mean an agency of the U.S. Department of Agriculture. However, some states also use Forest Service, e.g., Colorado State Forest Service.

FORESTRY WEATHER INFORMATION SYSTEM (FWIS): A real time system which takes observations and forecasts supplied by NWS in coded numeric form, reformats that input by computer based algorithms, and distributes the reformatted information as numeric and worded diagnoses and forecasts for specialized users in localized areas.

FORWARD RATE OF SPREAD: The speed with which a fire moves in a horizontal direction across the landscape, usually expressed in chains per hour or feet per minute.

FORWARD LOOKING INFRARED (FLIR): Hand held or aircraft mounted device designed to detect heat differentials and display their images on a video screen. FLIRs have thermal resolution similar to IR line scanners, but their spatial resolution is substantially less; commonly used to detect hot spots and flareups obscured by smoke, evaluate the effectiveness of firing operations, or detect areas needing mopup.

FREE BURNING: The condition of a fire or part of a fire that has not been slowed by natural barriers or by control measures.

FREE DROP: Cargo, not attached to a parachute, that is dropped intentionally from an aircraft in flight.

FREE FLOW (Hydraulics): Maximum water flow rate a fire pump will attain when there are no restrictions at the pump outlet or losses due to friction or head.

FREEZING RAIN: Rain that freezes upon contact with objects on the ground.

FREQUENCY OF OCCURRENCE: A quantitative expression of the presence or absence of individuals of a species in a population; the ratio between the number of sample units that contain a species and the total number of sample units.

FRICITION LAYER: The layer of the atmosphere in which the frictional force of the earth's surface exercises an appreciable influence on winds.

FRICITION LOSS: Pressure loss caused by the turbulent movement of water or solution against the interior surface of fire hose, pipe, or fittings; normally measured in pressure loss per length of hose or pipe.

FRICTION REDUCING AGENT (FRA): Water soluble substance that reduces frictional drag of solutions and dampens turbulent flow while being pumped through pipe or hose.

FRONT: In meteorology, the boundary between two air masses of differing atmospheric properties.

FROST: Crystals of ice formed and deposited like dew, but at a temperature below freezing.

FUEL: Combustible material.

FUEL ARRANGEMENT: A general term referring to the spatial distribution and orientation of fuel particles within a natural setting.

FUEL BED: An array of fuels usually constructed with specific loading, depth, and particle size to meet experimental requirements; also, commonly used to describe the fuel composition in natural settings.

FUEL BED DEPTH: Average height of surface fuels contained in the combustion zone of a spreading fire front.

FUELBREAK: A natural or manmade change in fuel characteristics which affects fire behavior so that fires burning into them can be more readily controlled.

FUELBREAK SYSTEM: A series of modified strips or blocks tied together to form continuous strategically located fuel breaks around land units.

FUEL CHARACTERISTICS: Factors that make up fuels such as compactness, loading, horizontal continuity, vertical arrangement, chemical content, size and shape, and moisture content.

FUEL CLASS: Part of the National Fire Danger Rating System (NFDRS). Group of fuels possessing common characteristics. Dead fuels are grouped according to 1-, 10-, 100-, and 1000-hour timelag, and living fuels are grouped as herbaceous (annual or perennial) or woody.

FUEL CONDITION: Relative flammability of fuel as determined by fuel type and environmental conditions.

FUEL CONTINUITY: The degree or extent of continuous or uninterrupted distribution of fuel particles in a fuel bed thus affecting a fire's ability to sustain combustion and spread. This applies to aerial fuels as well as surface fuels.

FUEL DEPTH: The average distance from the bottom of the litter layer to the top of the layer of fuel, usually the surface fuel.

FUEL GROUP: An identifiable association of fuel elements of distinctive species, form, size, arrangement, or other characteristics. General fuel groups are grass, brush, timber, and slash.

FUEL LOADING: The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area. This may be available fuel (consumable fuel) or total fuel and is usually dry weight.

FUEL MANAGEMENT: Act or practice of controlling flammability and reducing resistance to control of wildland fuels through mechanical, chemical, biological, or manual means, or by fire, in support of land management objectives.

FUEL MODEL: Simulated fuel complex for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

FUEL MODIFICATION: Manipulation or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control (e.g., lopping, chipping, crushing, piling and burning). (Syn. FUEL TREATMENT)

FUEL MOISTURE ANALOG: Device that emulates the moisture response of specific classes of dead fuels, constructed from organic or inorganic materials (e.g., half-inch ponderosa pine dowels representing ten-hour timelag fuels).

FUEL MOISTURE CONTENT: The quantity of moisture in fuel expressed as a percentage of the weight when thoroughly dried at 212 degrees 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 wildland fuels.

FUEL REDUCTION: Manipulation, including combustion, or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control.

FUEL SIZE CLASS: A category used to describe the diameter of down dead woody fuels. Fuels within the same size class are assumed to have similar wetting and drying properties, and to preheat and ignite at similar rates during the combustion process.

FUEL TENDER: Any vehicle capable of supplying engine fuel to ground or airborne equipment.

FUEL TREATMENT: Manipulation or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control (e.g., lopping, chipping, crushing, piling and burning). (Syn. FUEL MODIFICATION)

FUEL TYPE: An identifiable association of fuel elements of distinctive species, form, size,

arrangement, or other characteristics that will cause a predictable rate of spread or resistance to control under specified weather conditions.

FUEL TYPE CLASSIFICATION: Division of wildland areas into fire hazard classes.

FUGITIVE COLOR: A coloring agent used in fire retardants that is designed to fade rapidly following retardant application in order to minimize the visual impacts of the retardant.

FUME: An airborne irritating, noxious, or toxic smoke, vapor, or any combination of these produced by a volatile substance or a chemical reaction.

FUNCTION: In ICS, function refers to the five major activities, command, operations, planning, logistics and finance/administration.

FUSEE: A colored flare designed as a railway warning device, widely used to ignite backfires and other prescribed fires.

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GALLONS PER MINUTE (GPM): The measure of water flow in firefighting. It is used to measure the output of wildland and structural fire engines, pumps, hose streams, nozzles, hydrants, and water mains.

GAP: Weak or missed area in a retardant drop.

GATE VALVE: A valve with a gate-like disk that moves up and down at right angles to the flow when actuated by a stem screw and hand wheel. Gate valves are best for service that requires infrequent valve operation and where the disk is kept either fully open or closed.

GEAR PUMP: Positive displacement pump which uses closely meshed gears to propel water when high pressures and low volumes are desired; can be used safely only with clear water--suspended particles of soil or rocks can quickly wear the gears and reduce pressure and volume of water.

GENERAL FIRE WEATHER FORECAST: A forecast, issued daily during the regular fire season to resource management agencies, that is intended for planning of daily fire management activities, including daily staffing levels, prevention programs, and initial attack on wildfires. Also called presuppression forecast. (see also SPOT WEATHER FORECAST, INCIDENT WEATHER FORECAST)

GENERAL SERVICES ADMINISTRATION (GSA): An agency of the United States

Government that includes the Federal Supply Service, the Automated Data and Telecommunications Service, the Public Buildings Service, and the National Archives and Records Service.

GENERAL STAFF: The group of incident management personnel reporting to the Incident Commander. They may each have a deputy, as needed. The General Staff consists of: Operations Section Chief, Planning Section Chief, Logistics Section Chief, and Finance/Administration Section Chief.

GENERAL WINDS: Large scale winds caused by high- and low-pressure systems but generally influenced and modified in the lower atmosphere by terrain. (see also LOCAL WINDS and SLOPE WINDS)

GEOGRAPHIC AREA: A political boundary designated by the wildland fire protection agencies, where these agencies work together in the coordination and effective utilization of resources within their boundaries. The National Interagency Mobilization Guide in Chapter 20, section 21.1, identifies the area encompassed by the eleven NWCG Geographic areas.

GEOGRAPHIC COORDINATE SYSTEM: Mapping system which utilizes degrees and minutes.

GETAWAY TIME: Elapsed time from receipt of notification by the personnel charged with initiating suppression action to the departure of the first attack unit.

GLOBAL POSITIONING SYSTEM (GPS): A system of navigational satellites operated by the U.S. Department of Defense and available for civilian use. The system can track objects anywhere in the world with an accuracy of approximately 40 feet.

GLOWING COMBUSTION: Oxidation of a solid surface accompanied by incandescence, sometimes evolving flame above it.

GLOWING COMBUSTION PHASE: Oxidation of solid fuel accompanied by incandescence. All volatiles have already been driven off and there is no visible smoke. This phase follows the smoldering combustion phase and continues until the temperature drops below the combustion threshold value, or until only non-combustible ash remains.

GLOWING PHASE: Phase of combustion in which a solid surface of fuel is in direct contact with oxygen, and oxidation occurs, usually accompanied by incandescence, and little smoke production.

GOING FIRE: Any wildfire on which suppression action has not reached an extensive mopup stage.

GRADIENT WIND: (1) A wind that flows parallel to pressure isobars or contours and has a

velocity such that the pressure gradient, Coriolis, and centrifugal force acting in the area are in balance. It does not occur at the earth's surface due to frictional influence, but occurs at a height of roughly 1,500 feet above mean terrain height. (2) Wind created by differing barometric pressures between high- and low-pressure systems. Velocity is generally five to 30 miles per hour, and wind shifts are usually gradual as systems move and shift.

GRASS FIRE: Any fire in which the predominant fuel is grass or grasslike.

GRAVIMETRIC: Of, or pertaining to, measurement by weight.

GRAVITY TANK: Water storage tank for fire protection and sometimes community water service that supplies water by gravity pressure.

GREENBELT: Irrigated, landscaped, and regularly maintained fuelbreak, usually put to some additional use (e.g., golf course, park, playground).

GREENHOUSE EFFECT: The heating effect exerted upon the earth because the atmosphere (mainly its water vapor) absorbs and emits infrared radiation.

GRIDDING: To search for a small fire by systematically travelling over an area on parallel courses or gridlines.

GRID IGNITION TECHNIQUE: Method of igniting prescribed fires in which ignition points are set individually at predetermined spacing with predetermined timing throughout the area to be burned. Also called point source ignition technique.

GROSS WEIGHT: Maximum allowable cargo in an aircraft in a calm, standard atmosphere.

GROSS VEHICLE AXLE WEIGHT RATING (GAWR): The value specified by the manufacturer as the maximum allowable weight placed on an axle of a vehicle when fully equipped, including payload, fluids and occupants.

GROSS VEHICLE WEIGHT (GVW): Actual vehicle weight, including chassis, body, cab, equipment, water, fuel, crew, and all other load.

GROSS VEHICLE WEIGHT RATING (GVWR): The value specified by the manufacturer as the maximum allowable weight of a vehicle fully equipped, including payload, fluids and occupants.

GROUND EFFECT: Reaction of a rotor downdraft against the ground surface, forming a "ground cushion" that increases lifting capability of that section of air.

GROUND FIRE: Fire that consumes the organic material beneath the surface litter ground, such

as a peat fire.

GROUND FOG: Fog which extends vertically to less than 20 feet.

GROUND FUEL: All combustible materials below the surface litter, including duff, tree or shrub roots, punky wood, peat, and sawdust, that normally support a glowing combustion without flame.

GROUND SPEED: Speed with which an aircraft traverses the ground over which it flies.

GROUND SUPPORT UNIT: Functional unit within the Logistics Section responsible for the fueling, maintaining and repairing of vehicles, and the transportation of personnel and supplies.

GROUND TRUTH: Verification at the site of what has been observed and/or measured from aircraft, satellites, other aerial platforms, aerial photographs, or maps.

GROUND VISIBILITY: Horizontal visibility observed at the ground.

GROUP: Groups are established to divide the incident into functional areas of operation. Groups are composed of resources assembled to perform a special function not necessarily within a single geographic division. Groups, when activated, are located between branches and resources in the operations section. (see also DIVISION)

GUARD UNIT: Geographic subdivision of a fire-protected area, delimiting the initial attack bounds of a single fire guard or fire crew.

GUM THICKENED SULPHATE (GTS): A dry chemical product which is mixed with water to form a fire retardant slurry.

GUST: Rapid fluctuations in wind speed with a variation of 10 knots (11.5 mph) or more between peaks and lulls.

GYPPO: A contractor, generally on felling and primary timber conversion work. NOTE: The term, originally uncomplimentary, is said to have originated with irregular railroad gangs operating at cut rates. (Sometimes hired to do suppression work, especially tree falling.)

- H -

HAINES INDEX: An atmospheric index used to indicate the potential for wildfire growth by measuring the stability and dryness of the air over a fire.

HAND CREW: A number of individuals that have been organized and trained and are supervised

principally for operational assignments on an incident.

HANDLINE: Fireline constructed with hand tools.

HANGUP (Tree Falling): A situation in which a tree is lodged in another, preventing it from falling to the ground.

HARD SUCTION HOSE: Noncollapsible suction hose attached to a pump and used to draft water from a source lower than the pump. Customary hose sizes in wildland fire engines are 2 and 2-1/2 inches in diameter (51 and 64 mm).

HAZARD: A fuel complex defined by kind, arrangement, volume, condition, and location that forms a special threat of ignition and resistance to control.

HAZARD MAP: Map of the area of operations that shows all of the known aerial hazards, including but not limited to power lines, military training areas, hang gliding areas, etc.

HAZARD PAY: A salary differential that compensates employees for exposure to hazards in the course of their duties.

HAZARDOUS AREAS: Those wildland areas where the combination of vegetation, topography, weather, and the threat of fire to life and property create difficult and dangerous problems.

HAZARDOUS MATERIALS: Substances that are identified, classified, and regulated in the Code of Federal Regulations, Title 49 and Hazardous Materials Regulations 175. A hazardous material is a substance or material which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and which has been so designated.

HAZARD REDUCTION: Any treatment of living and dead fuels that reduces the threat of ignition and spread of fire.

HAZE: Suspension of minute dry particles in the lower atmosphere that reduces horizontal visibility.

HAZE METER: Instrument for measuring the dependable range of distance at which a standard smoke column can be detected by the unaided eye under existing haze conditions.

HEAD: Pressure due to elevation of water. Equals 0.433 pounds per square inch (PSI) per foot of elevation. Back pressure. (Approximately 0.5 PSI is required to lift water 1 foot in elevation)

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.

HEADING: The compass direction in which the longitudinal axis of the aircraft points.

HEADLAMP: Flashlight, ordinarily worn by firefighter on the front of the helmet.

HEAT CONTENT: The net amount of heat that would be given off if fuel burns when it is absolutely dry, noted as Btu per pound of fuel.

HEAT LOW: An area of low pressure caused by intense heating of the earth's surface. High surface temperature causes air to expand and rise, resulting in low atmospheric pressure and induces a weak inflow of air at the surface. Air which rises in a heat low is very dry so clouds seldom form. Rising air above a heat low produces a warm upper level high and results in a net outflow of air aloft. Heat lows remain practically stationary over areas which produce them.

HEAT OF COMBUSTION: The heat energy resulting from the complete combustion of a fuel, expressed as the quantity of heat per unit weight of fuel. The high heat of combustion is the potential available, and the low heat of combustion is the high heat of combustion minus several losses that occur in an open system (primarily heat of vaporization of moisture in the fuel) .

HEAT PER UNIT AREA: Total amount of heat released per unit area as the flaming front of the fire passes, expressed as Btu/square foot; a measure of the total amount of heat released in flames.

HEAT PROBE: Apparatus used to detect heat.

HEAT RELEASE RATE TO THE ATMOSPHERE: The amount of heat released to the atmosphere during the combustion stage of a fire per unit of time.

HEAT RELEASE RATE: (1) Total amount of heat produced per unit mass of fuel consumed per unit time. (2) Amount of heat released to the atmosphere from the convective-lift fire phase of a fire per unit time.

HEAT TRANSFER: Process by which heat is imparted from one body to another, through conduction, convection, and radiation.

HEAT TROUGH: (Heat Low, Thermal Low, Thermal Trough) A Heat Low which is elongated in shape.

HEAT VALUE: The total heat energy released during combustion, usually published as units of heat energy produced per unit mass of oven-dry fuel consumed.

HEAT YIELD: The heat of combustion corrected for various heat losses, mainly the presence of moisture in the fuel. To a very close approximation, the quantity of heat per pound of fuel burned

that passes through a cross section of the convection column above a fire that is burning in a neutrally stable atmosphere. Also called low heat of combustion.

HEAVY EQUIPMENT TRANSPORT: Any ground vehicle capable of transporting a dozer, tractor, or other heavy piece of equipment. Also called lowboy.

HEAVY FUELS: Fuels of large diameter such as snags, logs, large limbwood, which ignite and are consumed more slowly than flash fuels. Also called course fuels.

HEIGHT: The vertical measurement of vegetation from the top of the crown to ground level.

HELD LINE: All control line that still contains the fire when mopup is completed. Excludes lost line, natural barriers not backfired, and unused secondary lines.

HELIBASE: The main location within the general incident area for parking, fueling, maintenance, and loading of helicopters. It is usually located at or near the incident base.

HELIBASE CREW: A crew of individuals who may be assigned to support helicopter operations.

HELIBASE MANAGER: Person responsible to the air support supervisor for controlling helicopter take-offs and landings at a helibase, logistically managing helicopters and supplies assigned to the helibase, and managing any fire retardant operations assigned to the helibase.

HELIBASE RADIO OPERATOR (HERO): Person responsible for communicating between incident assigned helicopters, helibase operational units, and the takeoff and landing coordinator.

HELIBUCKET: Specially designed bucket carried by a helicopter like a sling load and used for aerial delivery of water or fire retardants.

HELICOPTER: An aircraft that depends principally on the lift generated by one or more rotors for its support in flight. (Syn. ROTORCRAFT)

HELICOPTER COORDINATOR: Person responsible to the air attack supervisor for coordinating tactical or logistical helicopter missions on a fire incident. This individual may be airborne or ground-based. More than one helicopter coordinator may be assigned to an incident, depending on the number and type of missions to be accomplished.

HELICOPTER TENDER: A ground service vehicle capable of supplying fuel and support equipment to helicopters.

HELICOPTER TIMEKEEPER: Person responsible to the helibase radio operator for keeping time of use of all helicopters assigned to the helibase.

HELIPOND: Small body of water suitable for hover filling a helibucket.

HELIPORT: A permanent facility for the operation of helicopters which has been built to FAA standards and which is marked on aeronautical charts. Natural resource agencies refer to agency heliports as permanent helibases.

HELIPUMPER: Lightweight portable pump developed for transport by helicopter.

HELISPOT: A natural or improved takeoff and landing area intended for temporary or occasional helicopter use.

HELISPOT MANAGER: Person supervised by the helibase manager and who is responsible for controlling helicopter take-offs and landings at a helispot, logistically managing helicopters and supplies at the helispot, and managing any fire retardant operations assigned to the helispot.

HELITACK: The utilization of helicopters to transport crews, equipment, and fire retardants or suppressants to the fireline during the initial stages of a fire. The term also refers to the crew that performs helicopter management and attack activities.

HELITACK CREW: A crew of firefighters specially trained and certified in the tactical and logistical use of helicopters for fire suppression.

HELITACK FOREMAN: A supervisory firefighter trained in the tactical use of helicopters for fire suppression.

HELITANK: Specially designed tank, generally of fabric or metal, fitted closely to the bottom of a helicopter and used for transporting and dropping suppressants or fire retardants.

HELITANKER: A helicopter equipped with a fixed tank or a suspended bucket-type container that is used for aerial delivery of water or retardants.

HELITORCH: An aerial ignition device hung from or mounted on a helicopter to disperse ignited lumps of gelled gasoline. Used for backfires, burnouts, or prescribed burns. (see also AERIAL IGNITION DEVICE, DELAYED AERIAL IGNITION DEVICES, PING-PONG BALL SYSTEM, PLASTIC SPHERE DISPENSER)

HERB: A plant that does not develop woody, persistent tissue but is relatively soft or succulent and sprouts from the base (perennials) or develops from seed (annuals) each year. Includes grasses, forbs and ferns.

HIDDEN FIRE SCAR: Fire scar in a tree resulting from fire injury to the cambium without destruction of the overlying bark and therefore not readily discernible.

HIGBEE CUT: Removal of the first (i.e., outside) thread of a female or male coupling to prevent crossing or mutilation of threads. Dimpled rocker on female coupling indicates beginning of Higbee Cut.

HIGH EXPANSION: Foam with an expansion between 201:1 and 1000:1.

HIGH PRESSURE FOG: Small capacity spray jet produced at very high pressures (greater than 250 psi, the normal maximum pressure for standard ground tankers) and discharged through a small hose with a gun-type nozzle.

HOLDING FORCES: Resources assigned to do all required fire suppression work following fireline construction but generally not including extensive mopup.

HOLDING ORBIT: A predetermined maneuver which keeps an aircraft within a specified airspace while awaiting further orders.

HOLDOVER FIRE: A fire that remains dormant for a considerable time. Also called sleeper fire.

HOSE CLAMP: Crimping device for stopping the flow of water in a hose.

HOSE LAY: 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.

HOSE RACK: Item for storing drying fire hose.

HOSE REEL: A rotating drum used for winding booster hose (normally) for storing and dispensing.

HOSE WASHER: Device for cleaning the exterior of fire hose.

HOSELINE TEE: A fitting that may be installed between lengths of hose to provide an independently controlled outlet for a branch line.

HOT SPOT: A particularly active part of a fire.

HOT-SPOTTING: 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.

HOTSHOT CREW: Intensively trained fire crew used primarily in hand line construction (Type-1).

HOVER: A stationary in-flight condition for helicopters when no directional flight is achieved.

HOVER CEILING: Highest altitude above sea level at which a helicopter can hover at maximum computed gross weight. It is generally specified whether the quoted hover ceiling refers to hovering in ground effect (HIGE) or hovering out of ground effect (HOGE).

HOVERFILL: The process by which a helicopter fills a helibucket while hovering above the water source.

HOVERFILL TANK: Large, portable tank from which helitankers can hoverfill.

HOVER HOOK-UP: Attaching of a cargo lead line to a hovering helicopter.

HOVERING IN GROUND EFFECT (HIGE): The situation in which a helicopter is hovering sufficiently close to the ground to achieve added lift due to the effects of "ground cushion." The HIGE ceiling, for a given gross weight, thus is greater than the HOGE (Hovering Out of Ground Effect) ceiling.

HUMAN-CAUSED FIRE: Any fire caused directly or indirectly by person(s).

HUMAN-CAUSED RISK: Part of the National Fire Danger Rating System (NFDRS). A model for predicting the average number of reportable human caused fires from a given ignition component value.

HUMAN-CAUSED RISK SCALING FACTOR: Part of the National Fire Danger Rating System (NFDRS). Number relating human-caused fire incidence to the ignition component in a fire danger rating area. It is based on three to five years of fire occurrence and fire weather data that adjusts the prediction of the basic human-caused fire occurrence model to fit local experience.

HUMIDITY: General term referring to the moisture content of the atmosphere.

HUMUS: Layer of decomposed organic matter on the forest floor beneath the fermentation layer and directly above the soil. It is that part of the duff in which decomposition has rendered vegetation unrecognizable and mixing of soil and organic matter is underway. (see also DUFF, LITTER)

HYDROPHOBICITY: Resistance to wetting exhibited by some soils, also called water repellency. The phenomenon may occur naturally or may be fire-induced. It may be determined by water drop penetration time, equilibrium liquid-contact angles, solid-air surface tension indices, or the characterization of dynamic wetting angles during infiltration.

HYGROTHERMOGRAPH: Recording instrument combining, on one record, the variation of dry-bulb temperature and relative humidity as a function of time.

- I -

IDENTIFICATION RUN: Dry run over the target area by the leadplane to indicate an airtanker's flight path and target, while the air tanker pilot is observing.

IGNITION COMPONENT: Part of the National Fire Danger Rating System (NFDRS). A rating of the probability that a firebrand will cause an actionable fire.

IGNITION ENERGY: Quantity of heat or electrical energy that must be absorbed by a substance to ignite and burn.

IGNITION METHOD: The means by which a fire is ignited, such as hand-held drip torch, helitorch, and backpack propane tanks.

IGNITION PATTERN: Manner in which a prescribed fire is ignited. The distance between ignition lines or points and the sequence of igniting them is determined by weather, fuel, topography, firing technique, and other factors which influence fire behavior and fire effects.

IGNITION PROBABILITY: Chance that a firebrand will cause an ignition when it lands on receptive fuels. (Syn. IGNITION INDEX)

IGNITION TIME: Time between application of an ignition source and self-sustained combustion of a fuel.

IMPAIR WILDERNESS SUITABILITY: Refers to activities that are considered to impair an area's suitability for preservation as wilderness that do not satisfy the nonimpairment criteria.

IMPELLER: Rotating part of a centrifugal pump which imparts energy to the liquid to be moved. For shearing purposes, the impeller is on a rotating shaft within the body of liquid.

IMPULSE: A term used in weather primarily to describe a weak disturbance that does not necessarily have an associated storm center or surface low. The disturbance usually does not create severe weather and is frequently associated with a marine air push.

IN-STAND WIND: Wind speed within a stand at about eye level.

INCENDIARY FIRE: A wildfire willfully ignited by anyone to burn, or spread to, vegetation or property without consent of the owner or his/her agent. (Syn. ARSON FIRE)

INCIDENT: An occurrence either human-caused or natural phenomenon, that requires action or support by emergency service personnel to prevent or minimize loss of life or damage to property and/or natural resources.

INCIDENT ACTION PLAN (IAP): Contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The plan may be oral or written. When written, the plan may have a number of attachments, including: incident objectives, organization assignment list, division assignment, incident radio communication plan, medical plan, traffic plan, safety plan, and incident map. Formerly called shift plan.

INCIDENT BASE: Location at the incident where the primary logistics functions are coordinated and administered. (Incident name or other designator will be added to the term Base.) The incident command post may be collocated with the base. There is only one Base per incident.

INCIDENT COMMAND POST (ICP): Location at which primary command functions are executed. The ICP may be collocated with the incident base or other incident facilities.

INCIDENT COMMAND SYSTEM (ICS): A standardized on-scene emergency management concept specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries.

INCIDENT COMMANDER: Individual responsible for the management of all incident operations at the incident site.

INCIDENT COMMUNICATIONS CENTER: The location of the communications unit and the message center.

INCIDENT COMMUNICATIONS MANAGER: Person responsible to the communications unit leader for providing dispatch services at the incident and for receiving and transmitting radio and telephone messages to and among incident personnel.

INCIDENT MANAGEMENT TEAM: The incident commander and appropriate general and command staff personnel assigned to an incident.

INCIDENT METEOROLOGIST (IMET): A specially trained meteorologist who provides site specific weather forecasts and information to an incident. Is responsible to the fire behavior analyst and the planning section chief. The IMET is usually accompanied by an ATMU and MICRO-REMS. (see also AIR TRANSPORTABLE MODULAR UNIT and MICRO-REMOTE ENVIRONMENTAL MONITORING SYSTEM)

INCIDENT OBJECTIVES: Statements of guidance and direction necessary for the selection of appropriate strategy(s), and the tactical direction of resources. Incident objectives are based upon agency administrators direction and constraints. Incident objectives must be achievable and measurable, yet flexible enough to allow for strategic and tactical alternatives.

INCIDENT ORGANIZATION: Resources, together with a complement of overhead personnel, calculated to be sufficient to provide fire efficient incident management.

INCIDENT OVERHEAD: All supervisory positions described in the Incident Command System.

INCIDENT SUPPORT ORGANIZATION: Includes any off-incident support provided to an incident. Examples would be agency dispatch centers, airports, mobilization centers, etc.

INCIDENT WEATHER FORECAST: A special fire weather forecast for a specific incident prepared by a meteorologist on site at or near the incident area. (see also GENERAL FIRE WEATHER FORECAST, SPOT WEATHER FORECAST)

INCREASER: Increasing coupling used on hose, pump, or nozzles to permit connection of a larger size of hose.

INCREMENT: Any resource or grouping of resources on which individual status is maintained.

INCREMENTAL DROP: Air tanker drop in which tank doors are opened in sequence so that fire retardant cascades somewhat continuously.

INDEPENDENT ACTION: Fire suppression activities by other than regular fire suppression organizations or a fire cooperater.

INDEPENDENT CROWN FIRE: A fire that advances in the tree crowns alone, not requiring any energy from the surface fire to sustain combustion or movement. Also called running crown fire.

INDICATED AIRSPEED (IAS): The speed of an aircraft as shown on its pitot static airspeed indicator. Calibrated to reflect standard atmosphere adiabatic compressible flow at sea level, uncorrected for airspeed system errors.

INDIRECT ATTACK: A method of suppression in which the control line is located some considerable distance away from the fire's active edge. Generally done in the case of a fast-spreading or high-intensity fire and to utilize natural or constructed firebreaks or fuelbreaks and favorable breaks in the topography. The intervening fuel is usually backfired; but occasionally the main fire is allowed to burn to the line, depending on conditions.

INDIRECTLY VISIBLE AREA: Ground, or the vegetation growing thereon, that is not directly visible to a fixed point lookout but lies at not more than a specified depth (commonly 300 feet, 91 meters) below the lookout's line of sight.

INDUCTOR: A control mechanism that allows a regulated quantity of foam concentrate to be introduced into the main hose line.

INDUSTRY CREW: Fire crew composed of mill, forestry, or construction workers.

INFORMATION OFFICER: A member of the command staff responsible for interfacing with the public and media or with other agencies requiring information directly from the incident. There is only one information officer per incident. The information officer may have assistants.

INFRARED (IR): A heat detection system used for fire detection, mapping, and hotspot identification. (see also THERMAL IMAGERY)

INFRARED GROUNDLINK (IR): A capability through the use of a special mobile ground station to receive air-to-ground IR imagery at an incident.

INHIBITION: Process of extinguishing fire by the use of an agent that interrupts the chemical reactions in the combustion process.

INHIBITOR: Any agent which retards a chemical reaction.

INITIAL ATTACK: The actions taken by the first resources to arrive at a wildfire to protect lives and property, and prevent further extension of the fire.

INITIAL ATTACK CREW: Specially trained and equipped fire crew for initial attack on a fire.

INITIAL ATTACK FIRE (IAF): Fire that is generally contained by the attack units first dispatched, without a significant augmentation of reinforcements, within two hours after initial attack, and full control is expected within the first burning period.

INITIAL ATTACK INCIDENT COMMANDER (IAIC): The incident commander at the time the first attack forces commence suppression work on a fire.

INITIAL RESPONSE: Resources initially committed to an incident.

INMATE CREW: Any fire crew composed of prison inmates.

INSIDE DIAMETER (ID): The internal diameter of a tube, conductor, or coupling, as distinguished from its OD (Outside Diameter). Fire hose sizes are classified by a nominal internal diameter.

INSTRUMENT FLIGHT RULES (IFR) CONDITIONS: Weather conditions below the minimum for flight under Visual Flight Rules and therefore requiring the observance of instruments inside the aircraft for controlling flight; generally considered to be less than 1000'AGL and 3 miles distant.

INSTRUMENT LANDING SYSTEM (ILS): System for airplane landing in which the pilot is guided by radio beams.

INSTRUMENT SHELTER: Naturally or artificially ventilated structure, constructed to specifications and used to shield weather measuring instruments from direct sunshine and precipitation.

INTERMITTENT SMOKE: Smoke which becomes visible only at intervals.

INTERNAL LOAD: Load carried inside the fuselage structure of an aircraft.

INTERNAL PAYLOAD: Allowable aircraft cabin load, in pounds, with full fuel and pilot in calm air at standard atmosphere.

INTOLERABLE LOSS: Level of damage or loss greater than that which may be sustained by a given resource, cultural or natural, and still achieve management goals.

INVENTORIED RESOURCES: Assigned resources which have checked in at the incident.

INVERSION: An increase of temperature with height in the atmosphere. Vertical motion in the atmosphere is inhibited allowing for pollution buildup. A "normal" atmosphere has temperature decreasing with height. (see also ATMOSPHERIC STABILITY, STABLE LAYER of AIR, and ATMOSPHERIC INVERSION)

IRON PIPE THREAD (IPT): A tapered thread standard that is used for connecting various sizes of rigid pipe. This standard may be referred to as tapered iron pipe thread (TIPT), National pipe thread (NPT), iron pipe thread (IPT), or iron pipe standard thread (IPS). With tapered thread, the threads and pipe sealant perform the seal at the connection. This is opposed to straight thread connectors which use a gasket to form the seal.

ISLAND: An unburned area within a fire perimeter.

ISOBAR: A charted line connecting points of equal atmospheric pressure.

ISOTHERM: A charted line connecting points of equal temperature.

ISOTHERMAL LAYER: Layer through which temperature remains constant with elevation.

I-ZONE: The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. (Syn. URBAN INTERFACE, WILDLAND/URBAN INTERFACE)

- J -

JETTISON: Disposing of cargo, fuel, water or retardent overboard to lighten an aircraft or to improve its stability.

JUMP SPOT: Selected landing area for smokejumpers.

JUMP SUIT: Approved protection suit worn for smokejumping.

JURISDICTION: The range or sphere of authority. Public agencies have jurisdiction at an incident related to their legal responsibilities and authority for incident mitigation. Jurisdictional authority at an incident can be political/geographical (e.g., city, county, state or federal boundary lines), or functional (e.g., police department, health department, etc.). (see also MULTIJURISDICTION INCIDENT)

JURISDICTIONAL AGENCY: The agency having land and resource management responsibility for a specific geographical or functional area as provided by federal, state or local law.

- K -

KEETCH-BYRAM DROUGHT INDEX (KBDI): Commonly-used drought index adapted for fire management applications, with a numerical range from 0 (no moisture deficiency) to 800 (maximum drought). (see also DROUGHT INDEX)

KINDLING POINT: Lowest temperature at which sustained combustion can be initiated for a specified substance. Also called ignition temperature.

KNOCK DOWN: To reduce the flame or heat on the more vigorously burning parts of a fire edge.

KNOT: Nautical miles per hour, equal to 1.15 mph.

- L -

LADDER FUELS: Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning.

LAND OCCUPANCY FIRE: Fire started as a result of land occupancy for agricultural purposes, industrial establishment, construction, maintenance and use of rights-of-way, and residences, except equipment use and smoking.

LAPSE RATE: Decrease of an atmospheric variable (temperature unless specified otherwise) with height.

LARGE AIRCRAFT: Aircraft in which maximum certified gross weight at take-off exceeds 12,500 pounds.

LARGE FIRE: (1) For statistical purposes, a fire burning more than a specified area of land e.g., 300 acres. (2) A fire burning with a size and intensity such that its behavior is determined by interaction between its own convection column and weather conditions above the surface.

LEACH: Removal of soluble constituents from ashes or soil by percolation of water.

LEAD LINE: Line or set of lines made of rope, webbing, or cable and used in helicopter external load operations; usually placed between a swivel or the cargo hook and the load.

LEAD PLANE: Aircraft with pilot used to make trial runs over the target area to check wind, smoke conditions, topography and to lead air tankers to targets and supervise their drops.

LEADER: The ICS title for an individual responsible for a task force, strike team, or functional unit.

LEAPFROG METHOD: A system of organizing workers in fire suppression in which each crew member is assigned a specific task such as clearing or digging fireline on a specific section of control line, and when that task is completed, passes other workers in moving to a new assignment.

LEGITIMATE SMOKE: Smoke from any authorized use of fire (e.g., locomotive, industrial operations, permitted debris burning).

LEVEL OF SERVICE: Amount of fire prevention and fire suppression supplied; may be expressed several ways (e.g., percent of people or buildings protected, area protected, dollar value of property protected, firefighters per capita, water flow capability).

LIAISON OFFICER (LOFR): A member of the command staff responsible for coordinating with agency representatives from assisting and cooperating agencies.

LIFE-SAFETY: Refers to the joint consideration of both the life and physical well-being of individuals.

LIFTING PROCESSES: Any of the processes that lead to upward vertical motion in the atmosphere. These processes may include low level convergence, heating or thermal convection, orographic lifting over the mountains, and frontal lifting.

LIGHT BURN: Degree of burn which leaves the soil covered with partially charred organic material; heavy fuels are not deeply charred.

LIGHT (FINE) FUELS: Fast-drying fuels, generally with a comparatively high surface area-to-volume ratio, which are less than 1/4-inch in diameter and have a timelag of 1 hour or less. These fuels readily ignite and are rapidly consumed by fire when dry.

LIGHT WIND: Wind speed less than 7 mph (6 knots) measured at 20 feet above ground. At eye level, light winds are less than 3 mph (3 knots).

LIGHTNING ACTIVITY LEVEL (LAL): Part of the National Fire Danger Rating System (NFDRS). A number, on a scale of 1 to 6, which reflects frequency and character of cloud-to-ground lightning (forecasted or observed). The scale for 1 to 5 is exponential, based on powers of 2 (i.e., LAL 3 indicates twice the lightning of LAL 2). LAL 6 is a special category for dry lightning and is closely equivalent to LAL 3 in strike frequency.

LIGHTNING FIRE: Wildfire caused directly or indirectly by lightning.

LIGHTNING FIRE OCCURRENCE INDEX: Part of the National Fire Danger Rating System (NFDRS). Numerical rating of the potential occurrence of lightning-caused fires.

LIGHTNING RISK (LR): Part of the National Fire Danger Rating System (NFDRS). A number related to the expected number of cloud-to-ground lightning strokes to which a protection unit is expected to be exposed during the rating period; the LR value used in the occurrence index includes an adjustment for lightning activity experienced during the previous day to account for possible holdover fires.

LIGHTNING RISK SCALING FACTOR: Part of the National Fire Danger Rating System (NFDRS). Factor derived from local thunderstorm and lightning-caused fire records that adjusts predictions of the basic lightning fire occurrence model to local experience, accounting for factors not addressed directly by the model (e.g., susceptibility of local fuels to ignition by lightning, fuel continuity, topography, regional characteristics of thunderstorms).

LIGHTNING STROKE COUNTER: Electronic sensor used to record the number of lightning strokes within a predetermined range over a specified period of time.

LIMBING: Removing branches from a felled or standing tree, or from brush.

LIMITED CONTAINMENT: Halting of fire spread at the head, or that portion of the flanks of a prescribed fire that is threatening to exceed prescription criteria, and ensuring that this spread rate will not be encountered again; does not indicate mopup.

LINE CUTTER: Fire crew member in the progressive method of line construction who cuts and clears away brush, small saplings, vines, and other obstructions in the path of the fireline; usually equipped with ax or brush hook.

LINE FIRING: Setting fire to only the border fuel immediately adjacent to the control line.

LINE HOLDING: Ensuring that the established fireline has completely stopped fire progress.

LINE IGNITION: Setting a line of fire (e.g., backing fire) as opposed to individual spots.

LINE OFFICER: Agency Administrator.

LINE SCOUT: A firefighter who determines the location of a fire line.

LINED FIRE HOSE: Fire hose with a smooth inner coating of rubber or plastic to reduce friction loss.

LIQUID CONCENTRATE (LC): Liquid phosphate fertilizers used as fire retardants, usually diluted three to five times prior to application.

LITTER: The top layer of forest floor, composed of loose debris of dead sticks, branches, twigs, and recently fallen leaves or needles; little altered in structure by decomposition. (see also DUFF, HUMUS)

LITTLE CHANGE: Insignificant change in wind speed, and temperature and relative humidity changes less than five degrees and five percent, respectively. When used as a general statement in a long-range forecast, all three criteria apply.

LIVE LINE: Hose line filled with water under pressure and ready to use. (see also CHARGED LINE)

LIVE REEL: Hose line or reel on a fire engine, carried preconnected to the pump, ready for use without making connections to pump or attaching nozzle.

LIVE BURNING: Burning of green slash progressively as it is cut.

LIVE FUEL MOISTURE CONTENT: Ratio of the amount of water to the amount of dry plant material in living plants.

LIVE FUELS: Living plants, such as trees, grasses, and shrubs, in which the seasonal moisture content cycle is controlled largely by internal physiological mechanisms, rather than by external weather influences.

LIVE HERBACEOUS MOISTURE CONTENT: Ratio of the amount of water to the amount of dry plant material in herbaceous plants, i.e., grasses and forbs.

LIVE RUN: Indicates that the air tanker has the target in sight and will make a retardant drop on this run over the target.

LIVE WOODY MOISTURE CONTENT: Ratio of the amount of water to the amount of dry plant material in shrubs.

LIVING FUELS: Naturally occurring fuels in which moisture content is physiologically controlled within the living plant.

LOAD AND HOLD: An order given to the airtanker pilot to pick up another load of retardant or water and hold at the reload base. The tanker is still committed to the fire.

LOAD AND RETURN: Order given to the air tanker pilot to pick up another load of fire retardant or water and return to the fire.

LOAD CALCULATION FORM: An agency form used to calculate helicopter allowable payload.

LOADING PAD: Concrete pad at a retardant base on which aircraft stand when being loaded.

LOADMASTER: Person responsible to the deck coordinator for the safe loading and unloading of personnel and cargo at a helibase.

LOCAL AGENCY: Any agency having jurisdictional responsibility for all or part of an incident.

LOCAL RESPONSIBILITY AREA: Lands on which neither the state nor the federal government has any legal responsibility for providing fire protection.

LOCAL WINDS: Winds which are generated over a comparatively small area by local terrain and weather. They differ from those which would be appropriate to the general pressure pattern. (see also GENERAL WINDS and SLOPE WINDS)

LOGGING DEBRIS: Unwanted tree parts (crowns, logs, uprooted stumps) remaining after harvest.

LOGISTICS SECTION: The Section responsible for providing facilities, services and materials for the incident.

LONGLINE: A line or set of lines, usually in 50' increments, used in external load operations that allow the helicopter to place loads in areas in which the helicopter could not safely land.

LONG-RANGE FORECAST: Fire weather forecast for a period greater than five days in advance.

LONG-RANGE SPOTTING: Large glowing firebrands are carried high into the convection column and then fall out downwind beyond the main fire starting new fires. Such spotting can easily occur 1/4 mile or more from the firebrand's source.

LONG-TERM FIRE DANGER: The results of those factors in fire danger affecting long-term planning; involves consideration of past records and conditions and probable future trends.

LONG-TERM FIRE RETARDANT: Chemical that inhibits combustion primarily through chemical reactions between products of combustion and the applied chemicals, even after the water component has evaporated. Other chemical effects also may be achieved, such as film-forming and intumescence.

LOOKOUT: (1) A person designated to detect and report fires from a vantage point. (2) A location from which fires can be detected and reported. (3) A fire crew member assigned to observe the fire and warn the crew when there is danger of becoming trapped.

LOOKOUT DISPATCHER: Person combining the functions of lookout and dispatcher.

LOOKOUT FIREFIGHTER: Person combining the functions of lookout and firefighter.

LOOKOUT PATROL: Person who travels along ridges or other vantage points to discover, detect, report, and suppress fires.

LOOKOUT POINT: Vantage point selected for fire detection or observation.

LOOKOUT(S), COMMUNICATION(S), ESCAPE ROUTE(S), AND SAFETY ZONE(S) (LCES): Elements of a safety system used by fire fighters to routinely assess their current situation with respect to wildland firefighting hazards.

LOOKOUT TOWER: Structure that elevates a person above nearby obstructions to sight for fires; generally capped by some sort of house or cupola.

LOPPING: After felling, cutting branches, tops, and unwanted boles into lengths such that resultant logging debris will lie close to the ground.

LOPPING AND SCATTERING: Lopping logging debris and spreading it more or less evenly over the ground.

LORAN: An electronic navigation and position-determining system. The (GPS) Global Positioning System is replacing LORAN as the system of choice for aircraft position determination.

LOST LINE: Any part of a fireline rendered useless by a breakover of the fire.

LOW EXPANSION: Foam with an expansion between 1:1 and 20:1.

LOW: An area of relatively low atmospheric pressure in which winds tend to move in a counterclockwise direction, spiraling in toward the low's center.

- M -

MACROCLIMATE: General large-scale climate of a large area or country as distinguished from smaller scale mesoclimate and microclimate.

MAIN RIDGE: Prominent ridgeline separating river or creek drainages. Usually has numerous smaller ridges (spur) extending outward from both sides.

MAJOR REPAIR (Aviation): A repair (1) that, if improperly done, might appreciably affect weight, balance, structural strength, or other qualities affecting airworthiness or (2) that is not done according to accepted practices or cannot be done by elementary operations.

MAJOR STATIONARY SOURCES: Term used to determine the applicability of Prevention of Significant Deterioration ("PSD") and new source regulations. In a non-attainment area, any stationary pollutant source that has a potential to emit more than 100 tons per year is considered a major stationary source. In PSD areas, the cutoff level may be either 100 or 250 tons, depending upon the type of source.

MALE COUPLING: An externally threaded hose nipple which fits in the thread of a female (internally threaded) swivel coupling of the same pitch and diameter. Nozzles attach to this type of coupling.

MANAGEMENT BY OBJECTIVES: In ICS, this is a top-down management activity which involves a three-step process to achieve the incident goal. The steps are: establishing the incident objectives, selection of appropriate strategy(s) to achieve the objectives; and the tactical direction associated with the selected strategy. Tactical direction includes: selection of tactics, selection of resources, resource assignments and performance monitoring.

MANAGERS: Individuals within ICS organizational units that are assigned specific managerial responsibilities, e.g., staging area manager or camp manager.

MANICURED LINE: Fireline built exactly to standards.

MANUALLY REGULATED: A proportioning method or device that requires a manual adjustment to maintain a desired mix ratio over a changing range of water flows and pressures.

MARINE AIR: Air which has a high moisture content and the temperature characteristics of an ocean surface due to extensive exposure to that surface. An intrusion of marine air will moderate fire conditions. Absence of marine air in coastal areas may lead to more severe fire danger.

MARINE CLIMATE: Regional climate under the predominant influence of the sea, that is, a climate characterized by marine air; the opposite of a continental climate.

MARITIME AIR: Air which has assumed high moisture content and the temperature characteristics of a water surface due to extensive exposure to that surface.

MASS FIRE: A fire resulting from many simultaneous ignitions that generates a high level of energy output.

MASS TRANSPORT: Heat carried ahead of the fire in the form of firebrands.

MASTER FIRE CHRONOLOGY: Chronological listing of the dates of fires documented in a designated area, the dates being corrected by crossdating. Size of the area must be specified. Also called composite fire interval.

MATTOCK: Hand tool with a narrow hoeing surface at one end of the blade and a pick or cutting blade at the other end; used for digging and grubbing.

MAXIMUM CERTIFIED GROSS WEIGHT: Absolute maximum allowable gross weight for an aircraft as established by the manufacturer and approved by the FAA.

MAXIMUM COMPUTED GROSS WEIGHT: Computed gross weight for an aircraft, obtained from the appropriate performance chart, which is the maximum gross weight appropriate to the applicable circumstance of configuration and/or environmental conditions.

MAY DAY: International distress signal/call. When repeated three times it indicates imminent and grave danger and that immediate assistance is required.

McLEOD: A combination hoe or cutting tool and rake, with or without removable blades.

MEAN FIRE INTERVAL: Arithmetic average of all fire intervals determined, in years, in a designated area during a specified time period; size of the area and the time period must be specified.

MEAN SEA LEVEL (MSL): Average height of the surface of the sea for all stages of the tide over a 19-year period. NOTE: when the abbreviation MSL is used in conjunction with a number of feet, it implies altitude above sea level (e.g., 1000 feet MSL).

MEDICAL UNIT: Functional unit within the logistics section responsible for the development of the Medical Emergency Plan, and for providing emergency medical treatment of incident personnel.

MEDIUM EXPANSION: Foam with an expansion between 21:1 and 200:1.

MEDIUM-RANGE FORECAST: A forecast for a period extending from about two days to five days or a week in advance; there are no absolute limits to the period embraced by this definition.

MEDIVAC: Mobile medical treatment and transportation.

MESSAGE CENTER: The message center is part of the incident communications center and is collocated or placed adjacent to it. It receives, records, and routes information about resources reporting to the incident, resource status, and administrative and tactical traffic.

MICRON: One millionth of a meter, a micrometer.

MICRO-REMOTE ENVIRONMENTAL MONITORING SYSTEM (MICRO-REMS): Mobile weather monitoring station. Each unit consists of a shipping container, solar panel, battery, temperature/relative humidity sensor, wind mast, wind direction/speed sensor, data logger and radio. A MICRO-REMS usually accompanies an incident meteorologist and ATMU to an incident. (see also AIR TRANSPORTABLE MODULAR UNIT and INCIDENT METEOROLOGIST)

MID-FLAME WINDSPEED: The speed of the wind measured at the midpoint of the flames, considered to be most representative of the speed of the wind that is affecting fire behavior.

MILITARY OPERATIONS AREA (MOA): Military Operations Area found on aeronautical charts.

MILITARY TIME: The 24-hour clock system where midnight is 2400, one minute after midnight is 0001 and progresses to 2400 daily.

MILLIBAR: A unit of pressure equal to a force of 1,000 dynes per square centimeter. (A dyne is the force that would give a free mass of one gram an acceleration of one centimeter per second per second.)

MINIMUM IMPACT SUPPRESSION TECHNIQUES (MIST): The application of strategy and tactics that effectively meet suppression and resource objectives with the least environmental, cultural and social impacts.

MINERAL ASH: The residue of mineral matter left after complete combustion of wood (wood ash) or other organic material; consists largely of oxides, carbonates, and phosphates of Ca, K and Mg, together with other compounds, [formerly used as a source of potash (K₂CO₃)].

MINERAL SOIL: Soil layers below the predominantly organic horizons; soil with little combustible material.

MISCELLANEOUS FIRE: Fire of known cause that cannot be properly classified into any of the eight standard causes of fires.

MIX RATIO: The ratio of liquid foam concentrate to water, usually expressed as a percent.

MIXING: A random exchange of air parcels on any scale from the molecular to the largest eddy.

MIXING CHAMBER: A tube, constructed with deflectors or baffles, that mixes foam solution and air to produce tiny, uniform bubbles in a short distance (1 to 2 ft).

MIXING HEIGHT: Measured from the surface upward, the height to which relatively vigorous mixing occurs due to convection. Also called mixing depth.

MIXING LAYER: That portion of the atmosphere from the surface up to the mixing height. This is the layer of air, usually a sub-inversion layer, within which pollutants are mixed by turbulence and diffusion. Also called mixed layer. (see also TRANSPORT WIND SPEED, VENTILATION FACTOR)

MIXMASTER: The person in charge of fire retardant mixing operations with responsibility for quantity and quality of the slurry and for the loading of aircraft in land based air tanker operations.

MOBILE RADIO: A two way radio unit on mobile apparatus (instead of base stations), usually semi-permanently attached to the apparatus.

MOBILE WEATHER UNIT FORECAST: A special fire weather forecast for a specific fire prepared by a meteorologist on site at or near the fire area.

MOBILIZATION: The process and procedures used by all organizations, federal, state and local, for activating, assembling, and transporting all resources that have been requested to respond to or support an incident.

MOBILIZATION CENTER: An off-incident location at which emergency service personnel and equipment are temporarily located pending assignment, release, or reassignment.

MOBILIZATION GUIDE: A written description of procedures used by federal, state, and local

organizations for activating, assembling, and transporting resources that have been requested to respond to or support an incident.

MODEL: A quantitative and mathematical representation or simulation which attempts to describe the characteristics or relationships of physical events. Also called mathematical model.

MODEL ARSON LAW: Model legislation, recommended by the Fire Marshals' Association of North America and adopted in most states, dealing with the subject of arson.

MODEL FIREWORKS LAW: Model legislation recommended by the Fire Marshals' Association of North America and adopted by many states, regulating display of fireworks.

MODERATE BURN: Degree of burn in which all organic material is burned away from the surface of the soil, which is not discolored by heat; any remaining fuel is deeply charred. Organic matter remains in the soil immediately below the surface.

MODIFIED SUPPRESSION: Suppression action dictated by one or more management constraints that affect strategy and/or tactics.

MODULAR AIRBORNE FIREFIGHTING SYSTEM (MAFFS): A manufactured unit consisting of five interconnecting tanks, a control pallet, and a nozzle pallet, with a capacity of 3,000 gallons, designed to be rapidly mounted inside an unmodified C-130 (Hercules) cargo aircraft for use in cascading retardant chemicals on wildfires.

MOIST ADIABATIC LAPSE RATE: Rate of decrease of temperature with increasing height of an air parcel lifted at saturation via adiabatic process through an atmosphere in hydrostatic equilibrium. Rate varies according to the amount of water vapor in the parcel and is usually between 2^o and 5^o F per 1000 feet (3.6^o AND 9.2^o C per 1000 METERS).

MOISTURE OF EXTINCTION: The fuel moisture content, weighed over all the fuel classes, at which the fire will not spread. Also called extinction moisture content (EMC).

MONITOR: A turret-type nozzle usually mounted on an engine.

MONITORING: Periodic or continuous surveillance or testing to determine the level of compliance with statutory requirements and/or pollutant levels in various media or in humans, animals, and other living things.

MONSOON CLIMATE: Climate characterized by (a) a long winter-spring dry season which includes a "cold season" followed by a short "hot season" immediately preceding the rains, (b) a summer and early autumn rainy season which is usually very wet (but highly variable from year to year), and (c) a secondary maximum of temperature immediately after the rainy season.

MOPUP: Extinguishing or removing burning material near control lines, felling snags, and

trenching logs to prevent rolling after an area has burned, to make a fire safe, or to reduce residual smoke.

MOPUP CREW: A portion or all of a regular fire crew assigned to mopup work after the fire or a portion of the fire has been controlled.

MOPUP TIME: Elapsed time from control of a fire until organized mopup is complete.

MOSAIC: The intermingling of plant communities and their successional stages in such a manner as to give the impression of an interwoven design.

MOST EFFICIENT LEVEL (MEL): The fire management program budget level that results in the minimum cost plus net value change.

MOVE-UP: System of redistributing remaining personnel and equipment following dispatch of other forces among a network of fire stations to provide the best possible response within the fire department's direct protection area in the event of additional calls for emergency assistance.

MOVEUP METHOD: Progressive method of fireline construction on a wildfire without changing relative positions in the line. Work is begun with a suitable space between workers; whenever one worker overtakes another, all of those ahead move one space forward and resume work on the uncompleted part of the line. The last worker does not move ahead until work is completed in his/her space. Forward progress of the crew is coordinated by a crew boss. (Syn. BUMPUP METHOD)

MULTI-AGENCY COORDINATION (MAC): A generalized term which describes the functions and activities of representatives of involved agencies and/or jurisdictions who come together to make decisions regarding the prioritizing of incidents, and the sharing and use of critical resources. The MAC organization is not a part of the on-scene ICS and is not involved in developing incident strategy or tactics.

MULTI-AGENCY INCIDENT: An incident where one or more agencies assist a jurisdictional agency or agencies. May be single or unified command. (see also JURISDICTION)

MULTICOM: A VHF/AM aircraft radio frequency (122.9 MHz) assigned by the FAA for use in air-to-air communications.

MULTIJURISDICTION INCIDENT: An incident requiring action from multiple agencies that have a statutory responsibility for incident mitigation. In ICS these incidents will be managed under unified command. (see also JURISDICTION)

MULTIPLE FIRE SITUATION: High fire frequency over a short period of time in an administrative unit, usually overtaxing the normal initial attack capability of the unit.

MUTUAL AID AGREEMENT: Written agreement between agencies and/or jurisdictions in which they agree to assist one another upon request, by furnishing personnel and equipment.

MUTUAL AID: A system wherein two or more fire departments, by prior agreement, operate essentially as a single agency to respond routinely across jurisdictional boundaries to render mutual assistance in combating fire emergencies.

MUTUAL THREAT ZONE: A geographical area between two or more jurisdictions into which those agencies would respond on initial attack. Also called mutual response zone or initial action zone.

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NATIONAL ADVANCED RESOURCES TECHNOLOGY CENTER (NARTC): Multi-agency training facility at Pinal Air Park, Marana, Arizona, which specializes in presentation of national-level fire management training courses.

NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS): A legal limit on the level of atmospheric contamination. The level is established as the concentration limits needed to protect all of the public against adverse effects on public health and welfare, with an adequate safety margin. Primary standards are those related to health effects. Secondary standards are designed to protect the public welfare from effects such as visibility reduction, soiling, material damage and nuisances.

NATIONAL ASSOCIATION OF STATE FORESTERS (NASF): An organization consisting of the State Forester from each state and territory which promotes cooperation in forestry matters between the states and territories, the federal government and private forestry groups. It promotes legislation, programs and activities which will advance the practice of forestry and use of forest products.

NATIONAL FIRE CODES (NFC): The collected technical fire protection standards prepared by various committees of the National Fire Protection Association and published annually in 15 volumes.

NATIONAL FIRE DANGER RATING SYSTEM (NFDRS): A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA): Nonprofit educational and technical association formed in 1896, headquartered in Quincy, Massachusetts, and devoted to the protection of life and property from fire through development of standards of fire protection and public education.

NATIONAL FOREST LANDS: Public lands, generally forest, range, or other wildland, administered by the Forest Service, USDA.

NATIONAL FOREST SYSTEM: Consists of all national forest lands, the national grasslands and land utilization projects administered under title III of the Bankhead-Jones Farm Tenant Act, and other interests as defined in Section 9 of the National Forest Management Act of 1976.

NATIONAL FUEL APPRAISAL SYSTEM: A procedure for estimating fire hazard in wildland fuels and evaluating fuel treatment effectiveness. The system is supported by a software package that includes four independent ASCII FORTRAN computer programs called FUELBED.

NATIONAL INTERAGENCY COORDINATION CENTER (NICC): Coordinates allocation of resources to one or more coordination centers or major fires within the nation. Located in Boise, Idaho.

NATIONAL INTERAGENCY FIRE CENTER (NIFC): A facility located at Boise, Idaho, jointly operated by several federal agencies, dedicated to coordination, logistical support, and improved weather services in support of fire management operations throughout the United States.

NATIONAL INTERAGENCY FIRE MANAGEMENT INTEGRATED DATABASE (NIFMID): An ORACLE database that contains wildland fire reports and weather data. Located at the National Computer Center, Kansas City.

NATIONAL INTERAGENCY INCIDENT MANAGEMENT SYSTEM (NIIMS): An NWCG developed program consisting of five subsystems which collectively provide a total systems approach to all-risk incident management. The subsystems are: The Incident Command System, Training, Qualifications and Certification, Supporting Technologies, and Publications Management.

NATIONAL PARK: A federal reservation administered by the National Park Service of the U.S. Department of the Interior in order to conserve unique scenery, flora and fauna, and any natural and historic objects within its boundaries for public enjoyment in perpetuity.

NATIONAL PIPE STRAIGHT HOSE THREAD (NPSH): Also known as National Pipe Straight Mechanical (NPSM) thread. This is a straight (nontapered) thread standard with the same threads per inch as the appropriate size iron pipe thread. It requires a gasket to seal and is the thread standard used by most U.S. industry.

NATIONAL RESOURCE LANDS (NRL): Public lands administered by the Bureau of Land Management, U.S. Department of the Interior.

NATIONAL STANDARD THREAD (NH): Abbreviated (NH) for national hose. Specifically defined screw thread used on fire hose couplings.

NATIONAL WILDFIRE COORDINATING GROUP (NWCG): A group formed under the direction of the Secretaries of the Interior and Agriculture to improve the coordination and effectiveness of wildland fire activities and provide a forum to discuss, recommend appropriate action, or resolve issues and problems of substantive nature.

NATIONAL WILDLIFE REFUSE SYSTEM: All lands, waters and interests therein administered by the Fish and Wildlife Service for the protection and conservation of fish and wildlife, including those that are threatened with extinction.

NATIVE SPECIES: A species which is a part of the original fauna or flora of the area in question.

NATURAL BARRIER: Any area where lack of flammable material obstructs the spread of wildfires.

NEAR MISS: Any potential accident which, through prevention, education, hazard reduction, or luck, did not occur.

NET VALUE CHANGE (NVC): The sum of the changes in the value of natural resources affected by a fire. The basis for computing NVC is each resource's fire-induced value change (pluses and minuses) as computed and expressed on a per unit basis.

NEUTRAL ATMOSPHERE: Condition in which temperature decrease with increasing altitude is equal to the dry adiabatic lapse rate (i.e., the atmosphere neither aids nor hinders large-scale vertical motion).

NICHE (habitat niche): The peculiar arrangement of food, cover, and water that meets the requirements of a particular species.

NIGHT (Aviation): The time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac, converted to local time.

NITROGEN DIOXIDE (NO₂): The result of nitric oxide combining with oxygen in the atmosphere. A major component of photochemical smog.

NITROGEN OXIDE (NO): Product of combustion from transportation and stationary sources and a major contributor to acid deposition and the formation of ground level ozone in the troposphere.

NOMEX ®: Trade name for a fire resistant synthetic material used in the manufacturing of flight suits and pants and shirts used by firefighters. Aramid is the generic name.

NON-ATTAINMENT AREA: An area identified by an air quality regulatory agency through ambient air monitoring (and designated by the Environmental Protection Agency), that presently exceeds federal ambient air standards.

NON-CONVECTIVE-LIFT FIRE PHASE: Phase of a fire when most emissions are not entrained into a definite convection column

NON-POINT SOURCE: An area identified by an air quality regulatory agency through ambient air monitoring (and designated by the Environmental Protection Agency), that presently exceeds federal ambient air standards.

NONCOMMERCIAL FOREST LAND: Forest land incapable of yielding crops of commercially useful wood because of adverse site conditions, or productive forest land withdrawn from commercial timber use through statute or administrative regulation.

NONPRECISION APPROACH PROCEDURE: Standard aircraft instrument approach procedure in which no electronic glide slope is provided.

NONSTATISTICAL FIRE: Any fire not posing a threat to resources or property of the jurisdictional agency, regardless of whether action was taken by the agency.

NORMAL FIRE SEASON: (1) A season when weather, fire danger, and number and distribution of fires are about average. (2) Period of the year that normally comprises the fire season.

NORMAL FIRE YEAR: The year with the third greatest number of fires in the past ten.

NOTICE TO AIRMEN (NOTAM): Notice identified as either a NOTAM or Airmen Advisory containing information concerning the establishment, condition, or change in any component of, or hazard in, the National Airspace System, the timely knowledge of which is essential to personnel concerned with flight operations.

NOZZLE ASPIRATED FOAM SYSTEM: A foam generating device that mixes air at atmospheric pressure with foam solution in a nozzle chamber.

NOZZLE OPERATOR: A person assigned to operate a fire hose nozzle, usually on a hand line.

NUTRIENT: Elements or compounds that are essential as raw materials for organism growth and development, such as carbon, oxygen, nitrogen, and phosphorus. There are at least 17 essential nutrients.

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OBSERVATION TIME: Time of day required to record meteorological data at a fire danger station.

OBSTRUCTION TO VISION: Condition in which obscuring phenomenon restricts visibility to six statute miles (10 km.) or less.

OCCURRENCE INDEX (OI): A number in the National Fire Danger Rating System related to potential fire incidence within a protection unit.

OCCLUDED FRONT OR OCCLUSION: The front that is formed when and where a cold front overtakes a warm front or a stationary front.

OFFICER: The ICS title for personnel responsible for the Command Staff positions of Safety, Liaison, and Information.

OFF-SITE COLONIZERS: Plants that germinate and establish after a disturbance from seed that was carried from off of the site.

OFF-ROAD VEHICLE (ORV): Any motorized vehicle designed for, or capable of, cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other terrain. (Syn. ALL TERRAIN VEHICLE)

OFFSHORE FLOW: Wind blowing from land to water.

ON-SITE COLONIZERS: Plants that germinate and establish after a disturbance from seed that was present on the site at the time of the disturbance.

ONE LICK METHOD: A progressive system of building a fireline on a wildfire without changing relative positions in the line. Each worker does one to several "licks," or strokes, with a given tool and then moves forward a specified distance to make room for the worker behind.

ONE-HOUR TIMELAG FUELS: Fuels consisting of dead herbaceous plants and roundwood less than about one-fourth inch (6.4 mm) in diameter. Also included is the uppermost layer of needles or leaves on the forest floor.

ONE-HOUR TIMELAG FUEL MOISTURE (1-h TL FM): Moisture content of one-hour timelag fuels.

ONE-HUNDRED HOUR TIMELAG FUELS: Dead fuels consisting of roundwood in the size range of 1 to 3 inches (2.5 to 7.6 cm) in diameter and very roughly the layer of litter extending from approximately three-fourths of an inch (1.9 cm) to 4 inches (10 cm) below the surface.

ONE-HUNDRED HOUR TIMELAG FUEL MOISTURE (100-h TL FM): The moisture content of the 100-hour timelag fuels.

ONE-THOUSAND-HOUR TIMELAG FUELS: Dead fuels consisting of roundwood 3-8 inches in diameter and the layer of the forest floor more than about 4 inches below the surface.

ONE-THOUSAND-HOUR TIMELAG FUEL MOISTURE (1,000-h TL FM): The moisture content of the 1,000-hour timelag fuels.

ONSHORE FLOW: Wind blowing from water to land.

OPEN BURNING: Uncontrolled burning of wastes in the open or in an open dump.

OPERATING WEIGHT: For helicopters, the equipped weight plus weight of the crew and fuel.

OPERATIONAL CONTROL: With respect to a flight, the exercise of authority over initiating, conducting, or terminating a flight.

OPERATIONAL PERIOD: The period of time scheduled for execution of a given set of tactical actions as specified in the Incident Action Plan. Operational Periods can be of various lengths, although usually not over 24 hours.

OPERATIONS BRANCH DIRECTOR: Person under the direction of the operations section chief who is responsible for implementing that portion of the incident action plan appropriate to the branch.

OPERATIONS COORDINATION CENTER (OCC): Primary facility of the Multi-agency Coordination System (MACS); houses staff and equipment necessary to perform the MACS function.

OPERATIONS SECTION: The section responsible for all tactical operations at the incident. Includes branches, divisions and/or groups, task forces, strike teams, single resources and staging areas.

ORBIT: Circular holding pattern of an air tanker in the vicinity of a fire, waiting for orders to make a drop.

ORDERING MANAGER: Person responsible to the supply unit leader for ordering all supplies and equipment needed at an incident.

ORGANIC MATTER: That fraction of the soil that includes plant and animal residues at various stages of decomposition, cells and tissues of soil organisms, and substances synthesized by the soil population.

ORGANIC SOIL: Any soil or soil horizon containing at least 30% , organic matter (e.g., muck, peat).

OROGRAPHIC: Pertaining to, or caused by mountains.

ORTHOPHOTO: Photograph obtained from the orthogonal (i.e., horizontal) projection of a correctly oriented stereoscopic model formed by two overlapping aerial photographs; an orthophoto is free of tilt and relief displacements.

ORTHOPHOTO MAPS: Aerial photographs corrected to scale such that geographic measurements may be taken directly from prints. They may contain graphically emphasized geographic features and may be provided with overlays of such features as: water systems, facility location, etc.

OSBORNE FIREFINDER: A sighting device used by lookouts to determine the horizontal bearing and sometimes the vertical angle of a fire from a lookout. (Syn. ALIDADE) (see also FIREFINDER MAP)

OUT-OF-SERVICE RESOURCES: Resources assigned to an incident but unable to respond for mechanical, rest, or personal reasons.

OUTSIDE AID: Firefighting assistance given to adjacent areas and nearby communities by contract or other agreement that covers conditions and payment for assistance rendered and services performed. Contrasted to mutual aid, in which neighboring firefighting organizations assist each other without charge.

OUTSIDE DIAMETER (OD): External diameter of a tube, conductor, or coupling as distinguished from its inside diameter.

OVERHEAD: Personnel assigned to supervisory positions, including incident commander, command staff, general staff, branch directors, supervisors, unit leaders, managers and staff.

OVERLOAD: Gross vehicle weight (GVW) in excess of the gross vehicle weight rating (GVWR) specified by the chassis manufacturer. Also an excess of weight over the gross axle weight rating (GAWR) specified by the chassis manufacturer.

OVERWINTERING FIRE: A fire that persists through the winter months until the beginning of fire season.

- P -

PACKING RATIO: The fraction of a fuel bed occupied by fuels, or the fuel volume divided by bed volume.

PACK TEST: Used to determine the aerobic capacity of fire suppression support personnel and assign physical fitness scores. The test consists of walking a specified distance, with or without a weighted pack, in a predetermined period of time, with altitude corrections.

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

PANORAMIC PROFILE MAP: A panoramic sketch drawn around the circumference of a firefinder map to show the profiles of the topography as it appears from the lookout.

PARACARGO: Anything intentionally dropped, or intended for dropping, from any aircraft by parachute, by other retarding devices, or by free fall.

PARALLEL ATTACK: Method of fire suppression in which fireline is constructed approximately parallel to, and just far enough from the fire edge to enable workers and equipment to work effectively, though the fireline 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 fireline.

PARALLEL BURNING: (1) A type of suppression fire. Igniting a narrow strip of fuel adjacent to a control line and then burning successively wider adjacent strips as the preceding strip burns out. (2) Burning only a relatively narrow strip or strips through an area of slash, leaving the remainder. (3) Burning slash in strips generally 100-300 feet wide along roads or barriers to subdivide the slash area into blocks.

PARALLEL PUMPING: Procedure by which the flow from two fire pumps is combined into one hose line.

PARALLEL TANDEM PUMPING: Procedure by which the flow from two fire pumps is combined into a third pump.

PARAMETER: A variable which can be measured quantitatively; sometimes, an arbitrary constant; associated with populations. One of the unknown values that determine a model.

PARKING TENDER: Person responsible to the deck coordinator for take-offs and landings of helicopters at an assigned touchdown pad. There is one parking tender for each touchdown pad.

PARTIAL RISK: Part of the National Fire Danger Rating System (NFDRS). Contribution of a specific source to human-caused risk, derived from the daily activity level assigned a risk source and its risk source ratio.

PARTIAL RISK FACTOR: Part of the National Fire Danger Rating System (NFDRS). Contribution to human-caused risk made by a specific risk source; a function of the daily activity level assigned that risk source and the appropriate risk source ratio.

PARTIAL SLASH DISPOSAL: Slash disposal by any method or combination of methods, resulting in the destruction of only a portion of the slash on a given area.

PARTICLE SIZE: The size of a piece of fuel, often expressed in terms of size classes.

PARTICULATE MATTER: Any liquid or solid particles. "Total suspended particulates" as used in air quality are those particles suspended in or falling through the atmosphere. They generally range in size from 0.1 to 100 microns.

PARTICULATES: Fine liquid or solid particles such as dust, smoke, mist, fumes, or smog found in air or emissions.

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 or the base of the fire.

PASSIVE CROWN FIRE: A fire in the crowns of trees in which trees or groups of trees torch, ignited by the passing front of the fire. The torching trees reinforce the spread rate, but these fires are not basically different from surface fires.

PATCH BURNING: Burning in patches to prepare sites for group planting or sowing or to form a barrier to subsequent fires.

PATROL: (1) To travel over a given route to prevent, detect, and suppress fires. (2) To go back and forth vigilantly over a length of control line during and/or after construction to prevent breakovers, suppress spot fires, and extinguish overlooked hot spots. (3) A person or group of persons who carry out patrol actions.

PATROL TIME: Elapsed time from completion of original mopping up until the fire is declared to be extinguished.

PATROL UNIT: Any light, mobile unit with limited pumping and water capacity.

PATTERN: The distribution of an aerially delivered retardant drop on the target area in terms of its length, width, and momentum (velocity x mass) as it approaches the ground. The latter determines the relative coverage level of the fire retardant on fuel within the pattern. (Syn. DROP PATTERN)

PAYLOAD: Weight of passengers and/or cargo being carried by an aircraft.

PEAK FIRE SEASON: That period of the fire season during which fires are expected to ignite most readily, to burn with greater than average intensity, and to create damages at an unacceptable level.

PEAK MONTHLY AVERAGE: Highest monthly average of human-caused fires calculated for a protection unit.

PEAK WIND: The greatest 5-second average wind speed during the previous hour that exceeded 25 knots.

PERCOLATION: Passage of liquid through a porous body, as movement of water through soil.

PERENNIAL PLANT: A plant that continues to grow year after year.

PERFORMANCE CHART: A chart, table, or graph provided by the manufacturer for use in determining an aspect of helicopter and fixed-wing aircraft performance.

PERIMETER ACCESS: Fireline suitable for vehicle travel.

PERIOD OF ALERT: Period of time when suppression crews, equipment, and aircraft are kept ready for deployment on short notice; usually employed when fire danger reaches a predetermined severity index.

PERMAFROST: A short term for "permanently frozen ground"; any part of the earth's crust, bedrock, or soil mantle that remains below 32° F (0° C) continuously for a number of years.

PERSONAL PROTECTIVE EQUIPMENT (PPE): That equipment and clothing required to mitigate the risk of injury from or exposure to hazardous conditions encountered during the performance of duty. PPE includes but is not limited to: fire resistant clothing, hard hat, flight helmets, shroud, goggles, gloves, respirators, hearing protection, chainsaw chaps, and shelter.

PERSONNEL POOL: Personnel who have reported to the incident without an assignment (i.e., they are not assigned to an increment, strike team, or organizational unit).

PERSONNEL TIME RECORDER: Person responsible to the time unit leader for daily recording of the time of all personnel at the incident, posting commissary charges to the time reports, closing out all records prior to personnel leaving the incident, and distributing completed time documents according to each agency's policy.

PILING AND BURNING: Piling slash resulting from logging or fuel management activities and subsequently burning the individual piles.

PILOT BALLOON OPERATION (PIBAL): A method of determining winds aloft in the vicinity of an observation station by periodically reading the elevation and azimuth angles of a theodolite, usually at one-minute intervals, while tracking the ascent of a small free-lift balloon. A PIBAL is commonly used for constructing a wind profile.

PILOT-IN-COMMAND: Pilot responsible for the operation and safety of an aircraft during flight time.

PILOTAGE: Navigation of aircraft by visual reference to landmarks.

PIN LUG COUPLING: A hose coupling with one or more cylindrical studs on its outside rim. The studs allow the use of a spanner wrench to tighten the coupling.

PINCER ACTION: Direct attack around a fire in opposite directions by two or more attack units.

PING-PONG BALL SYSTEM: Mechanized method of dispensing DAIDs (Delayed Aerial Ignition Devices) at a selected rate. The DAIDs are polystyrene balls, 1.25 inches in diameter, containing potassium permanganate. The balls are fed into a dispenser, generally mounted in a helicopter, where they are injected with a water-glycol solution and then drop through a chute leading out of the helicopter. The chemicals react thermally and ignite in 25-30 seconds. The space between ignition points on the ground is primarily a function of helicopter speed, gear ratio of the dispenser, and the number of chutes used (up to four). (see also AERIAL IGNITION DEVICE, DELAYED AERIAL IGNITION DEVICES, HELITORCH, PLASTIC SPHERE DISPENSER)

PLAN OF ATTACK: The selected course of action and organization of personnel and equipment in fire suppression, as applied to a particular fire or to all fires of a specific type.

PLANETARY BOUNDARY LAYER: That layer of the atmosphere from the earth's surface to the gradient wind level, i.e., the friction layer.

PLANNING INTERVAL: Period of time between scheduled planning meetings.

PLANNING MEETING: A meeting held regularly throughout the duration of an incident, to select specific strategies and tactics for incident control operations and to plan for needed service and support. On larger incidents, the planning meeting is a major element in the development of the Incident Action Plan.

PLANNING SECTION: Responsible for the collection, evaluation, and dissemination of tactical information related to the incident, and for the preparation and documentation of incident action plans. The section also maintains information on the current and forecasted situation, and on the status of resources assigned to the incident. Includes the situation, resource, documentation, and demobilization units, as well as technical specialists.

PLASTIC SPHERE DISPENSER (PSD): Device installed, but jettisonable, in a helicopter, which injects glycol into a plastic sphere containing potassium permanganate, which is then expelled from the machine and aircraft. This produces an exothermic reaction resulting in ignition of fuels on the ground for prescribed or wildland fire applications. (see also AERIAL IGNITION DEVICES, DELAYED AERIAL IGNITION DEVICES, HELITORCH, PING-PONG BALL SYSTEM)

PLOW LINE: Fireline constructed by a fire plow, usually drawn by a tractor or other motorized equipment. (see also DOZER, TRACTOR, TRACTOR PLOW)

PLUME: The segment of the atmosphere occupied by the emissions from a single source or a grouping of sources close together. A convection column, if one exists, forms a specific part of the plume.

PLUME-DOMINATED WILDFIRE: A wildland fire whose activity is determined by the convection column.

PLUME RISE: How high above the level of release an emission plume rises.

POCKETS OF A FIRE: Unburned indentations in the fire edge formed by fingers or slow burning areas.

POINT OF ATTACK: That part of the fire on which work is started when suppression crews arrive.

POINT OF ORIGIN: Point of original ignition of a fire.

POINT SOURCE: A permanent source of air pollution that can be distinctly identified such as a smokestack.

POINT SOURCE FIRE PREDICTIONS: Predictions that apply to an initiating fire burning during a time when conditions have been relatively constant, or where it can be assumed that the fire will maintain a basically elliptical shape.

POISE: Unit of fluid viscosity in fire retardant, defined as tangential force per unit area (dynes/square centimeter) required to maintain unit difference in velocity (1 centimeter/second) between two parallel planes separated by 1 cm of fluid (1 poise=1 dyne-second/cubic centimeter).

POLLUTANT: Any substance in the atmosphere that is foreign to the natural atmosphere or that exceeds its natural concentrations in the atmosphere. The universal connotation is that a pollutant is potentially deleterious.

PORTABLE PUMP: Small gasoline-driven pump that can be carried to a water source by one or two firefighters or other conveyance over difficult terrain.

PORTATANK: Container, either with rigid frame or self supporting, which can be filled with water or fire chemical mixture from which fire suppression resources can be filled. It can also be a source for charging hose lays from portable pumps or stationary engines.

POSITIVE DISPLACEMENT PUMP: A pump which moves a specified quantity of water through the pump chamber with each stroke or cycle; it is capable of pumping air, and therefore is self-priming, but must have pressure relief provisions if plumbing or hoses have shut-off nozzles or valves. Gear pumps and piston pumps are common examples of this type.

POTATO ROLL: Quick method of rolling hose for pick up; hose is rolled as a ball of string.

POUNDS PER SQUARE INCH (PSI): Measurement of pressure (e.g., pump pressure, nozzle pressure, friction loss in hose, pressure loss or gain due to elevation).

PREATTACK: A planned, systematic procedure for collecting, recording, and evaluating prefire and fire management intelligence data for a given planning unit or preattack block. The planning phase is usually followed by a construction and development program integrated with other resources and activities.

PREATTACK BLOCK: Unit of wildland delineated by logical and strategic topographic features for preattack planning.

PREATTACK PLANNING: Within designated blocks of land, planning the locations of firelines, fire camps, water sources, and helispots; planning transportation systems, probable rates of travel, and constraints of travel on various types of attack units; and determining what types of attack units likely would be needed to construct particular firelines, their probable rate of fireline construction, and topographic constraints on fireline construction.

PRECAUTIONARY LANDING: A landing necessitated by apparent impending failure of engines, systems, or components which makes continued flight inadvisable.

PRECIPITATION: Any or all forms of water particles, liquid or solid, that fall from the atmosphere and reach the ground.

PRECIPITATION DURATION: Time, in hours and fraction of hours, that a precipitation event lasts. More precisely, for fire danger rating purposes, the length of time that fuels are subjected to liquid water.

PRECIPITATION GAUGE: Device commonly used to collect and permit measurement of any form of rain and snow sufficiently heavy to have fallen to the earth's surface. Also called rain gauge.

PRECISION APPROACH PROCEDURE: A standard instrument approach procedure for fixed-wing aircraft in which an electronic glide slope is provided, such as ILS and PAR.

PRECISION APPROACH RADAR (PAR): Blind landing in which the aircraft is observed from the ground by means of radar and directed along a suitable glide path by instructions radioed to the pilot.

PRECONNECTED: Hard suction hose or discharge hose carried connected to pump, eliminating delay occasioned when hose and nozzles must be connected and attached at fire.

PREIGNITION COMBUSTION PHASE: Thermal or chemical decomposition of fuel at an elevated temperature. This is the pre-combustion stage of burning during which distillation and pyrolysis predominate. Heat energy is absorbed by the fuel which, in turn, gives off water vapor and flammable tars, pitches, and gases. These ignite when mixed with oxygen to initiate the flaming combustion phase.

PREIGNITION PHASE: Preliminary phase of combustion in which fuel elements ahead of the fire are heated, causing fuels to dry. Heat induces decomposition of some components of the wood, causing release of combustible organic gases and vapors.

PREMARKING BURN: Burning of understory brush prior to the sale of forest products to improve the efficiency of timber marking and harvesting. (Syn. ACCESSIBILITY BURN)

PREPAREDNESS: (1) Condition or degree of being ready to cope with a potential fire situation. (2) Mental readiness to recognize changes in fire danger and act promptly when action is appropriate. (see also READINESS)

PREPAREDNESS PLAN: A written plan providing for timely recognition of approaching critical fire situations, priority setting, the deployment of forces, and other actions to respond to those situations.

PRESCRIBED BURNING: Controlled application of fire to wildland fuels in either their natural or modified state, under specified environmental conditions, which allows the fire to be confined to a predetermined area, and produce the fire behavior and fire characteristics required to attain planned fire treatment and resource management objectives.

PRESCRIBED FIRE: A management ignited wildland fire that burns under specified conditions where the fire is confined to a predetermined area and produce the fire behavior and fire characteristics required to attain planned fire treatment and resource management objectives.

PRESCRIBED NATURAL FIRE: Naturally ignited wildland fire that burns under specified conditions where the fire is confined to a predetermined area and produce the fire behavior and fire characteristics to attain planned fire treatment and resource management objectives.

PRESCRIPTION: A written statement defining the objectives to be attained as well as the conditions of temperature, humidity, wind direction and speed, fuel moisture, and soil moisture, under which a fire will be allowed to burn. A prescription is generally expressed as acceptable ranges of the prescription elements, and the limit of the geographic area to be covered.

PRESSURE GRADIENT: The difference in atmospheric pressure between two points on a weather map. That is, the magnitude of pressure difference between two points at sea level, or at constant elevation above sea level. Wind speed is directly related to pressure gradient. If distance between constant pressure lines is reduced by one-half, wind speed will be doubled. Conversely, if distance between lines is doubled, wind speed will be reduced by one-half.

PRESSURE LOSS: Reduction in water pressure between a pump or hydrant and a nozzle due to expenditure of pressure energy required to move water through a hose; includes losses due to back pressure, friction loss, elevation loss, and/or losses in fittings.

PRESSURE PATTERN: The distribution of surface atmospheric pressure features over an area of the earth as shown on a weather map. Surface pressure features include lines of constant pressure (isobars), highs, lows, and pressure gradient. The pressure pattern is directly related to wind speeds and directions at specific locations.

PRESUPPRESSION: Activities in advance of fire occurrence to ensure effective suppression action. Includes planning the organization, recruiting and training, procuring equipment and supplies, maintaining fire equipment and fire control improvements, and negotiating cooperative and/or mutual aid agreements.

PRETREAT: The use of water, foam or retardant along a control line in advance of the fire. Often used where ground cover or terrain is considered best for control action.

PREVENTION: Activities directed at reducing the incidence of fires, including public education, law enforcement, personal contact, and reduction of fuel hazards (fuels management).

PREVENTION OF SIGNIFICANT DETERIORATION (PSD): A program identified by the Clean Air Act to prevent air quality and visibility degradation and to remedy existing visibility problems. Areas of the country are grouped into 3 classes which are allowed certain degrees of pollution depending on their uses. National Parks and Wilderness Areas meeting certain criteria are "Class I" or "clean area" in that they have the smallest allowable increment of degradation.

PRIMARY LOOKOUT: A lookout point that must be staffed to meet planned minimum seen area coverage in a given locality. For that reason, continuous service is necessary during the normal fire season and the lookout (person) is not sent to fires.

PRIMING: Filling pump with water when pump is taking water not under a pressure head. Necessary for centrifugal pumps.

PROBABILITY: A number representing the chance that a given event will occur. The range is from 0% for an impossible event, to 100% for an inevitable event.

PROBABILITY FORECAST: A forecast of the probability of occurrence of one or more of a mutually exclusive set of weather contingencies as distinguished from a series of categorical statements.

PROBABILITY OF IGNITION: The chance that a firebrand will cause an ignition when it lands on receptive fuels.

PROCUREMENT UNIT: Functional unit within the finance / administration section responsible for financial matters involving vendor contracts.

PROGRESSIVE HOSE LAY: A hose lay in which double shutoff wye (Y) valves are inserted in the main line at intervals and lateral lines are run from the wyes to the fire edge, thus permitting continuous application of water during extension of the lay.

PROGRESSIVE METHOD OF LINE CONSTRUCTION: A system of organizing workers to build fireline in which they advance without changing relative positions in line.

PROPORTIONER: A device that adds a predetermined amount of foam concentrate to water to form foam solution.

PROTECTING AGENCY: Agency responsible for providing direct incident management within a specific geographical area pursuant to its jurisdictional responsibility or as specified and provide by contract, cooperative agreement, etc. (see also FIRE AGENCY, RESPONSIBLE FIRE AGENCY)

PROTECTION: The actions taken to limit the adverse environmental, social, political, and economical effects of fire.

PROTECTION AREA: That area for which a particular fire protection organization has the primary responsibility for attacking an uncontrolled fire and for directing the suppression action. Such responsibility may develop through law, contract, or personal interest of the firefighting agent (e.g., a lumber operator). Several agencies or entities may have some basic responsibilities (e.g., private owner) without being known as the fire organization having direct protection responsibility. (Syn. DIRECT PROTECTION AREA)

PROTECTION BOUNDARY: The exterior perimeter of an area within which a specified fire agency has assumed a degree of responsibility for wildland fire control. It may include land in addition to that for which the agency has jurisdiction or contractual responsibility.

PROTECTION FOREST: An area, wholly or partially covered with woody growth, managed primarily to regulate stream flow, maintain water quality, minimize erosion, stabilize drifting sand, or exert any other beneficial forest influences.

PROTECTION UNIT: A geographical area which is administratively defined and which is the smallest area for which organized fire suppression activities are formally planned.

PSYCHROMETER: The general name for instruments designed to determine the moisture content of air. A psychrometer consists of dry- and wet-bulb thermometers that give the dry- and wet-bulb temperatures, which in turn are used to determine relative humidity and dew point.

PUBLIC AIRCRAFT: Aircraft used only in the service of a government or a political subdivision. It does not include any government-owned aircraft engaged in carrying persons for commercial purposes.

PULASKI: A combination chopping and trenching tool widely used in fireline construction, which combines a single-bitted axe blade with a narrow adze-like trenching blade fitted to a straight handle.

PULLING TOPS: Protective measure in timber harvesting area whereby unutilized treetops, with branches attached, along with accumulations of other slash, are dragged away from seed trees or advanced regeneration to reduce damage in case of accidental fires.

PUNK: Partly decayed material, such as old wood, in which fire can smolder unless it is carefully mopped up and extinguished. A good receptor for firebrands when dry.

PYROLYSIS: The thermal or chemical decomposition of fuel at an elevated temperature. This is the preignition combustion phase of burning during which heat energy is absorbed by the fuel which, in turn, gives off flammable tars, pitches, and gases.

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QUADRANGLE: Mapping unit which defines an area in terms of longitude and latitude distance. Two common scales are 1:24,000 quadrangles, which are 7.5' longitude x 7.5' latitude, and 1:62,500 quadrangles, which are 15' longitude x 15' latitude.

- R -

RADIAL: A magnetic bearing extending from a VOR, VORTAC, OR TACAN.

RADIANT BURN: A burn received from a radiant heat source.

RADIANT HEAT FLUX: The amount of heat flowing through a given area in a given time, usually expressed as calories/square centimeter/second.

RADIATION: (1) Propagation of energy in free space by virtue of joint, undulatory variations in the electric or magnetic fields in space, (i.e., by electromagnetic waves). (2) Transfer of heat in straight lines through a gas or vacuum other than by heating of the intervening space.

RADIO FIX: Determination of position by one or more radio navigational aids.

RADIOSONDE: A device carried aloft by a balloon equipped with measuring instruments that automatically convert temperature, pressure, and humidity data into electrical impulses and transmit this information to a ground recorder. (see also SOUNDING)

RAILROAD FIRE: A fire resulting from any operation or activity of a common carrier railroad, except smoking.

RANGE FIRE: Any wildfire on rangeland.

RANGER DISTRICT: An administrative subdivision of a national forest (under a district ranger) or other tract of public land.

RAPPELLING: Technique of landing specifically trained and certified firefighters from hovering helicopters; involves sliding down ropes with the aid of friction-producing devices.

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 or acres per hour for a specific period in the fire's history.

RATE OF SPREAD FACTOR: A factor usually on a scale of 1 to 100 which represents a relative rate of forward spread for a specific fuel condition and fixed weather conditions (or fuel model). Factors can be used as multipliers, arguments for entering tables, or provide a ratio of values between two fuels.

RATE OF SPREAD METER: A device that computes the probable rate of spread of a fire for different combinations of fuel moisture, wind speed, and other selected factors.

RATING PERIOD: Part of the National Fire Danger Rating System (NFDRS). The period of time during which a fire danger rating value is considered valid or representative for administrative or other purposes. Normally it is 24 hours extending from midnight to midnight.

RAWINSONDE: Method of upper-air observation consisting of an evaluation of the wind speed and wind direction, temperature, pressure, and relative humidity aloft by means of a balloon-borne radiosonde tracked by a radar or radio direction-finder.

REACTION INTENSITY: The rate of heat release, per unit area of the flaming fire front, expressed as heat energy/area/time, such as Btu/square foot/minute, or Kcal/square meter/second. (see also COMBUSTION RATE)

READINESS: (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. (see also PREPAREDNESS)

REAR (of a fire): (1) That portion of a fire spreading directly into the wind or down slope. (2) That portion of a fire edge opposite the head. (3) Slowest spreading portion of a fire edge. Also called heel of a fire.

REASONABLY AVAILABLE CONTROL MEASURES (RACM): Control measures developed by EPA which apply to residential wood combustion, fugitive dust, and prescribed and silvicultural burning in and around "moderate" PM-10 non-attainment areas. RACM is designed to bring an area back into attainment and uses a smoke management program which relies on weather forecasts for burn/no-burn days.

REBURN: (1) Repeat burning of an area over which a fire has previously passed, but left fuel that later ignites when burning conditions are more favorable; (2) An area that has reburned.

RECEIVING/DISTRIBUTION MANAGER: Person responsible to the supply unit leader for receiving and distributing all supplies and equipment ordered for the incident.

RECONNAISSANCE (RECON): To examine a fire area to obtain information about current and probable fire behavior and other related fire suppression information.

RECORDERS: Individuals within ICS organizational units who are responsible for recording information. Recorders may be found in planning, logistics and finance/administration units.

RECOVERY: The increase in fuel moisture as a result of increased relative humidity, usually occurring overnight.

RECREATION FIRE: A fire resulting from recreational use, except smoking.

RED CARD: Fire qualification card issued to fire rated persons showing their training needs and their qualifications to fill specified fire suppression positions in a large fire suppression or incident organization.

RED FLAG WARNING: Term used by fire weather forecasters to alert forecast users to an ongoing or imminent critical fire weather pattern. (see also FIRE WEATHER WATCH)

REEL: A frame on which hose is wound, now chiefly used for "booster" or small hose (3/4- or 1-inch hose) (19 or 25 mm) supplied by a water tank on the apparatus; also, a hand-drawn 2-wheel frame for 2-1/2 inch (64 mm) hose used in industrial plants.

REGIONAL HAZE: Atmospheric haze over a large area with no attributable source.

REHABILITATION: The activities necessary to repair damage or disturbance caused by wildfire or the wildfire suppression activity.

REINFORCED RESPONSE: Those resources requested in addition to the initial attack resources.

REKINDLE: Reignition due to latent heat, sparks, or embers or due to presence of smoke or steam.

RELATIVE HUMIDITY (RH): The ratio of the amount of moisture in the air, to the maximum amount of moisture that air would contain if it were saturated. The ratio of the actual vapor pressure to the saturated vapor pressure.

RELAY: Use of two or more fire pumps to move water a distance which would require excessive pressures in order to overcome friction loss if only one pump were employed at the source.

RELAY TANK: A tank, usually collapsible, used as a reservoir in the relay of water from one fire pump to another.

RELEASE ORDER: The order that defines when personnel and/or equipment will be ready for release from an incident.

RELIEF VALVE: A pressure-controlled device which bypasses water at a fire pump to prevent excessive pressures when a nozzle is shut down.

RELOAD BASE: An airfield where air tankers are reloaded but not permanently stationed. (see also AIR ATTACK BASE)

REMOTE AUTOMATIC WEATHER STATIONS (RAWS): An apparatus that automatically

acquires, processes, and stores local weather data for subsequent transmission to the GOES Satellite, from which they are retransmitted to an earth receiving station for use in the National Fire Danger Rating System.

REPEATER: A radio signal station that automatically relays a radio transmission, sometimes over a different frequency, thereby increasing the range of transmission. Repeaters are often named for the mountaintops or peaks where they are installed.

REPORT TIME: Elapsed time from fire discovery until the first personnel charged with initiating action for fire suppression are notified of its existence and location.

REPORTABLE FIRE: Any wildfire that requires fire suppression to protect natural resources or values associated with natural resources, or is destructive to natural resources.

REPORTING LOCATIONS: Location or facilities where incoming resources can check-in at the incident. Check-in locations include: incident command post (resources unit), incident base, camps, staging areas, helibases, helispots, and direct to the line. Check-in at one location only. (see also CHECK-IN)

RESCUE: Saving a life from fire or accident; removing a victim from an untenable or unhealthy atmosphere.

RESCUE MEDICAL: Any staffed ground vehicle capable of providing medical services.

RESERVE: In wildland fire suppression terminology resources not assigned to a specific task, but available for assignment.

RESIDENCE TIME: The time, in seconds, required for the flaming front of a fire to pass a stationary point at the surface of the fuel. The total length of time that the flaming front of the fire occupies one point.

RESIDUAL COLONIZERS: Plants that germinate after a disturbance from seed that was present on the site.

RESIDUAL COMBUSTION STAGE: The smoldering zone behind the zone of an advancing fire front.

RESIDUAL SMOKE: Smoke produced by smoldering material after the initial fire front has passed through the fuel.

RESIDUE TREATMENT: Managing, manipulating, removing, or modifying forest residue. Treatments may involve piling, chipping, crushing, burning, burying, lopping, herbicide spraying of live residues, leaving for natural deterioration, removal, or a combination of these.

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.

RESISTANCE TO LINE CONSTRUCTION: The relative difficulty of constructing control line as determined by the fuel, topography, and soil.

RESOURCES: (1) Personnel, equipment, services and supplies available, or potentially available, for assignment to incidents. Personnel and equipment are described by kind and type, e.g., ground, water, air, etc., and may be used in tactical, support or overhead capacities at an incident. (2) The natural resources of an area, such as timber, grass, watershed values, recreation values, and wildlife habitat. (see also **VALUES-AT-RISK**)

RESOURCE ORDER: The form used by dispatchers, service personnel, and logistics coordinators to document the request, ordering or release of resources, and the tracking of those resources on an incident.

RESOURCE STATUS BOARD: Visual aid containing pertinent information regarding fire organization, current operational period resources, previous operational period resources, and next operational period resources being prepared; placed at a convenient location in fire camp for review by fireline overhead personnel on large fires.

RESOURCE UNIT: Functional unit within the planning section responsible for recording the status of resources committed to the incident. The unit also evaluates resources currently committed to the incident, the impact that additional responding resources will have on the incident, and anticipated resource needs.

RESOURCE USE SPECIALIST: Person responsible to the planning section chief for determining capabilities and limitations of resources at an incident.

RESOURCE VALUE-AT-RISK: Fire suppression planning tool providing a relative expression (in five classes) of fire effects on all resources (not the value of the resources themselves).

RESPIRATION: Oxidation of food in living cells, with the resulting release of energy; part of the energy is transferred to other compounds and some is used in the activation of certain cell processes.

RESPIRATOR: A simple filter mask for individual protection against smoke and fumes, recommended for use in fire suppression on wildfires only; not recommended for use on structure fires or fires involving most hazardous materials. (see also **SELF-CONTAINED BREATHING APPARATUS - SCBA, AIR PACK**)

RESPONSE: Movement of an individual firefighting resource from its assigned standby location to another location or to an incident in reaction to dispatch orders or to a reported alarm.

RESPONSIBLE FIRE AGENCY: Agency with primary responsibility for fire suppression on any particular land area. (see also FIRE AGENCY, PROTECTING AGENCY)

RESTRICTED AIRSPACE: Airspace of defined dimensions identified by an area on the surface of the earth within the flight of an aircraft, which is subject to restrictions (but not wholly prohibited).

RESTRICTED CATEGORY: Aircraft that is generally used for cargo, retardant dropping, agricultural operations, survey work and other specific projects, and may not transport passengers.

RETARDANT: A substance or chemical agent which reduces the flammability of combustibles.

RETARDANT BASE: Ground facilities for mixing, storing, and loading fire retardant into air tankers.

RETARDANT COVERAGE: Area of fuel covered and degree of coverage on the fuel by a fire retardant, usually expressed in terms of gallons per hundred square feet (liters per square meter).

RETARDANT DROP: Fire retardant cascaded from an air tanker or helitanker.

RETURN AND HOLD: An order to an air tanker pilot to return to the retardant base and await further instructions; mission completed, further loads not required.

REVERSIBLE SIAMESE (SIMWYE): Hose fitting that performs the functions of a siamese or a wye (i.e., to combine the flow from two lines into a single line or to permit two lines to be taken from a single line). (see also SIAMESE, WYE)

RHEOLOGY: Science of deformation and flow of fire retardants and other liquids, especially of the cohesiveness bodies and stress-strain relationship of their particles.

RHEOLOGIC PROPERTIES: Flow characteristics of liquid fire retardants, especially their cohesiveness or ability to hold together while falling through the air.

RICH TOOL: A long-handled combination rake and cutting tool, the blade of which is constructed of a single row of mowing machine cutter teeth fastened to a piece of angle iron. Also called fire rake or council rake. (see also COUNCIL TOOL)

RIDGE: An elongated area of relatively high atmospheric pressure extending from the center of a high-pressure region. (see also SURFACE HIGH)

RING FIRE: A fire started by igniting the full perimeter of the intended burn area so that the ensuing fire fronts converge toward the center of the burn. Set around the outer perimeter of a resource to establish a protective black-line-buffer.

RISK: (1) The chance of fire starting as determined by the presence and activity of causative agents. (2) A causative agent. (3) (NFDRS) A number related to the potential of firebrands to which a given area will be exposed during the rating day.

RISK INDEX: A number related to the probability of a firebrand igniting a fire.

RISK SOURCE: Identifiable human activity that historically has been a major cause of wildfires on a protection unit; one of the eight general causes listed on the standard fire report.

RISK SOURCE RATIO: Portion of human-caused fires that have occurred on a protection unit chargeable to a specific risk source; calculated for each day of the week for each risk source.

ROCKER LUG COUPLING: Hose coupling in which the lugs used for tightening or loosening are semicircular in shape and designed to pass over obstructions.

ROLL CLOUD: A turbulent altocumulus-type cloud formation found in the lee of some large mountain barriers. The air in the cloud rotates around an axis parallel to the range. Also sometimes refers to part of the cloud base along the leading edge of a cumulonimbus cloud; it is formed by rolling action in the wind shear region between cool downdrafts within the cloud and warm updrafts outside the cloud. Also called rotor cloud.

ROTOR: Assembly of airfoils (rotor blades), together with a hub and attachments, that rotates about an axis to provide lift and/or thrust on a helicopter.

ROTORCRAFT: An aircraft that depends principally on the lift generated by one or more rotors for its support in flight. Also called rotary wing. (Syn. HELICOPTER).

ROTOR BLAST: Air turbulence occurring under and around the main rotor of an operating helicopter. Also called rotor downwash.

ROTOR DIAMETER: The main rotor arc in feet and inches (meters). Used for planning helispot clearance.

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 fire hazard in rough, usually by prescribed burning.

ROUTE CARD: Index card used by a dispatcher and frequently carried on rural fire apparatus which lists specific directions for responding to individual rural properties and frequently includes a description of the property, water sources available, and any special information pertinent to fire suppression and rescue operations. Also called running card.

RUN (of a fire): Rapid advance of the head of a fire, characterized by a marked transition in fireline intensity and rate of spread with respect to that noted before and after the advance.

RUNNING FIRE: Behavior of a fire spreading rapidly with a well defined head.

RURAL: Any area wherein residences and other developments are scattered and intermingled with forest, range, or farm land and native vegetation or cultivated crops.

RURAL FIRE DISTRICT (RFD): An organization established to provide fire protection to a designated geographic area outside of areas under municipal fire protection. Usually has some taxing authority and officials may be appointed or elected.

RURAL FIRE PROTECTION: Fire protection and firefighting problems that are outside of areas under municipal fire prevention and building regulations and that are usually remote from public water supplies.

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SADDLE: Depression or pass in a ridgeline.

SAFETY CIRCLE: An obstruction-free circle around the (helicopter) landing pad.

SAFETY OFFICER: A member of the command staff responsible to the incident commander for monitoring and assessing hazardous and unsafe situations, and developing measures for assessing personnel safety.

SAFETY ZONE: An area cleared of flammable materials used for escape in the event the line is outflanked or in case a spot fire causes fuels outside the control line to render the line unsafe. In firing operations, crews progress so as to maintain a safety zone close at hand allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuelbreaks; they are greatly enlarged areas which can be used with relative safety by firefighters and their equipment in the event of blowup in the vicinity. (see also DEPLOYMENT ZONE)

SALVO: Dropping by an air tanker of its entire load of fire retardant at one time.

SAMPLE: Part of a population; that portion of the population that is measured.

SAMPLE SIZE: The number of items or observations in a sample; usually denoted by lower case letter n.

SCORCH HEIGHT: Average heights of foliage browning or bole blackening caused by a fire.

SCRATCH LINE: An unfinished preliminary control line hastily established or constructed as an emergency measure to check the spread of fire.

SCRUBBING: The process of agitating foam solution and air within a confined space (usually a hose) that produces tiny, uniform bubbles - the length and type of hose determine the amount of scrubbing and, therefore, foam quality.

SEA BREEZE: A breeze (wind) blowing inland from the sea generally during daytime hours.

SEA-LEVEL PRESSURE: Pressure value obtained by the theoretical reduction or increase of station pressure to sea level. The average atmospheric pressure at sea level is 14.7 psi.

SEASONAL MONTHLY AVERAGE: Historically, the average number of human-caused fires occurring on a protection unit per month during the established fire season.

SEASONAL RISK CLASS: Objective ranking of protection units within an administrative group based on the number of human-caused fires for at least the past five years.

SECOND-IN-COMMAND: Pilot who is designated to be second-in-command of an aircraft during flight time.

SECONDARY LINE: Any fireline constructed at a distance from the fire perimeter concurrently with or after a line already constructed on or near to the perimeter of the fire. Generally constructed as an insurance measure in case the fire escapes control by the primary line.

SECONDARY LOOKOUT: (1) A lookout point intermittently used to supplement the visible area coverage of the primary lookout system when required by fire danger, poor visibility, or other factors. (2) The person who occupies such a station.

SECONDARY WEATHER STATION: Station at which minimum weather measurements are taken to compute ratings of burning conditions; provides supplementary information on weather experience.

SECTION: That organizational level with responsibility for a major functional area of the incident, such as: operations, planning, logistics, finance/administration. The section is organizationally between branch and incident commander.

SECURITY MANAGER: Person responsible to the facilities unit leader for safeguarding property from loss or damage, and also personnel and their personal goods while at the incident.

SECURITY WEATHER WATCH: Observers are posted at one or more strategic locations in the proximity of a fire to detect and warn fire personnel of pending critical weather changes that might significantly affect the fire.

SEEN AREA: Ground, or vegetation growing thereon, that is directly visible under specified atmospheric conditions from an established or proposed lookout point or aerial detection flight route. (see also **VISIBLE AREA MAP**)

SEGMENT: A geographical area in which a task force/strike team leader or supervisor of a single resource is assigned authority and responsibility for the coordination of resources and implementation of planned tactics. A segment may be a portion of a division or an area inside or outside the perimeter of an incident. Segments are identified with arabic numbers, i.e., A-1, etc. and are not to be used as radio designators.

SELF-CONTAINED BREATHING APPARATUS (SCBA): Portable air (not oxygen) tanks with regulators which allow firefighters to breathe while in toxic smoke conditions. Usually rated for 30 minutes of service. Used primarily on fires involving structures or hazardous materials. (Syn. **AIR PACK**) (see also **RESPIRATOR**)

SEPARATION: (1) Spacing of aircraft while landing and taking off at airports to achieve safe and orderly movement in flight. (2) The horizontal and vertical spacing of aircraft working over or near a wildfire or other incident. (3) Spacing of personnel while performing line construction activities.

SERIOUS AIRCRAFT INCIDENT: An incident or malfunction that could adversely affect the safety of flight.

SEROTINY: Storage of coniferous seeds in closed cones in the canopy of the tree. Serotinous cones of lodgepole pine do not open until subjected to temperatures of 45° to 50° C (113° to 122° F), causing the melting of the resin bond that seals the cone scales.

SEROTINOUS CONE: In forest fire usage, a cone that remains closed on the tree for several years and requires heat from a fire to open the scales and release the seed.

SERVICE BRANCH: A branch within the logistics section responsible for service activities at the incident. Includes the communications, medical and food units.

SERVICE CENTER: Point of support for items not ordered through dispatch.

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.

SETTING OPPORTUNITY: The combination of physical, social and managerial attributes present on a particular land area which influences the experience obtained in a specific recreation activity such as hiking, skiing, or camping.

SEVERE BURN: Degree of burn in which all organic material is removed from the soil surface, and soil surface is discolored (usually red) by heat; organic material below the surface is consumed or charred.

SEVERITY FUNDING: Funds provided to increase wildland fire suppression response capability necessitated by abnormal weather patterns, extended drought, or other events causing abnormal increase in the fire potential and/or danger.

SEVERITY INDEX: A number that indicates the relative net effects of daily fire danger on the fire load for an area during a specified period, such as a fire season.

SHADED FUELBREAK: Fuelbreaks built in timbered areas where the trees on the break are thinned and pruned to reduce the fire potential yet retain enough crown canopy to make a less favorable microclimate for surface fires.

SHORT-LIFE SPECIES: A plant that grows several years before being replaced by a species more adapted to the changing site conditions.

SHORT-RANGE SPOTTING: Firebrands, flaming sparks, or embers are carried by surface winds, starting new fires beyond the zone of direct ignition by the main fire. The range of such spotting is usually less than 1/4 mile.

SHORT TAKEOFF OR LANDING (STOL) AIRCRAFT: An aircraft which has the capability of operating from a STOL runway in accordance with applicable airworthiness and operating regulations.

SHORT TAKEOFF OR LANDING (STOL) AIRSTRIP: Developed or undeveloped area that has been tested and will accommodate STOL aircraft.

SHORT-TERM: Persons or work for which employment is less than 12 months (excluding firefighters hired for a particular fire).

SHORT-TERM FIRE RETARDANT: Fire retardant that inhibits combustion primarily by the cooling and smothering action of water. Chemicals may be added to the water to alter its viscosity or retard its evaporation, thereby increasing its effectiveness.

SHOULDER CARRY: Method of carrying hose on the shoulders.

SHRUB: A woody perennial plant differing from a perennial herb by its persistent and woody stem; and from a tree by its low stature and habit of branching from the base.

SHUTOFF NOZZLE: Common type of fire hose nozzle permitting stream flow to be controlled by the firefighter at the nozzle rather than only at the source of supply.

SHUTOFF PRESSURE: Maximum pressure a centrifugal pump will attain when water flow is clamped or shut off.

SIAMESE: Hose fitting (preferably gated) for combining flow from two or more lines of hose into a single stream; one male coupling to two female couplings. (see also REVERSIBLE SIAMESE, WYE)

SIMMS BUCKET: Self-leveling helibucket slung under a helicopter which can be filled by hovering over a water source.

SIMPLE HOSE LAY: A hoselay consisting of consecutively coupled lengths of hose without laterals. The lay is extended by inserting additional lengths of hose in the line between pumps and nozzle. Also called single hose lay.

SIMULATION: A realistic portrayal of a task or operation that enables the operator/trainee to experience, under artificial conditions, situations likely to occur in actual performance of duty. Simulations are highly effective when dealing with hazardous or extremely expensive conditions.

SINGLE DOOR DROP: Technique whereby fire retardant is released from only one compartment of an air tanker.

SINGLE RESOURCE: An individual, a piece of equipment and its personnel complement, or a crew or team of individuals with an identified work supervisor that can be used on an incident.

SINGLE STAGE PUMP: Centrifugal pump with a single impeller.

SITE PREPARATION: Removal or killing of unwanted vegetation, residue, etc. by use of fire, herbicides, or mechanical treatment in preparation for reforestation and future management.

SITE PREPARATION BURNING: Fire ignited to expose adequate mineral soil and control competing vegetation until seedlings of the desired species become established.

SITUATION ANALYSIS: Analysis of factors which influence suppression of an escaped fire from which a plan of attack will be developed; includes development of alternative strategies of fire suppression and net effect of each.

SITUATION UNIT: Functional unit within the planning section responsible for the collection, organization and analysis of incident status information, and for analysis of the situation as it progresses. Reports to the planning section chief.

SIZE CLASS OF FIRE (As to size of wildfire):

- Class A - one-fourth acre or less
 - Class B - more than one-fourth acre, but less than 10 acres
 - Class C - 10 acres or more, but less than 100 acres
 - Class D - 100 acres or more, but less than 300 acres
 - Class E - 300 acres or more, but less than 1,000 acres
 - Class F - 1,000 acres or more, but less than 5,000 acres
 - Class G - 5,000 acres or more.
- (see also CLASS OF FIRE)

SIZEUP: The evaluation of the fire to determine a course of action for suppression.

SKID HOSE LOAD: Load of hose specially arranged on top of a standard hose load to permit dropping the working line at the fire.

SKID TRAIL: Any road or trail formed by the process of skidding logs from stump to landing.

SKIDDER UNIT: A self-contained unit consisting of a water tank, fire pump, and hose specially designed to be carried on a logging skidder for use in forest fire suppression.

SKIMMER: Any aircraft equipped to pick up water while moving on or over water.

SKY COVER: Amount of clouds and/or other obscuring phenomena that are detectable from the point of observation.

SLASH: Debris resulting from such natural events as wind, fire, or snow breakage; or such human activities as road construction, 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 fire hazard or for other purposes. (Preferred to Brush Disposal).

SLASH DISPOSAL BURN: (1) In fire suppression terminology, a fire spreading from any fire originally ignited to clear land or burn rubbish, garbage, crop stubble, or meadows (excluding incendiary fires). (2) In prescribed fire terminology, a fire used to dispose of scattered, piled, or windrowed dead woody fuel, generally in the absence of a merchantable overstory. Its purpose is to reduce unsightly fuel concentrations, or consume unwanted natural fuels to facilitate subsequent resource management or land use actions on the area.

SLING: A net attached by a lanyard to a helicopter cargo hook and used to haul supplies.

SLING LOAD: Any cargo carried beneath a helicopter and attached by a lead line and swivel.

SLING PSYCHROMETER: A hand operated instrument for obtaining wet and dry bulb temperature readings and, subsequently, relative humidity.

SLIP-ON TANKER: A tank, a live hose reel or tray, an auxiliary pump, and an engine combined into a single one-piece assembly which can be slipped onto a truck bed or trailer.

SLOPE CLASS: Part of the National Fire Danger Rating System (NFDRS). Code which designates the most common slope encountered in the primary fire problem area on a protection unit. Slope class 1 is 0-20%, slope class 2 is 21-40%, slope class 3 is 41-55%, slope class 4 is 56-74%, and slope class 5 is 75% or greater.

SLOPE PERCENT: The ratio between the amount of vertical rise of a slope and horizontal distance as expressed in a percent. One hundred feet of rise to 100 feet of horizontal distance equals 100 percent.

SLOPE WINDS: Small scale convective winds that occur due to local heating and cooling of a natural incline of the ground. (see also GENERAL WINDS and LOCAL WINDS)

SLOPOVER: A fire edge that crosses a control line or natural barrier intended to confine the fire. Also called breakover.

SLUG FLOW: The discharge of distinct pockets of water and air due to the insufficient mixing of foam concentrate, water, and air in a compressed air foam system.

SMALL AIRCRAFT: An aircraft of 12,500 pounds (5,669 kg) or less, maximum certificated takeoff weight.

SMOG: Generally considered only photochemical air pollution. Originally meant a combination of smoke and fog.

SMOKE: A term used when reporting a fire or probable fire in its initial stages. In fire control the following types of smokes are recognized: LEGITIMATE SMOKE, FALSE SMOKE, DRIFT SMOKE, INTERMITTENT SMOKE, SMOKE HAZE, and SMOKE COLUMN.

SMOKE CANDLE: A pyrotechnical product that emits smoke of a uniform color, like that of a small fire, and at a standard rate. NOTE: Used to check the visibility of a simulated small fire and to test the alertness of lookouts.

SMOKE CONCENTRATION: The weight of combustion products (in micrograms per cubic meter) found in a specified volume of air.

SMOKE EPISODE: Period when smoke is dense enough to be an unmistakable visual nuisance or hazard to driving or flying.

SMOKE HAZE: Haze caused by smoke alone and not by water vapor, dust, or other suspended matter.

SMOKE INTRUSION: Smoke from prescribed fire entering a designated area at unacceptable levels.

SMOKEJUMPER: A specifically trained and certified firefighter who travels to wildland fires by aircraft and parachutes to the fire.

SMOKE MANAGEMENT: Application of fire intensities and meteorological processes to minimize degradation of air quality during prescribed fires.

SMOKE PALL: Extensive, thick blanket of smoke spreading more or less horizontally from a fire.

SMOKE PLUME: The gases, smoke, and debris that rise slowly from a fire while being carried along the ground because the buoyant forces are exceeded by those of the ambient surface wind. (see also CONVECTION COLUMN)

SMOKE-SENSITIVE AREA (SSA): Area in which smoke from outside sources is intolerable, for reasons such as heavy population, existing air pollution, or intensive recreation or tourist use.

SMOKE TARGET: An area that may be adversely affected by smoke from a prescribed burn. Also called smoke sensitive area.

SMOKE VENT HEIGHT: Level, in the vicinity of the fire, at which the smoke ceases to rise and moves horizontally with the wind at that level.

SMOKEY BEAR: The symbol of the Cooperative Forest Fire Prevention Program since 1945. The program was originated by the Forest Service, USDA, in cooperation with the National Association of State Foresters and the Advertising Council to fight against the waste of natural resources resulting from forest fires, 90 percent of which are caused by people.

SMOKING (as a fire cause): Wildfires caused by smokers from matches, lighters, tobacco, or other smoking material.

SMOLDERING: A fire burning without flame and barely spreading.

SMOLDERING COMBUSTION: Combustion of a solid fuel, generally with incandescence and smoke but without flame.

SMOLDERING COMBUSTION PHASE: Combined processes of dehydration, pyrolysis, solid oxidation, and scattered flaming combustion and glowing combustion which occur after the flaming combustion phase of a fire; often characterized by large amounts of smoke consisting mainly of tars. Emissions are at twice that of the flaming combustion phase.

SMOLDERING PHASE: The overall reaction rate of the fire has diminished to a point at which concentrations of combustible gases above the fuel are too low to support a persistent flame envelope. Consequently, the temperature drops and gases condense. The smoke evolved during this phase is virtually soot-free, consisting mostly of tar droplets less than a micrometer in size.

SMUDGE: Spot in a fire or along a fire edge which has not yet been extinguished, and which is producing smoke; term is commonly used during the mopup stage of a fire.

SNAG: A standing dead tree or part of a dead tree from which at least the leaves and smaller branches have fallen. Often called a stub, if less than 20 feet tall. (see also STUB)

SNAKE RIVER VALLEY (SRV) CREWS: Predominantly Spanish-speaking suppression crews based in the Snake River Valley.

SNORKEL TANK: A fixed tank attached to the belly of the helicopter that has a pump-driven snorkel attached. The helicopter hovers over the water source with the end of the snorkel immersed, the pump then fills the tank.

SOFT SUCTION: Commonly accepted term for short length of large diameter soft hose used to connect a structural or wildland engine with a hydrant. No vacuum is involved because the hose is useful only when the engine receives water at a rate of flow in excess of the demand of the pump.

SOOT: Carbon dust formed by incomplete combustion.

SORTIE: Single round trip made by an air tanker from an air attack base to a fire and return.

SOUND WARBLER: A signaling device mounted on retardant aircraft which generates a tremulous siren sound to warn firefighters on the ground that a plane is approaching to drop retardant.

SOUNDING (Upper Air Sounding): A sampling of upper air conditions made by means of instruments and a small radio transmitter on a free balloon. Automatic radio signals originated by action of weather instruments are sent to a ground receiver. These signals are interpreted for use in analyzing and predicting upper air conditions over a wide area of the earth. Weather elements determined at a number of altitude points as the balloon rises are temperature, atmospheric moisture, pressure, wind direction and speed. Similar soundings may be made using fixed balloons or tethersondes. (see also RADIOSONDE)

SOURCE: A point, line, or area, at which mass or energy is added to a system, either instantaneously or continuously. Examples of sources in the context of air pollution are as follows: a smoke stack is a point source; a freeway is a line source; field or slash burning are area sources.

SPAN: Distance equal to the wingspread of the air tanker being used; used for corrections right or left of the flight path.

SPANNER: Metal wrench used to tighten and free hose connections.

SPAN OF CONTROL: The supervisory ratio of from three-to-seven individuals, with five-to-one being established as optimum.

SPARK ARRESTER: A device installed in a chimney, flue, or exhaust pipe to stop the emission of sparks and burning fragments.

SPECIAL VISUAL FLIGHT RULES (VFR): Aircraft operating in accordance with clearances within control zones in weather conditions less than the basic Visual Flight Rules weather minima.

SPECIES COMPOSITION: A term relating the relative abundance of one plant species to another using a common measurement; the proportion (percentage) of various species in relation to the total on a given area.

SPECIFIC HEAT: The heat required to raise the temperature of 1 kg of a substance one degree kelvin. The heat capacity of a system per unit mass; i.e., the ratio of the heat absorbed (or released) to the corresponding temperature rise (or fall).

SPEED OF ATTACK: Elapsed time from origin of fire to arrival of the first suppression force.

SPIKE-OUT: Standby crew in an area of expected high fire occurrence, generally on a day of critical fire weather.

SPLIT DROP: Retardant drop made from one compartment at a time from an air tanker with a multi-compartment tank.

SPLIT FLOW: A divergent wind field. Storms moving into a split field tend to lose strength. Winds are generally light in such a flow field.

SPOT BURNING: A modified form of broadcast slash burning in which the greater accumulations of slash are fired and the fire is confined to these spots. Sometimes called "Jackpot Burning" or "Jackpotting."

SPOT FIRE: Fire ignited outside the perimeter of the main fire by a firebrand.

SPOT FIRE TECHNIQUE: A method of lighting prescribed fires where ignition points are set individually at a predetermined spacing and with predetermined timing throughout the area to be burned.

SPOT WEATHER FORECAST: A special forecast issued to fit the time, topography, and weather of each specific fire. These forecasts are issued upon request of the user agency and are more detailed, timely, and specific than zone forecasts. (Usually special on-site weather observations are required for the forecasting office.) (see also GENERAL FIRE WEATHER FORECAST, INCIDENT WEATHER FORECAST)

SPOTTER: In smokejumping, rappelling, and paracargo operations, the individual responsible for selecting drop target and supervising all aspects of dropping smokejumpers, rappellers, or cargo.

SPOTTING: Behavior of a fire producing sparks or embers that are carried by the wind and which start new fires beyond the zone of direct ignition by the main fire.

SPRAY: Water applied through an orifice in finely divided particles to absorb heat and smother fire, to protect exposures from radiated heat, and to carry water toward otherwise inaccessible fire.

SPREAD COMPONENT: Part of the National Fire Danger Rating System (NFDRS). A rating of the forward rate of spread of the head of a fire.

SPREAD INDEX: A number used to indicate relative (not actual) rate of spread.

SPREAD INDEX METER: Device for combining measured ratings of various fire danger factors into numerical classes or rates of spread.

SPUR RIDGE: A small ridge which extends finger-like from a main ridge.

SQUALL: Sudden increase in wind speed to at least 17 mph (15 knots) that is sustained for at least 1 minute but not more than 5 minutes.

SQUALL LINE: Any nonfrontal line or narrow band of active thunderstorms extending across the horizon. It is of importance to fire behavior due to accompanying strong gusty winds and the possibility of such a line passing between regular weather observation stations without being reported. Also called line squall.

STABLE ATMOSPHERE: Condition of the atmosphere in which the temperature decrease with increasing altitude is less than the dry adiabatic lapse rate. In this condition, the atmosphere tends to suppress large-scale vertical motion. Also called stable air.

STABLE LAYER OF AIR: A layer of air having a temperature change (lapse rate) of less than dry adiabatic (approximately -5.4 degrees F per 1,000 feet) thereby retarding either upward or downward mixing of smoke. (see also INVERSION, ATMOSPHERIC STABILITY, and ATMOSPHERIC INVERSION)

STACK: Aircraft orbiting the rendezvous area; usually refers to vertical deployment: a 500-foot (150 m) altitudinal separation between aircraft.

STAGING AREA: Locations set up at an incident where resources can be placed while awaiting a tactical assignment on a three (3) minute available basis. Staging Areas are managed by the Operations Section.

STAGNANT CONDITIONS: Atmospheric conditions under which pollutants build up faster than the atmosphere can disperse them.

STAND REPLACING FIRE: Fire which kills all or most of the living overstory trees in a forest and initiates forest succession or regrowth.

STAND-BY CREW: A group of trained firefighters stationed at a dispatch point for quick, rapid deployment.

STANDARD COUPLING: Fire hose coupling with American National Standard (NH) threads.

STANDARD DRYING DAY: Part of the National Fire Danger Rating System (NFDRS). Day which produces the same net drying as experienced during a 24-hour period under laboratory conditions in which dry-bulb temperature is maintained at 80° F and relative humidity is maintained at 20%.

STANDARDS (NFPA): Standards of the National Fire Protection Association are frequently adopted by insurance agencies such as the National Board of Fire Underwriters as a basis for their regulations and used as a guide for municipal, state, or provincial laws, ordinances, and regulations.

STATE FOREST: Forests owned and administered by a state, and not by a federal government.

STATE IMPLEMENTATION PLAN (SIP): A plan required by the Clean Air Act and prepared by an Air Quality Regulatory Agency, which describes how the state will attain and maintain air quality so as to not violate National Ambient Air Quality Standards.

STATE OF WEATHER: A code which expresses the amount of cloud cover, kind of precipitation, and/or restrictions to visibility being observed at the fire danger station at basic observation time.

STATE PARK: An area established by the government of a state primarily for public recreation or for the preservation of unique natural or historic resources, administrative details varying widely. **NOTE:** Such parks may also be established by lesser administrative units, e.g. counties, municipalities, and also by large private owners.

STATIC PRESSURE: Water pressure head available at a specific location when no water is being used so that no friction loss is being encountered. Static pressure is that pressure observed on the engine inlet gauge before any water is taken from the hydrant.

STATIC WATER SUPPLY: Supply of water at rest which does not provide a pressure head for fire suppression but which may be employed as a suction source for fire pumps (e.g., water in a reservoir, pond, or cistern).

STATION PRESSURE: Pressure of the atmosphere at an assigned station location and elevation.

STATISTIC: The number that results from manipulating raw data according to a specified procedure; associated with samples.

STATISTICAL FIRE: In general, an actionable fire, on which any fire agency reports and maintains specified information (e.g., cause, date and point of origin, size, fire damage).

STATISTICS: The scientific study of numerical data based on natural phenomena.

STATUS/CHECK-IN RECORDER: Person responsible to the resources unit leader for checking-in all resources arriving at an incident. There is at least one check-in recorder at each check-in location.

STEP TEST: Five-minute test used to predict a person's ability to take in, transport, and use oxygen (aerobic capacity), the most important factor limiting the ability to perform arduous work.

STORM CENTER: The central point or area of a weather system associated with increased winds, clouds or precipitation (or any combination thereof).

STRAIGHT STREAM NOZZLE: A hose tip spout designed to provide the maximum reach of water without feathering.

STRAIGHT STREAM: Water or fire retardant projected directly from the nozzle (as contrasted with a fog or spray cone), provided by a solid stream orifice or by adjusting a fog jet into a straight stream pattern.

STRAINER: A wire or metal guard used to keep debris from clogging pipe or other openings made for removing water; used in pumps and on suction hose to keep foreign material from clogging or damaging pumps.

STRATEGY: The general plan or direction selected to accomplish incident objectives.

STRENGTH OF ATTACK: Number of resources used to attack a fire.

STRIKE TEAM: Specified combinations of the same kind and type of resources, with common communications, and a leader.

STRINGER: A narrow finger or band of fuel that connects two or more patches or areas of wildland fuel.

STRIP BURNING: (1) Burning by means of strip firing. (2) In hazard reduction, burning narrow strips of fuel and leaving the rest of the area untreated by fire.

STRIP FIRING: Setting fire to more than one strip of fuel and providing for the strips to burn together. Frequently done in burning out against a wind where inner strips are fired first to create drafts which pull flames and sparks away from the control line.

STRIP-HEAD FIRE: A series of lines of fire ignited near and up wind (or downslope) of a firebreak or backing fire so they burn with the wind (or upslope) toward the firebreak or backing fire.

STRUCTURE (vegetative): The form or appearance of a stand; the arrangement of the canopy; the volume of vegetation in tiers or layers.

STRUCTURE FIRE: Fire originating in and burning any part or all of any building, shelter, or other structure.

STRUCTURAL FIRE PROTECTION: The protection of homes or other structures from wildland fire.

STUB: A standing section of the stem of a tree, broken off at a height of less than 20 feet (6 meters), from which the leaves and most of the branches have fallen. (see also SNAG)

SUBSIDENCE: Downward or sinking motion of air in the atmosphere. Subsiding air warms due to compression. Increasing temperature and decreasing humidities are present in subsiding air. Subsidence results in a stable atmosphere inhibiting dispersion. Subsidence is generally associated with high atmospheric pressure.

SUBSIDENCE INVERSION: An inversion caused by subsiding air often resulting in very limited atmospheric mixing conditions.

SUCCESSION: The process of vegetational development whereby an area becomes successively occupied by different plant communities of higher ecological order.

SUCTION LIFT: In fire service, the number of feet (meters) of vertical lift from the surface of the water to the center of the pump impeller. In testing, e.g., fire department pumpers are required to discharge their rated capacity at 150 pounds (1034 kPa) net pump pressure at a 10-foot (3 meter) lift. The suction gauge would indicate the vertical suction lift in inches of mercury when the pump was primed with no appreciable water flowing.

SUNNY: Part of the National Fire Danger Rating System (NFDRS). The adjective classification of the sky when 5/10 or less of the sky is obscured by clouds.

SUNSET AND SUNRISE: The mean solar times of sunset and sunrise as published in the Nautical Almanac, converted to local standard time for the locality concerned.

SUPERVISOR: The ICS title for individuals responsible for command of a division or group.

SUPPLIES: Minor items of equipment and all expendable items assigned to an incident.

SUPPLY UNIT: Functional unit within the support branch of the logistics section responsible for ordering equipment and supplies required for incident operations.

SUPPORT BRANCH: A branch within the logistics section responsible for providing personnel, equipment and supplies to support incident operations. Includes the supply, facilities and ground support units.

SUPPORTING AGENCY: An agency providing suppression or other support and resource assistance to a protecting agency. (see also AGENCY, ASSISTING AGENCY, and COOPERATING AGENCY)

SUPPORTING MATERIALS: Refers to several attachments that may be included with an Incident Action Plan, e.g., communications plan, map, safety plan, traffic plan, and medical plan.

SUPPORT RESOURCES: Non-tactical resources under the supervision of the logistics, planning, finance/administration sections or the command staff.

SUPPRESS A FIRE: The most aggressive wildfire suppression strategy leading to the total extinguishment of a wildfire.

SUPPRESSANT: An agent that extinguishes the flaming and glowing phases of combustion by direct application to the burning fuel.

SUPPRESSION: All the work of extinguishing or confining a fire beginning with its discovery.

SUPPRESSION CREW: Two or more firefighters stationed at a strategic location for initial action on fires. Duties are essentially the same as those of individual firefighters.

SUPPRESSION FIRING: Intentional application of fire to speed up or strengthen fire suppression action on wildfires. Types of suppression firing include burning out, counter firing, and strip burning.

SURFACE AREA-TO-VOLUME RATIO: The ratio between the surface area of an object, such as a fuel particle, to its volume. The smaller the particle, the more quickly it can become wet, dry out, or become heated to combustion temperature during a fire.

SURFACE FIRE: Fire that burns loose debris on the surface, which includes dead branches, leaves, and low vegetation.

SURFACE FUEL: Fuels lying on or near the surface of the ground, consisting of leaf and needle litter, dead branch material, downed logs, bark, tree cones, and low stature living plants.

SURFACE HIGH: An area on the earth's surface where atmospheric pressure is at a relative maximum. Winds blow clockwise around highs in the Northern Hemisphere but, due to friction with the earth's face, tend to cross constant pressure lines away from the high center. Air is usually subsiding within a surface high. This causes warming due to air compression. This results in stable atmospheric conditions and light surface winds. (see also RIDGE)

SURFACE LOW: An area on the earth's surface where atmospheric pressure is at a relative minimum. Winds blow counter-clockwise around lows in the Northern Hemisphere but, due to friction with the earth's surface, tend to cross constant pressure lines toward the low center. Upon converging at the low center, air currents are forced to rise. As air rises it cools due to expansion. Cooling reduces its capacity to hold moisture; so cloudiness and precipitation are common in lows. If a low center intensifies sufficiently it will take on the characteristics of a storm center with precipitation and strong winds.

SURFACE TENSION: The elastic-like force at the surface of a liquid, tending to minimize the surface area and causing drops to form. (Expressed as Newtons per meter or dynes per centimeter; there are 1,000,000 dynes per Newton.)

SURFACE WIND: Wind measured at a surface observing station, customarily at some distance (usually 20 feet) above the average vegetative surface to minimize the distorting effects of local obstacles and terrain.

SURFACTANT: A surface active agent; any wetting agent. A formulation which, when added to water in proper amounts, will materially reduce the surface tension of the water and increase penetration and spreading abilities of the water.

SURGE: Rapid increase in flow which may result in an attendant pressure rise.

SURPLUS PROPERTY: Any excess personal property not required for the needs and the discharge of the responsibilities of all federal agencies as determined by the General Services Administration (GSA).

SURVIVAL ZONE: A natural or cleared area of sufficient size and location to protect fire personnel from known hazards while inside a fire shelter. Examples include rock slides, road beds, clearings, knobs, wide ridges, benches, dozer lines, wet areas, cleared areas in light fuels, and previously burned areas. These are all areas where you expect no flame contact or prolonged heat and smoke. (see also DEPLOYMENT ZONE, SAFETY ZONE)

SUSTAINED ATTACK: Continuing fire suppression action until fire is under control.

SWAMPER: (1) A worker who assists fallers and/or sawyers by clearing away brush, limbs and small trees. Carries fuel, oil and tools and watches for dangerous situations. (2) A worker on a dozer crew who pulls winch line, helps maintain equipment, etc., to speed suppression work on a fire.

SWAMPOUT: Act of clearing brush and other material from around the base of trees and where trees are to be bucked, prior to falling or bucking, as protection against saw kickback and to provide safe footing.

SWIVEL: An accessory used between the helicopter cargo hook and sling load to allow free turning of the load.

SYNOPTIC: Literally, at one time. Thus, in meteorological usage the weather conditions over an area at a given point in time.

SYNOPTIC CHART: In meteorology, any chart or map on which data and analyses are presented that describe the state of the atmosphere over a large area at a given moment in time.

SYSTEMATIC DISPATCHING: Pre-planned action system for initial attack utilizing packaged knowledge of available resources that will take action on a fire in a specific area under specified fire danger conditions; not intended for large fires or multiple-fire situations.

- T -

T-CARD: Cards filled out with essential information for each resource they represent. The cards are color-coded to represent different types of resources.

TACTICAL DIRECTION: Direction given by the operations section chief which includes the tactics appropriate for the selected strategy, the selection and assignment of resources, tactics implementation, and performance monitoring for each operational period.

TACTICS: Deploying and directing resources on an incident to accomplish the objectives designated by strategy.

TAG-ON: Connecting a (airtanker) drop to the forward part of a previous drop.

TAIL ROTOR: A small rotor, mounted on the tail of a conventional helicopter, which counteracts torque of the main rotor and provides a measure of directional control.

TAILBOARD: Back step of a wildland or structural fire engine.

TAILGATE SAFETY SESSION: Brief meetings held at the beginning, during, or end of an operational period to discuss new work assignments, new work methods, changes in plans, use of tools and equipment, and recognition and protection against work hazards that may be encountered.

TAKE-OFF AND LANDING CONTROLLER: Person responsible to the helibase manager for coordinating take-offs and landings of helicopters at a helibase and all helicopter movement around the helibase.

TANDEM: Two or more units of any one type working one in front of the other to accomplish a specific fire suppression job; the term can be used in connection with crews of firefighters, power pumps, bulldozers, etc.

TANK AND GATING SYSTEM: Tanks, doors, and release mechanism installed in aircraft for cascading fire retardants.

TANK TRAILER: Specialized trailer on which is mounted a tank, fire pump, hose, and ancillary equipment.

TARGET: Specific portion of the fire on which fire retardant or water is to be dropped by air tankers or helitankers. (see also DROP ZONE)

TASK FORCE: Any combination of single resources assembled for a particular tactical need, with common communications and a leader. A Task Force may be pre-established and sent to an incident, or formed at an incident.

TECHNICAL ADVISORY UNIT: This unit consists of advisors with special skills who are activated only when needed. Advisors may be needed in the areas of water resources, environmental concerns, resource use, and training.

TECHNICAL SPECIALISTS: Personnel with special skills that can be used anywhere within the ICS organization. These personnel may perform the same duties during an incident that they perform in their everyday job.

TEMPORARY FLIGHT RESTRICTION (TFR): A restriction requested by an agency and put into effect by the Federal Aviation Administration in the vicinity of an incident which restricts the operation of nonessential aircraft in the airspace around that incident.

TEN-HOUR TIMELAG FUEL MOISTURE (10-h TL FM): The moisture content of the 10-hour timelag roundwood fuels.

TEN-HOUR TIMELAG FUELS: Dead fuels consisting of roundwood 1/4 to 1-inch (0.6 to 2.5 cm) in diameter and, very roughly, the layer of litter extending from immediately below the surface to 3/4 inch (1.9 cm) below the surface.

TERRA TORCH ®: Device for throwing a stream of flaming liquid, used to facilitate rapid ignition during burn out operations on a wild fire or during a prescribed fire operation. (Syn. FLAME THROWER)

TEST FIRE: A prescribed fire set to evaluate such things as fire behavior, detection performance, control measures.

THERMAL BELT: An area of mountainous slope (characteristically the middle third), where the top of the radiation inversion intersects the slope. It typically experiences the least variation in diurnal temperatures and has the highest average temperatures and, thus, the lowest relative humidity. Its presence is most evident during clear weather with light wind.

THERMAL IMAGERY: The display or printout of an infrared scanner operating over a fire. Also called infrared imagery. (see also INFRARED)

THIN LAYER: Layer of clouds whose ratio of dense sky cover to total sky cover is 1/2 or less.

THIN SKY COVER: Sky cover through which higher clouds or the sky can be detected.

THREAD: The specific dimensions of screw thread employed to coupled fire hose and equipment. American National Standards (NH) have been adopted for fire hose couplings threads in 3/4, 1-1/2, 2-1/2, 3-1/2, 4, 5, and 6-inch sizes.

THREAT FIRE: Any uncontrolled fire near to or heading toward an area under organized fire protection.

THROW OUT: Soil pushed over the edge of the fireline by the fire plow. (see also BERM)

THUNDERSTORM: Localized storm characterized by one or more electrical discharge(s).

TIE-IN: Act of connecting a control line to another line or an intended firebreak.

TIME IN SERVICE: With respect to maintenance time records, the time from the moment an aircraft leaves the surface of the earth until it touches at the next point of landing.

TIMELAG (TL): Time needed under specified conditions for a fuel particle to lose about 63 percent of the difference between its initial moisture content and its equilibrium moisture content. If conditions remain unchanged, a fuel will reach 95 percent of its equilibrium moisture content after 4 timelag periods.

TIME-TEMPERATURE CURVE: Graph showing the increase in temperature at a specified point in a fire as a function of time, beginning with ignition and ending with burnout.

TIME UNIT: Functional unit within the finance/administration section responsible for recording time for incident personnel and hired equipment.

TINDER: Low density solids or aggregates of particles (e.g., duff, peat, rotten wood).

TIPS: Nozzle tips used to change orifice size of a hose stream.

TOOL AND EQUIPMENT SPECIALIST: Person responsible to the receiving/distribution manager for sharpening, servicing, and repairing hand tools.

TORCH: Ignition and subsequent envelopment in flames, usually from bottom to top, of a tree or small group of trees.

TORCHING: The burning of the foliage of a single tree or a small group of trees, from the bottom up. (Syn. CANDLING)

TOTAL FUEL: All plant material both living and dead that can burn in a worst case situation.

TOTAL MOBILITY: The capability to move, position, and utilize established forces to meet existing and anticipated fire protection needs nationwide.

TOTAL RISK: Part of the National Fire Danger Rating System (NFDRS). Sum of lightning and human-caused risk values; cannot exceed a value of 100.

TOTAL SUSPENDED PARTICULATE MATTER (TSP): Particles emitted from a pollution source regardless of size. Federal and state ambient and emission standards exist for TSP.

TOUCHDOWN PAD: That portion of a heliport or helispot where the helicopter lands.

TOXIC: Relating to a harmful effect by a poisonous substance on the human body by physical contact, ingestion, or inhalation.

TOXIC SUBSTANCE: A chemical or mixture that may present an unreasonable risk of injury to health or the environment.

TRACTOR: A rubber tired or tracked rider-controlled automotive vehicle, used in wildland fire management for pulling a disk or a plow to construct fireline by exposing mineral soil. (see also DOZER, PLOW LINE, TRACTOR PLOW)

TRACTOR PLOW: Any tractor with a plow for constructing fireline by exposing mineral soil. Also as a resource for typing purposes, a tractor plow includes the transportation and personnel for its operation. (see also DOZER, PLOW LINE, TRACTOR)

TRAFFIC PATTERN: Traffic flow that is prescribed for aircraft landing at, taxiing on, and taking off from, an airport; usual components of a traffic pattern are upwind leg, crosswind leg, downwind leg, base leg, and final approach.

TRAINING OFFICER: The chief or other officer under the agency or department responsible for organizing and conducting a complete training program for the suppression agency.

TRAINING SPECIALIST: Person responsible to the planning section chief for coordinating the use of trainees on the incident and for assuring that the trainees meet their training objectives and receive performance evaluation reports.

TRANSLATIONAL LIFT: Lift that is gained when a helicopter translates from a hover into forward flight; additional lift increases with increasing airspeed and is derived by the rotor system moving into undisturbed air.

TRANSPORT WIND SPEED: A measure of the average rate of the horizontal transport of air within the Mixing Layer. May also be the wind speed at the final height of plume rise. Generally refers to the rate at which emissions will be transported from one area to another. (see also MIXING LAYER, VENTILATION FACTOR)

TRANSPORTATION MAP: Base map of the planning unit showing all roads, trails, heliports, and airfields existing and programmed for construction.

TRAVEL TIME: Elapsed time from the departure of the initial attack crew until they arrive at and begin work on the fire.

TRAVEL TIME MAP: Map showing the time required for the initial attack crew to reach various parts of a protection unit from specified positions.

TREATMENT: A procedure whose effect is to be measured and compared with the effect of other procedures. Examples include a fall burned prescribed fire, an unburned "control", or an area burned with a specific ignition method or pattern.

TRENCH: A small ditch often constructed below a fire on sloping ground (undercut or underslung line) to catch rolling material.

TROUGH: An elongated area of relatively low atmospheric pressure, usually extending from the center of a low pressure system.

TRUCK TRAIL: Substantial transportation route for fire suppression motor vehicles, built prior to a fire. Also called fire road.

TRUE AIRSPEED: Velocity of an aircraft in its flight path relative to the air through which it is moving.

TRUE BEARING: Bearing by true north rather than magnetic north.

TURBULENCE: Irregular motion of the atmosphere usually produced when air flows over a comparatively uneven surface such as the surface of the earth; or when two currents of air flow past or over each other in different directions or at different speeds.

TURN THE CORNER: Contain a fire along a flank of the fire and begin containing it across the head. Refers to ground or air attack.

TURNAROUND TIME: Time used by an air tanker or helitanker to reload and return to the fire.

TURNOUT COAT: A coat with a fire resistant outer shell and a thermal and moisture barrier liner. Used primarily by structure firefighters. Also called fire coat.

TWO-WAY RADIO: Radio equipment with transmitters in mobile units on the same frequency as the base station, permitting conversation in two directions using the same frequency in turn.

TYPE: Refers to resource capability. A Type 1 resource provides a greater overall capability due to power, size, capacity, etc., than would be found in a Type 2 resource. Resource typing provides managers with additional information in selecting the best resource for the task.

- U -

ULTRA HIGH FREQUENCY (UHF-FM): Radio frequencies from 300 MegaHertz (MHz) to 3,000 MHz with a normal range of less than 50 miles. Radio frequency common to military aircraft and used in the logistics radio system. The most common frequencies used by fire and public safety are from 406 MHz to 512 MHz.

UNACCEPTABLE FIRE RISK: Level of fire risk above which specific action is deemed necessary to protect life, property and resources.

UNCONTROLLED AIRPORT: Airport not having an approved agency with radio communications to direct aircraft take-offs and landings.

UNCONTROLLED FIRE: Any fire which threatens to destroy life, property, or natural resources, and (a) is not burning within the confines of firebreaks, or (b) is burning with such intensity that it could not be readily extinguished with ordinary tools commonly available. (see also WILDFIRE)

UNDERBURN: A fire that consumes surface fuels but not trees and shrubs.

UNDERCUT LINE: A fireline below a fire on a slope. Should be trenched to catch rolling material. Also called underslung line. (see also CUP TRENCH, GUTTER TRENCH)

UNDERSTORY BURNING: Prescribed burning under a forest canopy.

UNICOM: VHF/AM aircraft radio frequencies assigned by the FAA for use in air-to-ground communications at uncontrolled airfields. The frequencies most commonly used are 122.8 MHz and 122.85 MHz.

UNIFIED AREA COMMAND: A unified area command is established when incidents under an area command are multijurisdictional.

UNIFIED COMMAND: In ICS, unified command is a unified team effort which allows all agencies with jurisdictional responsibility for the incident, either geographical or functional, to manage an incident by establishing a common set of incident objectives and strategies. This is accomplished without losing or abdicating authority, responsibility, or accountability.

UNIFORM FUELS: Fuels distributed continuously, thereby providing a continuous path for fire to spread.

UNIT: The organizational element of an incident having functional responsibility for a specific activity in the planning, logistics, or finance/administration activity.

UNITY OF COMMAND: The concept by which each person within an organization reports to one and only one designated person.

UNLINED FIRE HOSE: Hose commonly of cotton, linen, or synthetic fiber construction without rubber tube or lining, often used for wildfires because of its light weight and self protecting (weeping) characteristics; such hose is attached to first-aid standpipes in buildings. At a specified flow, friction loss in unlined hose of a stated diameter is about twice that of lined fire hose.

UPPER LEVEL (COLD) LOW: (Upper Level Disturbance, Cold Low Aloft) A circulation feature of the upper atmosphere where pressure, at a constant altitude, is lowest. Winds blow counter-clockwise around the center in an approximately circular pattern. Upper level lows are usually quite small. The mechanics of these upper lows is such that a pool of cool moist air always accompanies their development. There is often no evidence of low pressure at the earth's surface. An upper low may exist above a surface high pressure system.

UPPER LEVEL (COLD) TROUGH: (Trough, Trough Aloft, Upper Level [Cold] Low) An elongated area of relatively low pressure, at constant altitude, in the atmosphere. The opposite of an upper level ridge. Upper level troughs are usually oriented north-south with the north end open. That is, air currents moving from west to east around the earth flow around three sides of the trough then turn eastward rather than toward the west, as in the case of a closed circulation. A large upper level trough may have one or more small upper level closed low circulation systems within it.

UPPER LEVEL HIGH: (Upper High, High Aloft, Upper Level Ridge) A circulation feature of the upper atmosphere where pressure, at a constant altitude, is higher than in the surrounding region. Winds blow clockwise around an upper level high. Air in an upper level high is usually subsiding. This results in comparatively warm dry air with light winds over a large area. An upper level high may exist without there being high pressure at the earth's surface.

UPPER LEVEL RIDGE: (Upper Level High, Ridge Aloft) An elongated area of relatively high pressure, at a constant altitude, in the atmosphere. The opposite of an upper level trough. Upper level ridges are often oriented north-south, alternating between upper level troughs, however, during summer they may assume random orientations and vast dimensions.

URBAN: Area in which residences and other human developments form an essentially solid covering of the landscape, including most areas within cities and towns, subdivisions, commercial and industrial parks, and similar developments whether inside city limits or not.

URBAN INTERFACE: The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. (Syn. I-ZONE, WILDLAND/URBAN INTERFACE)

USE LEVEL: The appropriate ratio of liquid foam concentrate to water recommended by the chemical manufacturer for each class of fire, usually expressed as a percent (such as 0.5%).

USEFUL LOAD: Maximum computed gross weight minus equipped weight of a helicopter.

USER'S NETWORK FOR APPLIED MODELING OF AIR POLLUTION (UNMAP): EPA supplied program tape of dispersion models used for prevention of significant deterioration (PSD) and permitting of new pollution sources.

UTILIZATION RATE: The proportion of the current year's forage production that is removed by grazing or browsing animals. It may refer to particular species or to the entire plant community and is usually expressed as a percentage.

- V -

VALUES-AT-RISK: Natural resources, improvements, or other values that may be jeopardized if a fire occurs; estimated damages and benefits that may result from fires in a particular presuppression or suppression situation. (see also RESOURCES)

VAPOR SUPPRESSION: Creating a seal with foam which prevents a release of flammable vapors from fuels.

VARIABLE: Any changing characteristic; in statistics, a measurable characteristic of an experimental unit.

VARIABLE CEILING: A ceiling of less than 3,000 feet (900 m) which rapidly increases or decreases in height by one or more reportable values during the period of observation.

VARIABLE DANGER: Resultant of all fire danger factors that vary from day to day, month to month, or year to year (e.g., fire weather, fuel moisture content, condition of vegetation, variable risk)

VARIABLE SKY CONDITION: A sky condition that varies between reportable values of sky cover amounts during the period of observation.

VARIABLE VISIBILITY: A condition when the prevailing visibility is less than 3 miles (5 km) and rapidly increases and decreases by one or more reportable values during the period of observation.

VARIABLE WIND DIRECTION: Wind direction which varies by 60 degrees or more during the period of time the wind direction is being determined.

VECTORS: Directions of fire spread as related to rate of spread calculations (in degrees from upslope).

VEGETATIVE REGENERATION: Development of new aboveground plants from surviving plant parts, such as by sprouting from a root crown or rhizomes. Even if plants form their own root system, they are still genetically the same as the parent plant.

VEGETATIVE REPRODUCTION: Establishment of a new plant from a seed that is a genetically distinct individual.

VEHICLE FIRE: Fire originating in or on a vehicle or mobile equipment.

VENTILATION FACTOR: A numerical value relating the potential of the atmosphere to disperse airborne pollutants from a stationary source, calculated by multiplying the mixing height by the transport wind speed. (see also MIXING LAYER, TRANSPORT WIND SPEED)

VENTILATION INDEX: A measure of the volume rate of horizontal transport of air within the mixing layer, per unit distance, normal to the wind. Units are measured in square meters per second. The ventilation index is derived by multiplying mixing height and transport wind speed. It is similar to clearing index, except the values are less and decrease in value.

VERTICAL FUEL ARRANGEMENT: Fuels above ground and their vertical continuity, which influences fire reaching various levels or vegetation strata.

VERTICAL TEMPERATURE PROFILE: Plot of the actual dry-bulb temperature against height above the earth's surface, most commonly determined by a RAWINSONDE observation.

VERTICAL VISIBILITY: The distance that can be seen vertically upward into a surface based obscuring phenomenon.

VERY HIGH FREQUENCY (VHF-AM): Radio frequency range from 30 MHz to 299 MHz. The sub-bands most commonly used by fire are:

VHF-FM Lo band: Frequency Modulation 30 MHz - 80 MHz, of which fire frequencies are between 30 MHz and 50 MHz.

VHF-FM Hi band: Frequency Modulation 150 MHz - 174 MHz. This is the most widely used band by fire agencies.

VHF-AM: Amplitude Modulation. This band is commonly referred to as the "Victor or VHF" band. The frequency range is from 118 MHz to 136 MHz. The only authorized use of this band is for aviation. The FAA controls and assigns all frequencies within this sub-band.

VHF OMNIDIRECTIONAL RADIO RANGE (VOR): System of radio navigation in which any magnetic bearing relative to a special radio transmitter on the ground may be chosen and flown by an aircraft pilot.

VISUAL FLIGHT RULES (VFR) CONDITIONS: Basic weather conditions prescribed for flight under Visual Flight Rules: ceiling above 1,000 feet (300 m) and flight visibility in excess of 3 miles (5 km).

VIGOR: A subjective assessment of the health of individual plants in similar site and growing conditions; or a more specific measure based upon a specific facet of growth, such as seed stalk or tiller production per plant or per unit area.

VIRGA: Precipitation falling out of a cloud but evaporating before reaching the ground.

VISCOSITY: An indication in the ability of the foam to spread and cling, as well as to cling to itself, upon delivery.

VISCOUS WATER: Water that contains a thickening agent to reduce surface runoff; tends to cling to burning fuels and spread in layers that are several times thicker than plain water, thereby having an increased capacity to absorb heat, cool fuel, and exclude oxygen. Also called thickened water.

VISIBILITY: The greatest distance at which selected objects can be seen and identified, or its equivalent derived from instrumental measurements.

VISIBILITY DISTANCE: Maximum distance at which a smoke column of specified size and density can be seen and recognized as smoke by the unaided eye.

VISIBLE AREA MAP: Map showing the different classes of visible area covered by a lookout point or points; may differentiate between seen areas, indirectly visible areas, and blind areas, or only between seen areas and blind areas. Also called seen area map. (see also SEEN AREA)

VISUAL RANGE: Maximum distance at which a given object can just be seen by an observer with normal vision.

VISUAL RESOURCE MANAGEMENT (VRM): The inventory and planning actions taken to identify visual values and to establish objectives for managing those values; and the management actions taken to achieve the visual management objectives.

VISUAL RESOURCE MANAGEMENT CLASSES: Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. There are four classes. Each class has an objective which prescribes the amount of change allowed in the characteristic landscape.

VISUAL RESOURCES: The visible physical features on a landscape (e.g., land, water, vegetation, animals, structures and other features).

VOLATILES: Readily vaporized organic materials which, when mixed with oxygen, are easily ignited.

VOLUNTEER FIRE COMPANY: A fire department company or a response unit, the members of which are not paid.

VOLUNTEER FIRE DEPARTMENT (VFD): A fire department of which some or all members are unpaid.

VOLUNTEER FIREFIGHTER: Legally enrolled firefighter under the fire department organization laws who devotes time and energy to community fire service without compensation other than Worker's Compensation or other similar death and injury benefits.

VORTEX TURBULENCE: Miniature whirlwinds trailing from the wingtips of any aircraft in flight. Vortex will be in the form of a horizontal whirlwind with velocities up to 25 mph (40 km) per hour or more. Also created by action of rotor blades on helicopters; these whirlwinds tend to move downward toward the ground. If an aircraft flies low over a fire, vortices may reach the ground and suddenly cause violent and erratic fire behavior.

- W -

WARM FRONT: The leading edge of a relatively warm air mass which moves in such a way so that warm air displaces colder air. Winds associated with warm frontal activity are usually light and mixing is limited. The atmosphere is relatively stable when compared to cold front activity.

WATER BAR: A shallow channel or raised barrier, e.g., a ridge of packed earth or a thin pole laid diagonally across the surface of a road or trail so as to lead off water, particularly storm water. (Frequently installed in firelines on steep slopes to prevent erosion.)

WATER EXPANSION PUMPING SYSTEM (WEPS): Apparatus utilizing an air compressor and positive displacement pump coupled to the same engine, plumbed to a non-pressurized tank, for producing foam. The operation involves injecting compressed air into a liquid stream containing a suitable foaming agent.

WATER EXPANSION SYSTEM (WES): Apparatus utilizing a pressurized tank, hose, and nozzle for producing foam by injection of compressed air or gas into a liquid stream downstream from the pumping source. The liquid stream must contain a suitable foaming agent.

WATER HAMMER: A force created by the rapid acceleration or deceleration of water, commonly created by opening or closing a valve too quickly. Pressures developed in a water hammer, proportional to the mass multiplied by the square of the velocity, can damage a pipe or hose.

WATER RESOURCES SPECIALIST: Person responsible to the planning section chief for collecting information of water resources in and adjacent to the incident area, determining water use requirements of firefighting resources, and providing input to the Incident Action Plan about available water resources and/or anticipated shortages.

WATER SOURCE: Any strategically located supply of water that is readily available for pumps, tanks, trucks, helicopters, or fire camp use.

WATER SUPPLY MAP: A map showing location of supplies of water readily available for pumps, tanks, trucks, camp use, etc.

WATER TENDER: Any ground vehicle capable of transporting specified quantities of water.

WATER THIEF: A type of bleeder valve designed for installation at convenient points in hose lines to permit drawing off water for filling backpack pumps or other use without interfering with pump or nozzle operation.

WATERSHED: Geographic area that drains into a common water course.

WAVE: A disturbance that transfers energy from one point to another point and may take the form of a deformation of pressure or temperature. In the atmosphere such disturbances may result in major storms or merely result in changes in cloud, wind and temperature conditions. Development of a wave on a front usually slows the advance of the front due to transfer of energy to the wave development and movement.

WEATHER ADVISORY: In aviation forecasting, an expression of hazardous weather conditions not predicted in the zone weather forecast, as they affect the operation of air traffic.

WEATHER INFORMATION AND MANAGEMENT SYSTEM (WIMS): An interactive computer system designed to accommodate the weather information needs of all federal and state natural resource management agencies. Provides timely access to weather forecasts, current and historical weather data, the National Fire Danger Rating System (NFDRS), and the National Interagency Fire Management Integrated Database (NIFMID).

WEATHER OBSERVER: Person responsible to the situation unit leader for collecting current weather data and information at the incident and providing them to an assigned meteorologist, fire behavior specialist, or the situation unit leader.

WEIGHT: As used in vegetation inventory and monitoring, the total biomass of living plants growing above the ground in a given area at a given time.

WEIGHTED MONTHLY OCCURRENCE: Part of the National Fire Danger Rating System (NFDRS). Number used to determine seasonal risk class for a protection unit, calculated by multiplying peak monthly average by two and adding seasonal monthly average.

WET FOAM: A low expansion foam type with few and varied bubbles and rapid drain time which is used for rapid penetration and fire extinguishment.

WET LINE: A line of water, or water and chemical retardant, sprayed along the ground, and which serves as a temporary control line from which to ignite or stop a low-intensity fire.

WET STORAGE: Fire retardants mixed with water and stored in tanks at air attack bases for immediate use by air tankers. (see also DRY STORAGE)

WET WATER: Water with added chemicals, called wetting agents, that increase water's spreading and penetrating properties due to a reduction in surface tension.

WET-BULB DEPRESSION: The difference between the wet and dry-bulb temperatures recorded by a psychrometer; used in conjunction with the dry-bulb temperature as a measure of the relative humidity of the air.

WET-BULB TEMPERATURE: The lowest temperature to which air can be cooled by evaporating water into it at a constant pressure when the heat required for evaporation is supplied by the cooling of the air. It is measured by the wet bulb thermometer, which usually employs wetted wicking on the bulb as a cooling (through evaporation) device.

WET-BULB THERMOMETER: In a psychrometer, the thermometer with its bulb covered with a jacket of clean muslin which is saturated with distilled water before an observation.

WETTING AGENT: A chemical that when added to water reduces the surface tension of the solution and causes it to spread and penetrate exposed objects more effectively than the untreated water.

WETTING RAIN: A widespread rain that over an extended period of time significantly reduces fire danger. One-tenth of an inch may be sufficient to reduce fire danger in grass fuel models. One half inch may be necessary for timber fuels under closed canopies.

WHEELBASE: The distance from the centerline of the front axle to the centerline of the rear axle. For a tandem rear axle vehicle the center line is midpoint between the centers of the two rear axles.

WIDOW-MAKER: A loose limb or top or piece of bark lodged in a tree, which may fall on anyone working beneath it.

WILDERNESS: An area established by the Federal Government and administered either by the Forest Service, USDA or National Park Service, Fish & Wildlife Service, or Bureau of Land Management, in order to conserve its primeval character and influence for public enjoyment, under primitive conditions, in perpetuity.

WILDERNESS INVENTORY: An evaluation of the public lands in the form of a written description and map showing those lands that meet the wilderness criteria as established under section 603(a) of FLPMA and section 2(c) of the Wilderness Act, which will be referred to as wilderness study areas (WSA's).

WILDERNESS STUDY AREA (WSA): A roadless area or island that has been inventoried and found to have wilderness characteristics as described in section 603 of FLPMA and section 2(c) of the Wilderness Act of 1964 (78 Stat. 891).

WILDFIRE: A fire occurring on wildland that is not meeting management objectives and thus requires a suppression response. (see also UNCONTROLLED FIRE, INTERAGENCY MANAGEMENT REVIEW TEAM)

WILDLAND: An area in which development is essentially non-existent, except for roads, railroads, powerlines, and similar transportation facilities. Structures, if any, are widely scattered.

WILDLAND FIRE: Any fire occurring on the wildlands, regardless of ignition source, damages or benefits.

WILDLAND/URBAN INTERFACE: The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. (Syn. I-ZONE, URBAN INTERFACE)

WIND: The horizontal movement of air relative to the surface of the earth.

WIND DIRECTION: Compass direction from which wind is blowing.

WIND-DRIVEN WILDLAND FIRE: A wildland fire that is controlled by a strong consistent wind.

WINDFALL: Tree that has been uprooted or broken off by wind.

WIND PROFILE: A chart of wind speed in relation to height, most commonly determined by a pilot balloon observation.

WINDROW BURNING: Burning slash that has been piled into long continuous rows. Also includes wildfire in vegetation planted to protect improvements or agriculture.

WINDS ALOFT: Generally, wind speeds and wind directions at various levels in the atmosphere above the domain of surface weather observations.

WIND SHEAR: A variation in wind speed and/or direction in a layer of the atmosphere or

between layers. The variation may be in the horizontal or vertical dimensions and may result in significant turbulence depending upon the magnitude of the wind speed/direction differences. A strong wind shear may act like an inversion and inhibit plume rise. It may also fracture the smoke plume, not allowing smoke to rise much above terrain levels. A strong horizontal anticyclonic shear results in downward motion and may bring smoke aloft to the surface.

WIND SHIFT: A change in the average wind direction of 45 degrees or more which takes place in less than 15 minutes if the wind speed during this period is 6 knots (3 m/s) or greater.

WIND SPEED: (1) Rate of horizontal motion of air past a given point. (2) (NFDRS) Wind, in mph, measured at 20 feet above ground, or above the average height of vegetation, and averaged over at least a 10-minute period. Also called wind velocity.

WINDSPEED METER: A handheld device which indicates wind speed, usually in miles per hour.

WIND VECTORS: Wind directions used to calculate fire behavior.

WOODY VEGETATION CONDITION: Part of the National Fire Danger Rating System (NFDRS). A code reflecting the moisture content of the foliage and small twigs [less than 1/4 inch (0.6 cm)] of living woody plants.

WOVEN JACKET FIRE HOSE: Fire hose of conventional construction, woven on looms from fibers of cotton or synthetic fibers. Most fire department hose is double jacketed (i.e., it has an outer jacket protecting the inner one against wear and abrasion).

WYE: A hose connection with two outlets permitting two connections of the same coupling diameter to be taken from a single supply line. (see also REVERSIBLE SIAMESE, SIAMESE)

- Z -

ZONE WEATHER FORECAST: A portion of the general fire weather forecast issued on a regular basis during the normal fire season specifically to fit the requirements of fire management needs; i.e., time, areas, and weather elements. These zones or areas are a combination of administrative and climatological areas, usually nearly the size of an individual forest or district.