

APPENDIX A - FACTS SHEETS (0600)

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AGENCY OVERVIEW

THE NATIONAL PARK SERVICE

The National Park System began in 1872 with the establishment of Yellowstone National Park. An act signed on August 25, 1916, by Congress established the National Park Service under the Department of the Interior. The Act says in part:

"The service thus established shall promote and regulate the use of the Federal areas known as national parks, monuments and reservations...by such means and measures as confront to the fundamental purpose of the said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

The National Park System currently encompasses more than 370 areas. The diversity of the parks is reflected in the variety of titles given them. These include such designations as national park, national preserve, national monument, national memorial, national historic site, national seashore, national riverway, national battlefield park, and national recreation area.

The primary focus of the National Park Service is to protect and conserve the lands, natural and cultural features with which we have been entrusted. In those areas with natural features the National Park Service is charged with promoting natural processes including the role of fire in the ecosystem.

Fire Management

The National Park Service's philosophy regarding the role of fire within the ecosystem is to allow it within extremely well defined parameters. The Service acknowledges that fire occurred naturally before the interceding of man. Furthermore, fire played an important role in natural processes to restore many species of plants, who are dependent on fire as part of their cycles. The effects of fire on plant species has a direct correlation to the survival and health of many animal populations as well.

The National Park Service has developed a program of fire management to allow for the return of fire in our national parks within strict parameters. Each National Park Service area which is involved in wild fire is required to develop a fire management plan within which the conditions, restrictions and policies are outlined to allow for fire under either natural or prescribed conditions. Taken into account for each decision to either allow a fire to continue to burn or to apply suppression efforts are a number of factors. These include past, current, and predicted weather conditions; threats to important natural features and manmade structures; threats to adjacent land values to other agencies or private interests; and, frequently, whether the fire was started by man or by nature.

In the event a decision is made to apply fire through planned, prescribed burns or to allow a natural lightning fire to continue to burn, the National Park Service monitors the fire activity very closely and records a variety of scientific data regarding fire behavior and weather conditions. At any point in time a decision may be made to apply suppression activities to the fire to either confine it or to extinguish it.

Suppression efforts on National Park Service lands are applied utilizing the philosophy found within the agency's founding act. That is to protect and preserve the resources. Unlike other land management agencies, both federal and state, the National Park Service does not permit vehicles to be driven off of established roadways. This applies to management activities as well as to public use. For this reason the use of bulldozers and other vehicles off of roadways during fires are forbidden except in situations where threats to structures or adjacent land values are present.

The National Park Service does not permit timber activities or, generally, other land uses such as grazing or mining on its lands. In other words, the National Park Service does not depend upon multiple use activities for funding as do other land management agencies. The U. S. Forest Service, Bureau of Land Management, and other agencies have Congressionally, or state-mandated functions which require a totally different philosophy and approach to fire and its effects on the resources for which those agencies are charged with managing. It is this difference in policy and philosophy which is frequently misunderstood by the public when fires occur and different agencies react at varying levels of aggression in their suppression efforts.

AIR TANKERS

FIRST AIR DROP IN 1930

ALL CDF AND F.S. AIR TANKERS ARE UNDER CONTRACT
GENERALLY IN CALIFORNIA EACH SEASON (INCLUDES F.S. AIR TANKERS)
VARIES BY AIRCRAFT--ANYWHERE FROM 800 TO 3,000 GALLONS USED
PRIMARILY TO HOLD FIRE SMALL UNTIL GROUND FORCES ARRIVE. KNOCK
DOWN SPOT FIRS. ASSIST IN LINE CONSTRUCTION, ETC.

HISTORY

The idea for air tankers started in 1931. The first recorded waterdrop by an air tanker occurred in 1930 when a veteran firefighter and a bush pilot teamed up in a Ford trimotor plane. The fire chief pushed a wooden keg of water out the door of the plane at an altitude of 100 feet and traveling at 90 mph. Although the results were not encouraging, it was at least a start. Ever since that early experiment, firefighters have tried to develop practical ways of airdropping liquids.

The modern air tanker system was not devised until 1954 when Operation Firestop (a research program supported by state and federal agencies and private industry) explored new fire control methods which might prove practical. It was during Operation Firestop that a Navy (TBM) torpedo bomber with a special water tank in its belly was tried and proved to be successful. The first operational air tanker was developed on the Mendocino National Forest by the Willows Flying Service in 1955. The first tests were with a 125 gallon tank on an agricultural biplane. The first "air drop" made on a going fire was on the Mendenhall Fire on the Mendocino National Forest on August 12, 1955. In 1956 there were seven air tankers in operation in the State. Today, the Department of Forestry and Fire Protection and the Forest Service have an extensive air attack program which can be attributed to these early tests.

USES OF AIR TANKERS

Air tankers and fire retardants have been effective in providing close serial support to ground crews in the following areas:

1. Holding small fires until ground crews arrive.
2. Knocking down spot fires.
3. Cooling down hot spots so that men can enter an area and work safely.
4. Laying a fire-retardant line in advance of a fire.
5. Reducing the probability of fire jumping into tree tops.
6. Strengthening existing firelines.
7. Assisting in critical fireline construction.
8. Fireproofing local areas where spot fires are possible.

Air application of fire retardants is not effective:

1. On rolling fire in heavy brush or timber.
2. In winds above 30 miles per hour.
3. On targets located in the bottom of steep, narrow canyons, or other places which lack maneuvering space for aircraft.
4. Under smoke conditions with poor visibility.
5. At night.

TYPE OF AIRCRAFT

Following is a listing of the air tankers normally found in California. Other models of air tankers are used, but not usually found in California.

	<u>No. of Gal. Restaurant</u>	<u>Cruise Speed Knots*</u>	<u>Remarks</u>
Grumman S-2	800	190	CDF only
Douglas DC-4	2,000	195	
Douglas DC-8	2,000	240	
Douglas DC-7	3,000	250	
Boeing B-17G	1,800	180	
Lockheed C-130	3,000	310	

(Operated by National Guard - Air Assisted retardant release system - See MAFFS Fact Sheet)

*Cruise speeds greatly depend on fire location. For example, cruise speeds are normally slower due to an aircraft normally having to climb to reach the fire area.

The air tankers under contract in the State are a highly mobile force. They can be shifted anywhere in the State when needed.

AIR TANKER BASES

ALL BASES HAVE MIXED RETARDANT (SLURKY) STORED AND READY TO DO PLUS A LARGE SUPPLY OF DRY READY TO BE MIXED. CAPABILITY OF BASES VARY--16,000 TO 60,000 GALLONS. BASES ARE OPERATED BY PRIVATE CONTRACTORS, CDF, U.S.F.S. OR A COMBINATION.

Air Tanker bases are located throughout the State to support the air tanker operations. Each base has fixed storage capacity for retardant and also has a reserve of dry chemical that can be mixed into retardant fairly rapidly. These California Department of Forestry, or by a private contractor. Many bases in the State are joint operations with the CDF and Forest Service.

Most bases have a minimum pump capacity of 6000 gallons per minute. Following is a list of the refilling times for air tankers currently used.

AIRCRAFT	CAPACITY	FILLING TIME
S-2	800	1 minute, 20 seconds
DC-4	2,000	3 minutes, 20 seconds
DC-6	2,600	5 minutes
DC-7	3,000	5 minutes
B-17	1,800	3 minutes
C-130	3,000	See MAFFS Fact Sheet

AIR ATTACK BASE INFORMATION

BASE TELEPHONE

BISHOP RELOAD (714) 878-3300
2957 Birch Street
Bishop, CA 93514

FOX FIELD (805) 948-2125
34146 Longview Rd.
Pearblossom, CA 93553

RYAN (714) 658-8436
36-850 Stetson Avenue
Hemet, CA 92065

COLUMBIA (209) 291-6435
P. O. Box 390
Columbia, CA 95310

FRESNO (209) 291-6435
2301 Airways Avenue N.
Fresno, CA 93727

PORTERVILLE (209) 784-0828
1893 S. Newcomb Street
Porterville, CA 93257

HOLLISTER (408) 637-5456
P. O. Box 741
Hollister, CA 95023

PASO ROBLES (805) 967-6115
Rt. 1, Box 221-A
Paso Robles, CA 93930

GOLETA (805) 967-6115
Santa Barbara
Municipal Airport
Goleta, CA 93017

CHESTER RELOAD (916) 258-2767
% Lassen N. F.
707 Nevada Street
Susanville, CA _____

Air Attack Base Information
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REDDING (916) 224-2408
1050 Parkview Avenue
Redding, CA 96001

BASE TELEPHONE

CHICO (916) 895-4004
% CDF
1350 Invader Street
Chico, CA 95926

MINDEN (702) 784-5338
% Toyiyabe N.F.
111 N. Virginia Street
Reno, NV 89503

GRASS VALLEY (916) 272-1606
P. O. Box 96
Nevada City, CA 95959

STOCKTON RELOAD (209) 982-1678
% P. O. Box 390
Columbia, CA 95310

ROHNERVILLE (707) 725-4572
Bus.
2420 Airport Way
Hotline (707) 725-3629
Fortuna, CA 95540

UKIAH (707) 462-6102
Bus.
1475 S. State Street
Hotline (707) 462-6539
Ukiah, CA 95842

SONOMA COUNTY (707) 544-4422
2235 Airport Blvd. Green - 89
Santa Rosa, CA 95401

MEDFORD Contact Klamath
N. F.
% Rouge River N. F. (916) 842-2741
P. O. Box 520
Medford, Oregon

KLAMATH FALLS RELOAD (503) 882-7761
% Winema N. F. Green - 3034
P. O. Box 1390
Klamath Falls, OR 97601

CALIFORNIA CONSERVATION CORPS

The CCC is the result of many people, including Governor George Deukmejian, working together to provide California's youth with an opportunity to develop in a healthy environment. The CCC employs people ages 18 through 20. They live in Base Centers or Camps throughout California. This program was started in 1976.

Some of the tasks a Conservation Crew undertakes includes: building trails, clearing streams, developing public parks, assisting in emergency and disaster relief work and fighting forest fires. The CCC fire assignments are usually in camp jobs and possibly mop-up activities. Corpsmembers also receive training in first aid, outdoor survival skills, ecology and natural resources.

The Corps works along with local governments, various agencies, and public and private groups dedicated to the protection of California's valuable natural resources. The CCC selects projects that serve the public and provide opportunities for education and development of new skills for its members.

JUNE 15, 1984

CDF ACRONYMS AND INITIALS

(an incomplete list)

The acronyms and abbreviations in this list were collected from letters, reports and jargon used by the Department of Forestry and Fire Protection. As you can see, the list is quite extensive, and new ones seem to develop every day.

This list is not intended to endorse or encourage the use of acronyms or abbreviations; it is merely a guide to help you when you run across them.

AA	Affirmative Action
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ACA	Assembly Constitutional Amendment
ACL	Associated California Loggers
ACP	Agricultural Conservation Program
ACR	Assembly Concurrent Resolution
AFA	American Forestry Association
AFFIRMS	Administrative and Forest Fire Information Retrieval and Management System
AFL/CIO Organizations	American Federation of Labor/Congress of Industrial
AG	Attorney General
AGC	Associated General Contractors
AIU	Arson Investigation Unit (CDF)
AJR	Assembly Joint Resolution

ALDS	Automatic Lightning Detection System
APandD	Area Planning and Development (U.S.)
APCO Officers	Associated Public-Safety Communications
APTR System)	Attendance and Program Time Reporting (CDF) (formerly called PTRS: Program Time Reporting
ARB	Air Resources Board
ARES	Amateur Radio Emergency Service
ASAP	As Soon As Possible
ASCS Service (U.S.)	Agricultural Stabilization and Conservation
ASTM	American Society for Testing and Materials
ATF	Alcohol, Tobacco and Firearms
ATO	Administrative Time Off
ATSS	Automatic Telecommunications Switching System
AWWS	American Water Works Standard
AWS	American Welding Society
BCDC	(San Francisco) Bay Conservation and Development Commission
BCP	Budget Change Proposal
BIA	Bureau of Indian Affairs (U.S.)
BLEVE	Boiling Liquid Expanding Vapor Explosion
BLM	Bureau of Land Management (U.S.)
BMCS	Bureau of Motor Carrier Safety
BMP	Best Management Practice

BNE	Bureau of Narcotics Enforcement
BOF	Board of Forestry
BOR	Bureau of Reclamation (U.S.)
BR	Budget Revision
CAC	California Administrative Code
CALAVCO	California Aviation Committee
Cal Expo	California Exposition and State Fair
Cal/OSHA	California Occupational Safety and Health Administration
CALSTARS	California State Accounting and Reporting System
CALTRANS	California Department of Transportation
CAMP	Campaign Against Marijuana Plantations
CAPCOA	California Air Pollution Control Officers Association
CARCD	California Association of Resource Conservation Districts
CBEC	Collective Bargaining Executive Caucus
CCA	California Cattlemen's Association
CCAI	California Conference of Arson Investigators
CCC	California Conservation Corps
CCOA	California Correctional Officers Association
CCP	Conservation Camp Program
CDF	California Department of Forestry and Fire Protection

CDFEA	California Department of Forestry Employees Association
CDFFA	California Department of Forestry Fire Academy
CE	Cooperative Extension
CEA	Career Executive Assignment
CEQA	California Environmental Quality Act
CETA	Comprehensive Employment and Training Act
CFAA	Cooperative Forestry Assistance Act (Federal)
CFCA	California Fire Chiefs Association
CFD	County Fire Department
CFFJAC	California Fire Fighter Joint Apprenticeship Committee
CFFP	Cooperative Forest Fire Program
CFIP	California Forest Improvement Program
CFIRS	California Fire Incident Reporting System
CFIS	California Fiscal Information System
CFIT	California Forum on Information Technology
CFM	Cooperative Forest Management
CFP	Cooperative Fire Protection
CFPA	California Forest Protective Association
CFR	Code of Federal Regulations
CFSCC	California Fire Services Coordinating Council
CHP	California Highway Patrol
CITAB	California Information Technology Advisory Board

CLC	California Labor Code
CLETS	California Law Enforcement Telecommunications System
CLFA	California Licensed Foresters Association
CM2	Clarke-McNary Act - Section 2 (Cooperative Fire Control)
CMP	Chaparral Management Program
CNG	California National Guard
CNH	California-Nevada-Hawaii Forest Fire Council
COD	Career Opportunity Development
COE	Corps of Engineers (U.S.)
COLA	Cost-of-Living Adjustment
COMP	Council of Management Perquisites (CDF)
COMPLAC	Communications Planning Committee
CPOA	California Peace Officers Association
CRAC	California Rural Affairs Council
CRMP	Coordinated Resource Management and Planning
CRP	Coordinated Resource Plan
CSA	County Service Area (followed by a number)
CSAC	County Supervisors Association of California
CSD	Community Services District
CSEA	California State Employees Association
CSUS	California State University System
CTO	Compensating Time Off

CUFC	California Urban Forests Council
CWETA	California Worksite Education and Training Act
CWGA	California Wool Growers Association
CWT	Communications Working Team (See NWCG)
CYA	California Department of the Youth Authority
DACs	Disaster Assistance Centers
dba	doing business as
DCP	Data Collection Platform
DEA	Drug Enforcement Administration
DED	Dutch Elm Disease
DF	Department of Forestry (Litigation Case Number)
DFG	Department of Fish and Game
DGS	Department of General Services
DHS	Department of Health Services
DIR	Department of Industrial Relations
DMG	Division of Mines and Geology (Department of Conservation)
DOF	Department of Finance
DOG	Division of Oil and Gas (Department of Conservation)
DOJ	Department of Justice
DOS	Deficiency Objective Statement
DOSH	Division of Occupational Safety and Health
DOT	Department of Transportation (Federal)

DPA	Department of Personnel Administration
DPO	Departmental Personnel Office (CDF)
DPR	Department of Parks and Recreation
DPV	Draft Purchase Voucher
DSF	Demonstration State Forest
DTAC	District Technical Advisory Committee
DVI	Deuel Vocational Institution
DWR	Department of Water Resources
DWR	Department of Water Resources
EAC	Executive Advisory Council
EAP	Energy Assessment Program (Dept. of General Services)
EAR	Employee Action Request
EARS	Emergency Activity Reporting System
EBR	Enrolled Bill Report
ECC	Emergency Command Center
EDA	Employee Development Appraisal
EDD	Employment Development, Department of
EDP	Electronic Data Processing
EEOC	Equal Employment Opportunity Committee
EEP	Estimated Erosion Potential
E/ER	Employer-Employee Relations
EHR	Erosion Hazard Rating

EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ELP	Environmental License Plate (Fund)
ELMS	Emergency Medical Services
EMSA	Emergency Medical Services Authority
EMT	Emergency Medical Technician
EOT	Employee Opportunity Transfer
EPA	Environmental Protection Agency (U.S.)
ERF	Energy And Resources Fund
ERMET	Environmental Resources Management Executive Trainee (Now called: Resources Agency Program Executive)
FAA	Federal Aviation Administration
FAE	Fire Apparatus Engineer
FBI	Federal Bureau of Investigation
FC	Fire Captain
FCC	Federal Communications Commission
FCCA	Forestry Conservation Communications Association
FCWT	Fire Chemicals Working Team (See NWCG)
FDAC	Fire Districts Association of California
FEES	Fire Economics Evaluation System
FEM	Forestry Equipment Manager
FEMA	Federal Emergency Management Agency
FEPP	Federal Excess Property Program

FERC	Federal Energy Regulatory Commission
FEWT	Fire Equipment Working Team (See NWCG)
FFFC	Federated Fire Fighters of California
FFS	Forest Fire Station
FIO	Fire Information Officer
FIP	Forestry Incentives Program
FIRESCOPE	Firefighting Resources of Southern California Organized for Potential Emergencies
FLC	Forest Landowners of California
FLIR	Forward Looking Infrared
FLRA	Federal Labor Relations Agency
FLSA	Fair Labor Standards Act
FMVSS	Federal Motor Vehicle Safety Standards
FOCUS	Fire Operational Characteristics Using Simulation
FOG	Field Operations Guide
FOSWT	Fire Operations Systems Working Team (See NWCG)
FPA	Forest Practice Act
FPD	Fire Protection District
FPO	Fire Prevention Officer
FRAP	Forest Resources Assessment Program
FRAPA	Forest Resources Assessment and Policy Act of 1977 (State)

FREDAC	Fire Research and Equipment Development Advisory Committee
FRIF	Forest Resources Investment Fund
FTWT	Fire Training Working Team (See NWCG)
FY	Fiscal Year
FYI	For Your Information
GAO	General Accounting Office (Federal)
GAR	Governor's Authorized Representative
GFA	General Forestry Assistance
GIS	Geographic Information System
GSA	General Services Administration (Federal)
HEM	Heavy Equipment Mechanic
HFEO	Heavy Fire Equipment Operator
HR	House Resolution
IAA	Initial Attack Assessment
IAAI	International Association of Arson Investigators
IAFF	International Association of Fire Fighters
IC	Incident Commander
ICP	Incident Command Post
ICS	Incident Command System
IDL	Industrial Disability Leave
IFR	Instrument Flight Regulations
IHP	Improved Harvesting Program

IHV	Immediate Harvest Value
IMS	Interagency Mail Service
IPA	Intergovernmental Personnel Agreement
IPM	Integrated Pest Management
IR	Infrared
ISO	Insurance Services Office
ISP	Information Systems Plan (CDF)
ITR	Individual Training Record
JAC	Joint Advisory Committee
JACRIC	Joint Advisory Committee Report Implementation Committee
JAP	Joint Apprenticeship Program
JDSF	Jackson Demonstration State Forest
LAFCO	Local Agency Formation Commission
LANDSAT	Land Satellite
LAO	Legislative Analyst's Office
LMP	Land Management Plan
LO	Lookout
LRA	Local Responsibility Area
LRO	Labor Relations Office (CDF)
LT	Limited Term
MACS	Multi-Agency Coordination System
MIL-SPEC	Military Specification (followed by a number)

MIL-STD	Military Standard (followed by a number)
MOU	Memorandum of Understanding
MQs	Minimum Qualifications
MRT	Material Requisition or Transfer
MSA	Merit Salary Adjustment
MST	Management Services Technician
M&SS	Materials and Stores Supervisor
MWD	Municipal Water District
NASA	National Aeronautics and Space Administration
NASF	National Association of State Foresters
NDI	Nonindustrial Disability Insurance
NEPA	National Environmental Policy Act of 1969
NFDRS	National Fire Danger Rating System
NFFL	Northern Forest Fire Lab (USFS)
NFMAS	National Fire Management Analysis System
NFPA	National Fire Protection Association
NFS	National Forest System
NHTSA	National Highway Traffic Safety Administration
NIIMS	National Interagency Incident Management System
NIOSH	National Institute of Occupational Safety and Health
NOAA	National Oceanic and Atmospheric Administration
NOPA	Notice of Personnel Action

NPPERP	Nuclear Power Plant Emergency Response Plan
NPS	National Park Service
NTSB	National Transportation Safety Board
NWCG	National Wildfire Coordinating Group*

*Has eight working teams. See CWT, FCWT, FEWT, FOSWT, FTWT, PF&FEWT, Q&CWT, and WPWT.

NWS	National Weather Service
OA	Office Assistant
OAL	Office of Administrative Law
OCC	Operations Coordination Center
OES	Office of Emergency Services
OFA	Office of Fleet Administration (Department of General Services)
OHV	Off-Highway Vehicle
OPR	Office of Planning and Research
ORV	Off-Road Vehicle
OSA	Office of the State Architect
OSD	Operation System Description
OSHA	Occupational Safety and Health Administration (U.S.)
OT	Office Technician
OTC	Office of Telecommunications (previously called Communications Division)
PA	Personnel Assistant

PAR	Property Acquisition Report
PC	Personal Computer
PCA	Program Cost Account
PEG	Professional Engineers in Government
PERS	Public Employees Retirement System
PF&FEWT	Prescribed Fire & Fire Effects Warning Team (See NWCG)
PI	Permanent Intermittent
PIMS	Personnel Information Management System
PL	Public Law
PLT	Preferred Limited Term
PMIS	Property Management Information System
PNW/RES	Pacific Northwest Forest & Ranger Experiment Station (Portland) USFS
POST	Peace Officers Standards and Training
PRC	Public Resources Code
PRC	Preliminary Review Committee (Exam Process)
PSW/RES	Pacific Southwest Forest & Range Experiment Station (Berkeley) USFS
PT	Physical Training
PTRS	Program Time Reporting System (Obsolete). Now called: APTR: Attendance & Program Time reporting.
PUC	Public Utilities Commission
PVEA	Petroleum Violations Escrow Account

PWB	Public Works Board
QAP	Qualifications Appraisal Panel
Q&C	Qualifications and Certification
Q&CWT	Qualifications and Certifications Working Team (See NWCG)
QUALS	Qualifications (Usually minimum)
RACO	Regional Aircraft Coordinating Officer
RAO	Regional Administrative Officer
RARE	Roadless Area Review and Evaluation
RAWS	Remote Automatic Weather Station
RCD	Resource Conservation District
RC&D	Resources Conservation & Development Program
RCFP	Rural Community Fire Protection (USFS)
RESTAT	Resources Unit Leader
RFA	Rural Forestry Assistance
RFP	Request for Proposal
RI	Ranger Improvement
RIA	Ranger Improvement Association
RIC	Ranger In Charge
RIP	Roughmill Improvement Program
RO	Regional Office
ROP	Regional Occupational Program
RPA	Forest and Rangeland Renewable <u>R</u> esources <u>P</u> lanning <u>A</u> ct of 1974

RPF	Register Professional Forester
RPT	Resource Protection Trainee
RRIF	Renewable Resources Investment Fund
RTS	Route to Staff
RU	Unit
RV	Repeater Vault
R/W	Right of Way
RWQCB	Regional Water Quality Control Board
RWT	Reduced Work Time
SAC-MAC	Sacramento Multi-Agency Coordination
SAE	Society of Automotive Engineers
SAF	Society of American Foresters
SAFE	State Association of Fire Educators
SAM	State Administrative Manual
SB	Senate Bill
SBFS	State Board of Fire Services
SCA	Senate Constitutional Amendment
SCAG	Southern California Association of Governments
SCBA	Self-Contained Breathing Apparatus
SCH	State Clearinghouse
SCIF	State Compensation Insurance Fund
SCS	Soil Conservation Service (U.S.)
SCR	Senate Concurrent Resolution

SEC	State Equipment Council
SEC	Security and Exchange Commission
SEERA	State Employer-Employee Relations Act
SFM	State Fire Marshal
SFR	State Forest Ranger
SIOC	State Information Officers Council
SIP	Sawmill Improvement Program
SITSTAT	Situation Unit Leader
SJR	Senate Joint Resolution
SLAMM	Statewide Logistics and Materials Management System
SLC	State Lands Commission
SLPZ	Stream and Lake Protection Zone
S.O.	Sheriff's Office
SOIT	State Office of Information Technology
SONCAL	Southern Oregon-Northern California Fire Council
SP	State Park
SPB	State Personnel Board
SPF	State and Private Forestry (USFS)
SPO	Subpurchase Order
SPZ	Stream Protection Zone
SR	Senate Resolution
SRA	State Responsibility Area
SROA	State Restriction of Appointment

SSA	Staff Services Analyst
SSM	Staff Services Manager
STA	Special Treatment Area
SWMB	Solid Waste Management Board
SWRCB	State Water Resources Control Board
TAU	Temporary Authorization Appointment
TBA	Transfer of Budget Allotment
TBEA	Truck Body and Equipment Association
TCP	Timberland Conversion Permit
T&D	Training and Development (assignment)
TD	Temporary Directive
TD	Temporary Disability
THP	Timber Harvesting Plan
TPZ	Timberland Production Zone (formerly Timberland Preserve Zone)
TREES	Timber Resource Economic Estimation System
TRPA	Tahoe Regional Planning Agency
TT	Truck Trail
UC	University of California
UF	Urban Forestry
UL	Underwrites Laboratories, Inc.
ULP	Unfair Labor Practice
UPS	United Parcel Service

USDA	U. S. Department of Agriculture
USDI	U. S. Department of the Interior
USFS	U. S. Forest Service
USGS	U. S. Geological Survey
VFC	Volunteer Fire Company
VFD	Volunteer Fire Department
VIP	Volunteer In Prevention
WCAB	Workers' Compensation Appeals Board
WLPZ	Watercourse and Lake Protection Zone
WERS	Weapons Effects Reporting System
WFC	Western Fire Committee
WFCA	Western Forestry and Conservation Association
WIT	Women In Timber
WODOC	William O. Douglas Outdoor Classroom
WPC	Word Processing Center
WPWT	Wildfire Prevention Working Team (See NWCG)
WTA	Western Timber Association
WWG	Work Week Group
(End).	

CHAPARRAL

CHAPARRAL DESCRIBES AN ENTIRE ASSEMBLAGE OF SHRUBS AND BRUSH. THE TYPICAL VEGETATION COVER ON SOUTHERN CALIFORNIA MOUNTAINS COVERS 8-1/2 PERCENT OF CALIFORNIA.

FIRE IN CHAPARRAL LITERALLY EXPLODES--CAUSED BY IGNITION OF HIGHLY VOLATILE OILS AND WAXES DRIVEN OFF LEAF SURFACES BY HIGH TEMPERATURES.

RESPROUTS AFTER FIRE.

Chaparral comes from the word "chaparro" which the early Spanish explorers used to describe the dense live-oak scrub of the Mediterranean region. In present usage, chaparral describes the entire assemblage of shrubs or brush species, not a single species.

Chaparral covers about 8.5 percent of California, making it the most characteristic natural vegetation type in the State. It reaches its fullest development in Southern California, where it generally ranges in elevation from 1,000 to 5,000 feet.

Chaparral is a unique vegetation type ideally adapted to a severe environment which includes extended drought, unstable land forms, desiccating winds and periodic fire. Many chaparral species are well adapted to drought because of leaf form and shape and extractive accumulations such as oily leaf surfaces, waxy leaf coverings, etc. These drought adaptations are the major factors that contribute to the high flammability of the chaparral. Often times, fires appear to literally explode in the chaparral areas. This is caused by the ignition of highly volatile oils and waxes driven off the leaf surfaces by high temperatures. Because chaparral is adapted to burn well, it is guaranteed a successful and competitive occupancy of the site.

Chamise is the major chaparral species and is often found in nearly pure stands. It has many characteristics that make it highly flammable. These include high temperatures and volatile substances in the leaf, low moisture content during the drought, a majority of its fuel surface area in the smaller size classes, and horizontal and vertical continuity.

Most chaparral species sprout from the root crown after the stems and foliage have been killed by fire. Many species also produce seeds that must be heat-treated before they will germinate.

Many people have been advocating letting fires burn in the chaparral in recent years. This cannot be done under present conditions without a greater loss of life and property. The statement that prescribed or controlled burning is the answer to all wildland fire problems in Southern California is a myth. Prescribed burning is not a panacea that will solve all problems. Prescribed burning is an important land management tool. However, this technique is a complex question with many factors that must be examined--such as difficulty to control, soil factors, slope factors, dwellings, downstream values, quality standards, air quality standards, etc. Prescribed burning takes real professional analysis and judgment. When anyone says fire in the wildlands is all good or all bad, either extreme is unrealistic.

CDF RADIO FREQUENCIES

<u>LOCATION</u>	<u>ECC</u>	<u>NET</u>	<u>DIRECT</u>	<u>REPEATER IN</u>
Statewide		CDF-1	151.355	159.300
Statewide		CDF-2	151.265	159.330
Statewide		CDF RED	151.220	
Statewide		CAL CORD	156.075	

REGION I

San Mateo-Santa Cruz	Felton	Local	151.370	159.285
Humboldt-Del Norte	Fortuna	Local	151.250	159.405
Mendocino	Howard Forest	Local	151.385	159.270
Lake-Napa	St. Helena	Local	151.340	159.315
Sonoma	Santa Rosa	Local	151.460	159.390
Santa Clara	Morgan Hill	Local	151.445	159.345

REGION II

Siskiyou	Yreka	Local	151.325	159.360
Shasta-Trinity	Redding	Local	151.160	159.270
Lassen-Modoc	Susanville	Local	151.250	159.405
Tehama-Glen	Red Bluff	Local	151.370	159.405
Butte	Oroville	Local	151.400	159.375
Nevada-Yuba-Placer	Auburn	Local	151.325	159.360

REGION III

San Luis Obispo	San Luis	Local	151.325	159.315
Riverside	Perris	Local-West	151.325	159.315
		Local-East	151.175	159.285
San Bernardino	San Bernardino	Local-West	151.455	159.390
		Local-East	151.325	159.315
San Diego	Monte Vista	Local-West	151.190	159.225
Owens Valley	Inyo	Local	151.355	159.300

REGION IV

Amador-El Dorado	Danaher	Local	151.190	159.225
Tuolumne-Calaveras	San Andreas	Local	151.175	159.225
Madera-Mariposa	Mariposa	Local	151.460	159.225
Fresno-Kings	Sanger	Local	151.385	159.270
Tulare	Visalia	Local	51.190	159.225
San Benito-Monterey	King City	Local	151.250	159.405

AIR NETS

See Attached Map

Blue 151.280

Green 151.295

Yellow 151.310

USFS FREQUENCIES

<u>FOREST NETS</u>	<u>CAR/CAR</u>	<u>MOB RELAY RECEIVE</u>
Angeles	171.575	172.375
Cleveland	168.750	170.300
El Dorado	171.525	169.950
Inyo	168.125	163.725
Klamath	164.175	164.975
Lassen	172.225	171.475
Los Padres	170.550	169.900
Mendocino	169.175	169.975
Modoc	186.750	168.150
Plumas	170.550	169.900
San Bernardino	171.475	169.875
Sequoia	168.775	170.575
Shasta-Trinity	171.575	169.100
Sierra	171.400	170.600
Six Rivers	168.725	170.125
Stanislaus	168.730	170.500
Tahoe	168.775	170.375
F-5 Cache	169.925	170.525
USFE AIRNET	168.625	168.625

All of these frequencies are not assigned exclusively to the U.S. Forest Service: some are shared by various agencies.

ICS CLEAR TEXT WORDS AND PHRASES

WORDS and PHRASES

APPLICATION

Unreadable

Used when signal received is not clear. In most cases, try to add the specific trouble.

Example: "Unreadable, back-ground noise."

Copy

Used to acknowledge message. Copies received. Unit radio identifier must also be used. Example: "Engine 2675, copies."

Affirmative

Yes

Negative

No

Respond, responding

Used during dispatch - proceed to or proceeding to an incident.

Example: "Engine 5176, respond." or "St. Helena, Engine 1375 responding."

Enroute

Normally used by administrative or staff personnel to designate destinations. Enroute is substitute for responding.

Example: "Redding, Chief 2400 enroute RII."

In-quarters, with
Station name or number

Used to indicate that a unit is in a station.

Example: "Morgan Hill, Engine 4577 in-quarters. Sunol."

Uncovered

Indicates a unit is not in-service, because there are no personnel to operate it.

WORDS and PHRASES

APPLICATION

Out-of-Service
service.

Indicates a unit is mechanically out of
Example: "Auburn, Transport 2341,
out-of-service."

Note: when repairs have been
completed, the following phrase should
be used:

"Auburn, Transport 2341, back in
service available."

In-Service

This means that the unit is operating,
not in response to a dispatch.

Example: "Fortuna, Engine 1283, in
service, fire prevention inspections."

Return to

Normally used by ECC to direct units
that are available to a station or other
location.

At scene

Used when units arrive at the scene of
an incident.

Example: "Perris, Engine 6183, at
scene."

Available

Used when a unit is ready for a new
assignment or can return to quarters.
The ECC will give the unit a new
assignment or direct it to return to
quarters.

Example: "San Luis, Cuesta Crew 2
available." "Cuesta Crew 2 return to
Cuesta."

Available at scene

Used when a unit is still committed to an
incident, but could be dispatched to a
new emergency if needed.

WORDS and PHRASES

Available at residence

Can handle

Emergency Traffic Only

Emergency Traffic

APPLICATION

Used by administrative or staff personnel to indicate they are available and on-call at their residence.

Used with the amount of equipment needed to handle the incident.

Example: "Susanville, Battalion 2212, can handle with units now at scene."

Radio users will confine all radio transmissions to an emergency in progress or a new incident. Radio traffic which includes status information such as responding, reports on conditions, at scene and available will be authorized during this period.

Term used to gain control of radio frequency to report an emergency. All other radio users will refrain from using that frequency until cleared for use by ECC.

**INCIDENT COMMAND SYSTEM
FIRE AGENCY RADIO FREQUENCIES**

<u>RADIO FREQ.</u>	<u>AGENCY/USER</u>	<u>STANDARD SYNTHESIZED RAD CONTROL HEAD CONFIGURATION</u>		
		120	60	3
33.48	LFD-Command 12			
33.52	LFD-Command 13			
33.60	LFD-Command 11			
33.66	OES-#2 (T)			
(154.220)	OES-#2 (R)			
33.70	LFD-TAC 7 (RED)			
33.82	LFD-TAC 8 (RED)			
33.86	LFD-Command 14			
33.90	LFD-TAC 9 (RED)			
33.94	LFD-Command 10 (RED)			
33.98	OES-#1 (T)	1 E	Ch 40	Ch
33.98	OES-#1 (T)			
(154.160)	OES-#1 (R)			
46.06	ORC-TAC 2			
46.14	ORC-TAC 5			
46.42	ORC-TAC 4			
46.48	ORC-Command 3			
151.160	CDF-Shasta-Trinity (Local)	1 D		
151.175	CDF-Riverside East (R)	2 D	Ch 50	
(159.285)	CDF Riverside East (T)			
151.190	CDF-San Diego (R)	3 D	Ch 51	
(159.225)	CDF-San Diego (T)			
151.220	CDF-HT Red	1 G		
151.265	CDF-Regions 3 & 4 (R)	5 D	Ch 46	
(159.330)	CDF-Region 3 (T)			
151.280	CDF-Blue Air			
151.295	CDF-Green Air			
151.310	CDF-Yellow Air			
151.325	CDF-San Bernardino East/Reg 2	6 D	Ch 47	
151.340	CDF-Lake Colusa	7 D		
151.355	CDF-State Net (R)	8 D		
(159.300)	CDF-State Net (T)			
151.370	CDF-San Mateo-Santa Cruz	9 D		
151.385	CDF-Riverside West (R)/Reg I	10 D	Ch 49	
(159.390)	CDF-Riverside West (T)/Reg I			
151.400	CDF-Santa Clara 11 D			
151.445	CDF-San Bern West (R)/Reg V	12 D	Ch 48	
(159.390)	CDF-San Bern West (T)/Reg V			

<u>RADIO FREQ.</u>	<u>AGENCY/USER</u>	<u>STANDARD SYNTHESIZED RAD CONTROL HEAD CONFIGURATION</u>			
151.460	CDF-Madera-Mariposa-Merced	13 D			
153.770	SBC 11 E Ch 58				
153.830	OES-Firemars (R)	120	60	3	
(154.295)	OES-Firemars (T)	2 G		Ch 39	Ch
153.905	SBC	12 E			
154.010	VNC #1	8 E		Ch 55	
154.160	OES-TAC	1 E		Ch 40	Ch
154.220	OES-TAC			Ch 41	Ch
154.250	SBC	10 E			
154.265	OES-White 2	4 G			
154.280	OES-White 1	3E-3G-13H		Ch37-52	Ch
154.295	OES-White 3	4E 5G		Ch.38	Ch
154.325	VNC #2	9 E		Ch 56	
154.325	LAC #2 - Valley Dispatch	5E		Ch 53	
154.400	LAC #3 - Antelope Dispatch	7 E			
154.430	LAC #1 - LA Dispatch	6E		Ch 54	
166.375	BLM Riverside			Ch 59	
166.4875	BLM Riverside			Ch 60	
166.675	USFS Airtactics 1 (Airtactics)				
168.025	USFS Airtactics ADR (T)				
168.050	USFS-BIFC TAC-1	1 H		Ch 26	Ch
168.075	USFS-BIFC (C-3) CSL-3	9 H		Ch 33	Ch
168.100	USFS-BIFC (C3) CSL-2				Ch
168.125	USFS-Region 5 (F1) CSL-4				Ch
168.150	CNF-F #3	4 F			
168.200	USFS-BIFC TAC-1	1 H		Ch 26	Ch
168.600	USFS-BIFVC TAC 3	3 H		Ch 28	Ch
168.625	USFS-Air Dispatch				
168.650	USFS-R5 Firescope	14 H			
168.700	USFS-BIFC (C1) CSL-1	7 H		Ch 29	Ch
168.725	USFS-R5-F1 CSL-4	5 H		Ch 36	Ch
168.750	USFS-CNF F1	3 F		Ch 43	
169.125	USFS-R5 Calling	12 F		Ch 24	Ch
169.150	USFS-Airtactics 2 (Airtactics)				
169.175	USFS-Firescope CSL-5	11 H			
169.875	USFS-Firescope CSL-4	10 H			
169.925	USFS BDF F3	8 F			
169.950	USFS ANF F3	8 F			
170.00	USFS-R5 Air/Ground	2F 15H		Ch 23	Ch
170.425	USFS-BIFC (C3) RPT CSL-3			Ch 34	Ch
170.450	USFS-BIFC (C2) RPT CSL-2			Ch 32	Ch

179.479	USFS-LPF F2	10 F		
170.525	USFS-Firescope TAC 4	4 H		
170.550	USFS-LPF F1	9 F	Ch 44	
171.475	USFS-BDF F1	5 F	Ch 45	
172.500	USFS-R5 F1 TAC-A		Ch 25	Ch
172.350	USFS-LPF F4	11 F		

RADIO
FREQ.

AGENCY/USER

STANDARD SYNTHESIZED RAD
CONTROL HEAD CONFIGURATION

120 60 3

470.3625	LAC - Antelope
470.4375	LAC - LA
470.4875	LAC - Valley
470.4625	LAC - Valley
470.4875	LAC - LA
470.6375	LAC - Antelope
470.6625	LAC - Valley
506.1375	LFD-TAC 4 (Yellow)
506.3125	LFD-TAC 1 (Yellow)
506.5375	LFD-TAC 2 (Yellow)
506.6375	LFD-TAC 5 (Yellow)
506.9125	LFD-TAC 3 (Yellow)
507.0125	LFD-TAC 6 (Yellow)

CONSERVATION CAMP PROGRAM - CDF

STARTED IN 1940'S
PROGRAM CONSISTS OF INMATE (MINIMUM SECURITY TYPES) AND THE
CALIFORNIA
CONSERVATION CORPS
37 CAMPS IN CALIFORNIA, APPROXIMATELY 109 FIRE CREWS
INDIVIDUAL'S ARE USED FOR VARIOUS FIRE DUTIES

The wildland fire protection and prevention efforts of CDF are a vital part of man's effort in California to control the environment. The climate and terrain demand a mobile, well-trained and supervised complement of large hand crews. In the 1940's a pro-Corrections and Youth Authority to provide the necessary manpower needed for wildland fire control.

CDF provides training, leadership and work for minimum security persons in custody. Inmates and ecology corpsmen are given housing, food, clothing, tools and transportation in an outdoor housing, food, clothing, tools and transportation in an outdoor rehabilitative situation. The Corps and Norco camps house noninmates and provide work for men and women.

The actual work distribution includes: wildfire suppression, search and rescue, presuppression activities, fire defense improvements, forest, range and watershed management, fire academy, in-camp services and services for other agencies.

For an average year there are 2,104 men in 35 camps providing 109 fire crews. These crews provided 621, 431 man-days of work in 1974. The type of facility they are housed in and their number are:

(BLANK)

**FEDERAL AVIATION REGULATIONS
PART 91.137
SUMMARY**

WHAT THE REGULATIONS SAYS:

If the FAA determines it to be necessary in order to prevent an unsafe congestion of sightseeing aircraft above an incident or event that may generate a high degree of public interest, or to provide a safe environment for the operation of disaster relief aircraft, a notice to airmen will be issued designating an area within which temporary flight restrictions apply.

When a notice to airmen has been issued under this section, no person may operate an aircraft within the designated area unless:

- 1) The aircraft is participating in disaster relief activities and is being operated under the direction of the agency responsible for relief activities.
- 2) The aircraft is operating to, or from, an airport within that area and is operated in order not to hamper the relief aircraft.
- 3) Visual flight around the area is not practical due to weather, terrain or other considerations. Prior notice must be given to the Air Traffic Facility (usually a Flight Service Station) and the enroute operation through the area is conducted so as not to endanger or hamper relief activities.
- 4) The aircraft is carrying properly accredited news representatives or persons on official business concerning the incident. These aircraft must operate above the altitudes being used by relief aircraft unless otherwise authorized by the agency responsible for relief activities. Prior to entering the area, the operator must file with the Air Traffic Facility specified in the Notice to Airmen, a flight plan that includes the following information:
 - a) Aircraft identification, type and color.
 - b) Radio communications frequencies to be used.
 - c) Proposed times of entry and exit of designated area.
 - d) Names of news media or purpose of flight.
 - e) Any other information deemed necessary.

WHAT A RESTRICTED AREA DOES:

A Temporary Flight Restriction establishes an area with usually a 5 statute mile radius and a ceiling of 5,000 feet above the highest obstacle, around an incident. This supposedly gives an area of protected airspace to the aircraft involved in the incident

operations. What is does do is insure that aircraft flying on Instrument Flight Plans are not routed through the area, and it gives an enforcement tool to use against aircraft operating under Visual Flight Rules.

Because of the mechanics of the process, there is an excellent chance that aircraft operating under Visual Flight Rules might not have received the Notice to Airmen (NOTAM) that specifies the restricted area. That does not relieve the pilot of the responsibility of avoiding the area; the pilot is required under the Federal Aviation Regulations to familiarize himself with all available information concerning his flight. Normally, the information regarding temporary flight restrictions is available at all Flight Service Stations.

HOW A RESTRICTED AREA IS SET UP:

The normal method of establishing a restricted area is to notify the nearest FAA FLIGHT SERVICE STATION(FSS), which can be found in the phone book listed under US Government, Department of Transportation Federal Aviation Administration.

Once the FSS has the information, they will contact the AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC) which has the responsibility for the airspace over the incident. In California, this will be the Oakland Center; the Seattle Center for most of Northern California; and, the Los Angeles Center for Southern California.

The Center will then relay the information to the National Flight Data Center (FDC) which has the responsibility for the actual issuance of the Notice of Airmen (NOTAM). The FDC, will then transmit the NOTAM over a special circuit, back to the FSS. The whole process usually takes one to two hours but in conversations with the FAA, they have indicated that this time could be shortened if the procedure was used more.

INFORMATION NEEDED TO ESTABLISH A PART 91.135 TEMPORARY FLIGHT RESTRICTION

- 1) A clear definition of the area in statute miles.

Whenever possible, the air attack should get the bearing and distance to the nearest VOR. The ECC may also be able to get this information off of the air tanker or helicopter dispatching maps. If this is not possible, the next best location would be latitude and longitude. DO NOT use section, township and range---flight service stations do not have this information. Usually, an area with a radius of 5 miles will be enough; on larger incidents, a 10-mile radius may be necessary.

- 2) The altitude affected.

For most of our operations, take the highest elevation in the area and add 5,000 feet.

- 3) Termination time.

The NOTAM will stay in effect until its termination time and then will be automatically canceled by the NFDC. If no termination time has been issued, the restricted area will stay in effect. Since our operations very rarely include night operations, it makes sense to have a termination time of 30 minutes after sunset. The process can be repeated the next day if needed.

- 4) The agency directing the operations and commercial telephone number.

The ECC handling the incident should be listed in case there is a need for the FAA to contact the using agency. Be sure to add the incident name and frequency on which the air attack can be contacted.

MEDIA AIRCRAFT SUMMARY

Numerous incidents have occurred in the past few year between media aircraft (airplanes and helicopters) and aircraft involved in disaster relief. As the number of media aircraft increases, due in part to the market pressure to "be first on the scene," so will the associated problems.

Some of the problems we have encountered with media aircraft:

Flying through a fire area without communications.

In one instance, an airplane belonging to a Bay Area radio station flew a figure 8 pattern at about 800 feet above a fire and prevented the air tankers from making drops. Without the tanker drops, the fire was able to come out of a drainage which increased the threat to a nearby subdivision.

Still flying on a fire after reporting clear of the area.

In several cases, media aircraft have reported themselves clear when, in fact were still on the incident scene. On large incidents especially, it is impossible for the air attack, or coordinating aircraft, to keep a visual contact on all aircraft.

Low flying (hovering helicopters) over fires, floods, earthquakes, etc.

Several cases of helicopters hovering over incident scenes have been reported, and the associated rotor wash has caused additional damage to persons or property. In one case, a media helicopter hovered over an acid spill and blew the fumes into a group of rescue workers causing injuries.

Not following the instructions of the Air Attack.

On many fires, the media aircraft have entered the area with permission but have not followed the instructions given them. In several cases, this has resulted in airspace conflicts with air tankers and helicopters working the incident.

There are just a few of the instances where the presence of media aircraft has created a very real hazard to other aircraft, people on the ground and themselves.

PROCEDURES FOR HANDLING MEDIA AIRCRAFT

FIRES:

During almost all large fires, an Air Attack will be in the air and should be used as the primary coordinating contact since he is responsible for the air traffic around the fire. The media should be instructed to call the Air Attack on the VHF Attack on the VHF aircraft frequency assigned to the incident. On CDF fires, this will usually be 122.925. Some media aircraft are also equipped with radios capable of transmitting on the air net frequencies. Use of these frequencies should be limited to aircraft working the fire whenever possible. If a temporary restricted area is in effect under FAR 91.91, then the media aircraft should be able to get the frequency information from the Flight Service Station (FSS) designated as coordinating facility.

According to Mary Barr, on large USFS fires, a restricted area established by FAR 91.91 will be in effect, and the media aircraft must contact the FSS responsible for the proper frequency.

Remember that under FAR 91.91, the media aircraft must file a flight plan with the air traffic facility handling the restricted area.

Other types of large incidents--floods, earthquakes, etc:

These types of incidents present more problems because of the large areas they may cover and the lack of a coordinating aircraft. In most cases, the agency responsible for the relief activities should have designated VHF frequency in the aircraft range that can be used as a coordination frequency and that all aircraft operating in the area can use to keep other traffic aware of their locations. If at all possible, a coordinating aircraft should be used. The FAA can be very helpful in arranging the airspace requirements over an incident area.

INSTRUCTIONS FOR MEDIA AIRCRAFT

Media Aircraft must:

Contact the coordinating aircraft if there is one (air attack, lead plane or an aircraft operating on the incident).

Follow the instructions given. Maintain a listening watch on the coordinating frequency.

Advise if any special shots are required or wanted. (In almost every case, every effort will be made to accommodate the request.)

Leave the area when requested.

If a temporary restricted area is in effect, media aircraft should follow the requirements of FAR 91.91. Just contacting the coordinating aircraft does not relieve the pilot from the provisions of FAR 91.91.

If no coordinating aircraft is on scene, media aircraft should maintain a listening watch on the assigned frequency and announce intentions over that frequency. If over a fire, extra care should be taken due to the probable arrival of fire control aircraft.

FEDERAL AVIATION REGULATION NO. 91.135

General Operating and Flight Rules

91.135 Avoidance of disaster areas.

- (a) Designated disaster areas consist of that airspace below 2,000 feet above the surface within five statute miles of an aircraft or train accident, forest fire, earthquake, flood or other disaster of substantial magnitude. The designation of a disaster area is made in a Notice to Airmen.
- (b) No person may operate an aircraft within a designated disaster area unless:
 - 1. That aircraft is participating in airborne relief activities under the direction of the agency responsible for relief activities.
 - 2. That aircraft is being operated to or from an airport within the area, if that operation does not hamper or endanger relief activities.
 - 3. Flight around or above the area is impractical due to weather, terrain or other consideration, if that enroute operation through the area does not hamper or endanger relief activities and prior notice is given to the Air Traffic Service facility specified in the Notice to Airman.
 - 4. It is specifically authorized under an IFR ATC clearance, or
- 5. That aircraft is carrying properly accredited news representatives or persons of official business concerning the disaster, is operated in accordance with 91.79 and, unless otherwise authorized by the Agency responsible for relief activities, its operator has filed with the Air Traffic Service facility specified in the Notice to Airmen a flight plan that includes the following information.
 - (i) Aircraft identification, type and color
 - (ii) Radio communications frequencies to be used
 - (iii) Proposed times of entry and exit of the disaster area.
 - (iv) Name of news media or purpose of flight.
 - (v) Any other information deemed necessary by ATC.

91.93 Flight Test Areas.

No person may flight test an aircraft except over open water or sparsely populated areas, having light air traffic.

91.95 Restricted and prohibited areas.

- (a) No person any operate an aircraft within a restricted area (designated in Part 73) contrary to the restrictions imposed or within a prohibited area, unless he has the permission of the using or controlling agency, as appropriate.
- (b) Each person conducting, within a restricted area, an aircraft operation (approved by the using agency) that creates the same hazards as the operations for which the restricted area was designated, may deviate from the rules of the subpart that are not compatible with his operation of the aircraft.

REQUEST FOR FAA 91.135

DATE: _____ TIME: _____ ORDER #: _____

1. Name Forest/Agency Requesting:

2. Type of Incident (Fire, Flood, Earthquake, etc.): _____

3. Length of time to be in effect (sunrise to sunset or 24 hours per day):

4. Telephone Number of Forest/Agency conducting activity: _____

5. Location of Incident:
 - a. General Description:

 - b. VOR Heading and Distance:

 - c. Elevation of Fire:

6. Type of Aircraft Operations and Area to be designated (retardant aircraft, space 5 Stat mile/2000' AGL): _____

7. Aircraft Operating out of What Airport: _____
8. Contact for Approval to Enter Area (News Media, etc., Give Office Name and Telephone number): _____

9. 91.135 Canceled with FAA: Date: _____ Time: _____

By: _____

FIRE RETARDANT

1955 PROGRAM OF WIDE USE BEGAN

\$1.00/GALLON COST OF DROPPED RETARDANT

NOW USING A LIQUID FERTILIZER - USED TO USE BORATE BUT IT WAS TOO CORROSIVE FOR MACHINERY PLUS IT WAS A SOIL STERILANT RETARDANT SLOWS DOWN A FIRE. GIVES HAND CREWS A CHANCE PROVIDES SAFETY FOR FIREFIGHTERS

Chemical retardants for fire control were first tested in the U.S. and Russia early in the 1930's. High cost and limited availability discouraged extensive testing. In 1955 wide scale use of chemical retardants occurred when an air tanker program was undertaken in California.

Historically, "Borate Bombers" was the term used to describe the aircraft that bombed forest fires with Borate--a chemical fire retardant. Today "Air Tankers" drop fire retardant on fires--BORATE IS NO LONGER USED. Borate (Sodium calcium borate) was so abrasive to pumps used in fire trucks that ground application was abandoned in 1956. It was also found that Borate is a soil sterilant and revegetating areas that Borate had been dropped on was a problem. Now a liquid fertilizer is used as a fire retardant.

Cost of the retardant and using air tankers to drop retardant is approximately \$1.00/gallon (includes cost of retardant and airplane cost).

Liquid fertilizer fire retardants are generally based on ammonium phosphate. They are mixed with water at the rate of 114 pounds of powder/100 gallons of water. A brick red colored iron oxide is added to enable the air tanker pilots to see exactly where the drop landed. Retardant does not wash off easily especially on stucco. Removal of retardant must take place immediately with high pressure hoses and scrub brushes.

Thickening and sticking agent to insure adherence of the retardant to the fuel is also added. During field tests on brush fields, retardant without thickening agents was not effective and the brush burned. Brush treated with thickened retardant would not burn and could not be re-ignited several days later.

There are two types of chemicals used for forest fire control--short and long-term. Short-term are merely water-thickening agents. Viscous water is applied to a burning fuel in thick layers so that large amounts of heat energy are consumed in driving water off the fuel as a vapor. The resulting cooling action sufficiently slows the fire to permit ground crews to construct physical firebreaks. Long-term retardants also thicken water but they contain additional chemicals which act on the chain of combustion of cellulosic materials thereby inhibiting burning. They act by chemical reaction to stop or slow a fire. Long term retardants work well dry, in solution or in a slurry form and remain effective until washed off by rainfall.

Fire retardant accomplishes several objectives.

1. Increases effectiveness of ground crews by strengthening firelines, extinguishing spot fires, providing a delaying action and providing some safety for the hand crews.
2. Reduces fire spread through air attack until ground crews arrive.
3. Supports prescribed burning operations.
4. Prevents roadside fires by pretreating with long-term retardants.

Fire retardants seldom stop fire by themselves.

FORMS INDEX

ICS FORMS

ICS-209	Incident Status Summary.....
ICS-213	General Message Form
ICS-214	Unit Log
ICS-221	Demobilization Checkout
ICS-223	Tentative Release List
ICS-225	Incident Personnel Performance Rating

CDF FORMS

CDF-130	Incident Fact Sheet
CDF-132	Information Log
CDF-133	Information Summary
CDF-134	Field Information Log
CDF-135	Standard News Release Form

PERSONNEL/FINANCE FORMS

FC-42	Time Sheet Pay Voucher
FI-9	Employment Eligibility Verification
W-4	IRS Tax Withholding
STD-262	Travel Expense Claim

CDC FORMS

Inmate Consent to News Media Contact

FORMS: INTRODUCTION

This section contains the primary forms used in the information function. They are broken into four groups: Incident Command System (ICS), CDF, Personnel/Finance, and California Department of Corrections (CDC). The first page shows all of the ICS forms, who originates them, and their distribution. On the following pages are found form descriptions, direction for completion, completed forms, and blank forms. The blank forms are suitable for duplication.

For additional information regarding forms, consult either the ICS or CDF forms manuals.

INCIDENT STATUS SUMMARY (ICS FORM 209)

- A. Purpose. The Incident Status Summary serves the following purposes:
1. It is used by Situation Unit personnel for posting information on Command Post displays.
 2. When duplicated and provided to Command Staff members, it provides them with basic information for use in planning for the next operational period.
 3. It provides basic information to the Information Officer for preparation of media releases.
 4. It provides incident information to agency dispatch and off incident coordination centers.
- B. Preparation. The Incident Status Summary is prepared by the Situation Unit. Resources information should be obtained from the Resources Unit. It is scheduled for presentation to the Planning Section Chief and other General Staff members prior to each Planning Meeting and may be required at more frequent intervals by the Incident Commander or Planning Section chief.
- C. Distribution. When completed, the form is duplicated and copies are distributed to the Incident Commander and staff, and all Section Chiefs, Planning Section Unit Leaders, and Agency Dispatch Centers. It is also posted on the display board located at the Command Post.

**INSTRUCTION FOR COMPLETING INCIDENT STATUS SUMMARY
(ICS FORM 209)**

Item Number	Item Title	Instruction
1.	Incident Name	Enter the name assigned to the incident.
2.	Incident Number	Enter the number assigned to the incident (if applicable).
3.	Incident Commander	Enter the name of the Incident Commander.
4.	Jurisdiction	Enter the name of the agency responsible for incident management.
5.	County	Enter county where incident is located.
6.	Type Incident	State what kind of incident is occurring, (e.g., wildland fire, oil refinery fire, flood, etc.).
7.	Location	Enter location--location to landmarks, Thomas Bros. grid, etc. Be specific as possible.
8.	Started Date/Time	Enter date/time incident started (first reported).
9.	Cause	State probable cause, if known.
10.	Area Involved	Enter acreage or size as of time of report.
11.	Percent Contained	Enter percent of the perimeter contained at the time of the report.
12.	Expected Containment	Enter date and time estimates, if known. Enter UNK, if unknown.
13.	Percent Controlled	Enter percent of the incident considered under control at the time of the report.
14.	Expected Control	Enter date and time estimates, if known. Enter UNK, if unknown.
15.	Current Threat	Provide a brief summary of the threat situation as it applies at the time of the report.

Item Number	Item Title	Instruction
16.	Control Problems	Describe control problems that may have an effect on containment/control action.
17.	Estimated Loss	Enter dollar value of real and personal property loss as direct result of incident.
18.	Estimated Savings	Enter dollar value of real and personal property saved as a result of suppression action.
19.	Injuries/Deaths	State numbers of injuries or deaths associated with incident assigned personnel.
20. 21.	Line Built Line to Build	Applicable to wildland incidents. State in yards, chains (1 chain = 66 feet), or miles.
22.	Current Weather	Self explanatory.
23.	Predicted Weather	Enter predictions based on incident or other Next Period observations.
24.	Incident costs Previous Day	Enter total dollar cost associated with incident activity. Includes cost for incident assigned personnel, equipment, and supplies.
25.	Total Cost to Date	Summation of all daily cost estimates.
26.	Agencies	Enter three-letter designators of all assisting agencies.
27.	Resources	For each assisting agency, enter number of single resources or Strike Teams. Resources in Task Forces should be entered as single resources.
28.	Cooperating Agencies	List other agencies who are providing liaison and other than resource support to the incident.
		Total personnel should include overhead personnel and <u>all personnel assigned to resources.</u>

Item Number	Item Title	Instruction
29.	Remarks	Use this section to include any additional information necessary for a better understanding of the Incident Status Summary.
30.	Prepared By	Enter name of Situation Unit Leader responsible for obtaining information and preparing the report.
31.	Approved By	Enter name of Situation Unit Leader responsible for obtaining information and preparing the report.
32.	Date/Time	Enter date and time that report is being prepared.
33.	Initial/Update	Check appropriated box.
34.	Sent To	Include the three-letter designator of the agency receiving the report. Indicate date and time report is being sent, and initials of person sending the report.

GENERAL MESSAGE (ICS FORM 213)

- A. The Form. The General Message Form in use within the ICS is a three-part form.
- B. Purpose. The purpose of the General Message Form is:
 - 1. It is used by radio/telephone operators to record incoming messages which cannot be orally transmitted to the intended recipients.
 - 2. It is used by Command Post and other incident personnel to transmit messages to the Incident Message Center for retransmission via radio or telephone to the addressee, members, it provides them with basic information.
 - 3. It is used by incident personnel to send any message or notification to incident personnel which required hard-copy delivery.
- C. Initiation of Form. The General Message form may be initiated by radio/telephone operators and any other personnel on an incident.
- D. Distribution. Upon completion, the General Message may be:
 - 1. Hand-carried to the addressee.
 - 2. Hand-carried to the Message Center for retransmission.
 - 3. Referenced by Message Center and addressee requested to pick up hard copy.

**INSTRUCTIONS FOR COMPLETING THE GENERAL MESSAGE FORM
(ICS FORM 213)**

Item Number	Item Title	Instruction
To		Indicate Unit/Person the General Message is intended for. Be specific.
Office		Indicate the location where the Unit/Person is located, e.g, Ground Support Unit Leader, Simpson Camp, Communications, etc.
From		Indicate appropriate designation and location of sender.
Subject		Fill in if applicable.
Date		List the date and time.
Message		Briefly complete. Think through your message before writing it down. Try to be as concise as possible.
Reply		This section is intended to be used by the Unit/Person who receives the message to reply to your message.
Date		Record the date and time of reply.
Signature		Record signature and title of person replying.
White Copy/Pink Copy		Both copies are sent by person who initiates the message.
Yellow Copy		Retained by the person who initiates the message.
Pink Copy		May be returned to the person who initiates the message.

UNIT LOG (ICS FORM 214)

- A. Purpose. The Unit log is used to record details of unit activity including strike team activity. The file of these logs provides a basic reference from which to extract information for inclusion in any after-action report.
- B. Initiation of Log. A Unit Log is initiated and maintained by Command Staff members, Division/Group Supervisors, Air Operations Groups Strike Team/Task Force Leaders, and Unit Leaders. Complete logs are forwarded to supervisors who provide to the Documentation Unit.
- C. Distribution. The Documentation Unit maintains a file of all Unit Logs. It is necessary that one copy of each log be submitted to the Documentation Unit.

INSTRUCTIONS FOR COMPLETING THE UNIT LOG (ICS FORM 214)

Item Number	Item Title	Instruction
1.	Incident Name	Print the name assigned the incident.
2.	Date Prepared	Enter date prepared (month, day, year).
3.	Time Prepared	Enter time prepared (24-hour clock).
4.	Unit Name	Enter the title of the organizational unit or resource designator (e.g., Facilities Unit, Safety Officer, Strike Team).
5.	Unit Leader	Enter the name of the individual in charge of the Unit.
6.	Operational Period	Enter the time span covered by the log (e.g., 1800 Oct. 12 to 0600 Oct. 13).
7.	Personnel Roster	List the name, position, and home base of each member assigned to the unit during the operational period.

Item Number	Item Title	Instruction
8.	Activity Log	Enter the time and briefly describe each significant occurrence or event (e.g., task assignments, task completions, injuries, difficulties encountered, etc.).
9.	Prepared by	Enter the name and title of the person approving the log. Provide log to immediate supervisor, at the end of each operational period.

**INSTRUCTIONS FOR COMPLETING THE UNIT - DEMOBILIZATION
(ICS FORM 214)**

Item Number	Item Title	Instruction
1.	Incident Name/No.	Print Name and/or Number of incident.
2.	Date & Time	Enter Date and Time Prepared.
3.	Demob. No.	Enter Agency Request Number, Order Number, or Agency Demob Number is applicable.
4.	Unit/Personnel Released	Enter appropriate vehicle or Strike Team/Task Force I.D. Number(s) and Leader's name or individual overhead staff personnel being released.
5.	Transportation	Method and vehicle I.D. Number for transportation back to home unit. Enter N/A if own transportation is provided. *Additional specific details should be included in Remarks, block #12.
6.	Actual Release Date/Time	To be completed at conclusion of Demob at time of actual release from incident. Would normally be last item of form to be completed.
7.	Manifest	Mark appropriated box. If yes, enter manifest number. Some agencies require a manifest for air travel.
8.	Destination	Location to which Unit or personnel have been released, i.e., Area, Region, Home base, Airport, Mobilization Center, etc.
9.	Area/Agency/Region Notified	Identify Area, Agency, or Region notified and enter date and time of notification.
10.	Unit Leader Responsible for Collecting Performance Ratings	Self-explanatory. Note, not all agencies require these ratings.

Item Number	Item Title	Instruction
11.	Resource Supervision	Demob Unit Leader will identify with a check in the box to the left of those units requiring check-out.
12.	Remarks	Any additional information pertaining to demob or release.

TENTATIVE RELEASE LIST (ICS FORM 223)

- a. **PURPOSE.** The Tentative Release List provides the Planning function a list of those resources that are available for release from an incident.
- b. **INITIATION OF LIST.** The Tentative Release List is initiated by the Unit Leader, Managers, etc., and approved by Section Chiefs.
- c. **DISTRIBUTION.** The approved (by Section Chief) Tentative Release List is sent to the Planning function.

INSTRUCTIONS FOR COMPLETING THE TENTATIVE RELEASE LIST

ITEM 1 Enter the function, Logistics, Air Operations, etc.

ITEM 2 Enter the time prepared (24 Hour Clock) and date (day, month, year).

ITEM 3 Enter identifiers of resources being released, name, S/T member, crew names, etc., and Resources Ordered/Request Number and positions filling on the incident.

ITEM 4 The Tentative Release List must be approved (signature) by the Section Chief. Enter date (day, month, year) and time (24 Hour Clock).

FORWARD LOOKING INFRARED (FLIR)

FLIR is a portable infrared scanner which is mounted on a helicopter and used as a search and navigation aid.

A sensing unit is placed on the outside of the helicopter. This unit can penetrate fog and smoke and gives a good picture of the thermal condition of the terrain below. The sensor has a 30 to 40 degree field of vision.

Two video monitors are placed inside the helicopter and reveal a black and white representation of the variations in temperature on the terrain. This picture exposes hot spots--tiny patches of fire and any ignition sources that would normally go undetected if viewed with the naked eye.

The helicopter is also equipped with a videotape recorder. This device records the time and date of the taping as well as the picture itself. The videotapes are brought back to the Incident Commander who can then get a good idea of the fire conditions and the location of the fire line.

FLIR allows observers to get a clear picture of the fire and proves to be a source of information during and after the fire.

(see CDF News Release)

GLOSSARY - FIRE TERMS

Agency	The Resources Agency of California unless otherwise specified.
agency	Generally used to denote a unit of government such as a state department or fire district which has legal authority to organize and direct a firefighting service or which has responsibility and authority for contracting for fire protection. (Should not be confused with the fire department proper.)
Receiving, Requesting Sending Agency or Unit	When a fire agency, service, unit or fire department requests physical assistance or receives or sends such assistance to another, confusion may result in respect to which was involved in the sending. This distinction is important not only during the dispatching of such aid, but also in the consideration of reimbursements and the fire records. These terms were developed to eliminate such confusion.
Air Cargo	All goods and material items transported and delivered entirely by aircraft.
Air-ground Detection	A fire detection system combining fixed coverage of key areas by ground detectors with aerial patrol.
Alidade	A straightedge equipped with sights: an essential part of a directional device for locating fires.
Allowable Burned Area	The maximum average loss in acreage burned for a given period of years that is considered acceptable under organized fire control for a given area.
Anchor Point	An advantageous location, usually a barrier to firespread from which to start constructing a fire line. Used to minimize the chance of being flanked by the fire while the line is being constructed. May also refer to a safe ending point for a constructed line.
Area Control Action	See Tactics.

Area Ignition	The ignition of a number of individual fires throughout an area either simultaneously or in quick succession and so spaced that they soon influence and support each other to produce fast, hot spread of fire throughout the area. (See Simultaneous Ignition.)
Area of Influence	A delineated area surrounding an air base or fire station which can be reached first by aircraft or engine from the particular base.
Arsonist	A person who maliciously and unlawfully ignites a fire.
Aspect	The direction in which the slope of a hill or mountain faces. (Also known as exposure.)
Attack a Fire	Attempt to limit the spread of a fire by cooling, smothering, removing, or otherwise treating the fuel around its perimeter. (See Direct Method, Indirect Method, and Parallel Method.)
Azimuth	Direction from a point, measured in degrees clockwise from true north.
Azimuth Circle	A circle graduated in degrees of angle in clockwise direction.
Back Azimuth	Azimuth plus 180 degrees; direction opposite of azimuth.
Backfire	Fire set along the inner edge of a fire control line to stop a spreading wildfire by reducing the fuel or changing the direction of force of the fire's convection column.
Back Pump	A small water container of metal or canvas with a hand pump, fitted with back-pack straps; used mainly in firefighting.
Banking Snags	The act of throwing mineral soil about the base of an unlighted snag to prevent it from taking fire.
Berm	A ridge of dirt or debris slightly above the normal ground surface resulting from line construction. Sometimes created on a slope to stop rolling material.

Blind Areas	An area behind some sight barrier in which neither the ground nor its vegetation can be seen from a given observation point under favorable light and atmospheric conditions.
Blowup	Sudden increase in fire intensity or rate of spread sufficient to preclude direct control or to upset existing control plans. Often accompanied by violent convection and may have other characteristics of a fire storm.
Board of Review	A board or committee selected to review results of fire control action on a given fire in order to identify reasons for both good and poor action and to recommend or prescribe ways and means of doing a more effective and efficient job.
Breakover	A fire edge that crosses a control line or natural barrier intended to confine the fire. Also called slopover.
Broadcast Burning	Intentional burning in which fire is intended to spread over all of a specified ground area.
Brush	Shrubs and stands of short scrubby tree species that do not reach merchantable size. (Not a synonym for slash or reproduction.)
Burning Block	In control or prescribed burning, an area having sufficiently uniform vegetation stand and fuel conditions prescription. The size ranges from the smallest that allows an economically acceptable cost per acre up to the largest that can conveniently be treated (physically and safely) in one burning period.
Burning Conditions	The state of the combined factors of environment that affect fire within a given fuel.
Burning Index	A number in an arithmetic scale determined from fuel, moisture content, wind speed, and other selected factors that affect burning conditions, from which the ease of ignition of fires and their probable behavior may be estimated (see Danger Index).

Burning Index Class	A segment of a burning index scale identified by such qualitative terms as low, medium, high, very high, or extreme, or by numerals: 1, 2, 3...10.
Burning Index Meter	A device used to determine burning index for meter different combinations of burning index factors.(?)
Burning Out	The cleanup by use of fire of any residue of fuel between a constructed fire line and the edge of a dead fire.
Burning Patterns of Large Fires	
Line Pattern	A fast moving fire with regular or irregular but well-defined perimeter. Possibly some spotting within close proximity to main fire.
Pattern	Considerable spotting well ahead of main fire creates a perimeter that is very irregular and difficult to determine. Unusual fire behavior may be expected.
Area Ignition Pattern	Caused by an extremely violent fire which results from the interaction of many spot fires. Blowup conditions usually result.
Burning Period	That part of each 24-hour period when fires spread most rapidly. Typically this is from 10 a.m. to sundown.
Calculated Probabilities	Evaluation of all existing factors pertinent to probable future behavior of a going fire and of the potential ability of available forces to carry out control operations on a given time schedule.
California Conservation Camp Crews	Denote youth hand crews in the conservation camp program, a joint operation between CDF and the California Youth Authority.
Catface	A defect on the surface of a tree resulting from a wound in which healing has not re-established the normal cross section. (See Fire Scar.)

CDF California Department of Forestry and Fire Protection.

CDC California Department of Correction.

Center Firing A technique of broadcast burning in which fires are set in the center of the area to create a strong indraft. Additional fires are then set progressively nearer the outer control lines as indraft builds up. (See Simultaneous Ignition and Area Ignition.)

Chaparral A dense scrub community, normally a permanent type, dominated by evergreen scrubs or dwarf trees.

**Class of Fire
(as to kind of fire)**

Class A Fire in cellulose, including forest fires.

Class B Fire in flammable liquids.

Class C Fire in electrical equipment.

Class D Flammable metals.

**Class of Fire
(as to size of forest
fire)**

Class A .25 acre or less.

Class B .25 acre through 10 acres.

Class C 10.1 through 100 acres.

Class D 100.1 through 300 acres.

Class E 300.1 through 1000 acres.

Class F 1000.1 through 5000 acres.

Class G More than 5000 acres.

Clean Burning Same as Burning Out.

Extended Attack Fire	A one-branch, four-division fire. A fire which burns beyond the first burning period and requires that the initial attack forces be supplemented.
Flareup	Any sudden acceleration of fire spread or intensification of the fire. Unlike blowup, a flareup is of relatively short duration and does not radically change existing control plans.
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.
Foehn	A dry wind with strong downward component. Locally called Santa Ana, north, mono, and chinook.
Follow-up	The action of reinforcing the first firefighters who go to a fire by sending additional personnel or equipment to facilitate suppression. Sometimes called <u>reinforcement</u> .
Forest Fire (legal definition)	As defined in the Public Resources Code: A fire burning uncontrolled on lands covered wholly or in part by time brush, grass, grain, or other inflammable vegetation.
Forest Fire (statistical definition)	Any fire which meets the legal definition of a forest fire (see above), and which is also reportable as a forest fire under existing instructions.
Free Burning	The condition of a fire or part of a fire that has not been checked by natural barriers or by control measures.
Fuel Moisture Content	The quantity of moisture in fuel used to measure the flammability of the fuel.
Fuel Type	An identifiable association of fuel elements of distinctive species, form, size, arrangement, or other characteristics that will cause a predictable rate of fire spread or difficulty of control under specific weather conditions.

Fuelbreak	A wide strip or block of land on which the vegetation has been modified to a low volume fuel type so that fires burning into it can be more readily controlled.
G.P.M.	Gallons per minute.
Ground Fire	Fire that consumes the organic material beneath the surface litter of the forest floor, e.g., a peat moss fire.
Gradient Wind	A free flowing prevailing wind moving at an elevation (2000 feet and more above the surface) where it is not influenced by topography.
Hazard	In forest fire control, a fuel complex defined by kind, arrangement, volume, condition, and location that forms a special threat of ignition or of suppression difficulty.
Hazard Reduction	Any treatment of a hazard that reduces the threat of ignition and spread of fire.
Head of a Fire	The most rapidly spreading portion of a fire's perimeter, usually to the leeward or upslope. (See Parts of a Fire.)
Heat Kill	The death of all or part of the foliage of brush or trees by the heat from a fire without any sign of char or burn.
Heat Transfer	The process by which heat is imparted from one body to another.
Heavy Fuels	Fuels of large diameter such as snags, logs, and large limbwood, which ignite and are consumed more slowly than flash fuels. Also called coarse fuels.
Held Line	All worked control line that still contains the fire when mop-up is completed. Excludes lost line, natural barriers not backfired, and unused secondary line.
Heliport	A permanent or semi-permanent base of operations for helicopters.
Helitank	The tank attached to the helicopter containing water or fire retardant chemicals for dropping on fires.

Holdover Fire	A fire that remains dormant for a considerable time. Also called hangover or sleeper fire.
Hotspot	A particularly active part of a fire.
Hotspotting	Checking the spread of a fire at points of more rapid spread or special threat. It is usually the initial step in prompt control with emphasis on first priorities.
Incendiary Fire	A fire willfully set to burn vegetation or property.
Independent Action	Suppression action by other than the regular fire control organization or cooperators.
Indirect Attack	See Indirect Method and Parallel Method.
Indirect Method	A method of suppression in which the control line is located along natural firebreaks, favorable breaks in topography, or at considerable distance from the fire and the intervening fuel is burned out (see Burning Out). The strip of fuel to be burned out is wider than in the parallel method and usually allows a choice of the time when the burning out will be done (see Parallel Method).
Initial Attack Fire (I.A.F.)	A fire that is controlled by the first dispatched forces without need for major reinforcements and within the first burning period.
Inversion	A layer of comparatively warm air overlaying cool air. This is an atmospheric condition. The atmosphere in an inversion will resist vertical motion.
Knock Down	To reduce flame or heat on the more vigorously burning parts of a fire edge.
Large Damaging Fire	A fire of at least 300 acres which burned at least 30 acres of timber, 300 acres of brush, or 1500 acres of woodland or grass, or in which at least 3000 CDF person hours were expended.
Liaison Officer	Is the point of contact for assisting and cooperating agency representatives.

Light Burning	Periodic broadcast burning intended to prevent accumulation of fuels in quantities that would cause excessive damage or difficult suppression in the event of accidental fire.
Lightning Fire Litter	A fire caused directly or indirectly by lightning. The top layer of the forest floor, composed of loose debris of dead sticks, branches, twigs, and recently fallen leaves or needles little altered in structure by decomposition.
Local Winds	Winds peculiar to a particular place.
Lookout	(1) A person designated to detect and report fires from a vantage point. (2) A lookout station.
Lookout Tower	A structure to enable a person to be above nearby obstructions to sight. It is usually capped by either a lookout house or observatory.
Major Fire	A two-branch, six division fire. Refers to a fire requiring considerable personnel to extinguish.
Marine Air	Air which has high moisture content and the temperature characteristics of a water surface due to extensive exposure to that surface.
McLeod	A short-handled combination hoe or cutting tool and rake with or without removable blades.
Mop-up	Making a fire safe after it is controlled, such as by extinguishing or removing burning material along or near the control line, felling snags, trenching logs to prevent rolling, etc.
Motorized Firebreak	A low quality roadway along ridges.
Move-up	A pre-arranged <u>system</u> of moving firefighters and equipment in order to have such forces more strategically available for dispatch throughout an area which has been weakened by the earlier dispatch of regular assigned forces.

Mutual Aid

Some form of direct assistance from one fire service to another during a time of fire emergency. In order to be a "mutual" such assistance should follow as a result of an arrangement prior to the need between the agencies involved in which it has been agreed that fire fighting assistance will be rendered from each to the other, generally upon the request of the receiving agency.

Parallel Method

A method of suppression in which a fire line is constructed approximately parallel to and just far enough from the fire edge to enable personnel and equipment to work effectively.

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 portions known as the heel.

Patrol

Effort directed toward permanently assuring that there be no escape of a controlled fire; includes activity after the fire is declared to be controlled in mopping-up around the fire line and such close visual watch of the line as is deemed necessary.

Planned Initial Attack Zone

An area surrounding an aircraft base within a 20 minute flight radius from the base, estimated for the average speed of the particular types of aircraft from the time of takeoff.

Point of Attack

That part of the fire on which work is started when suppression forces arrive.

Prescribed Burning

Skillful application of fire to natural fuels under conditions of weather, fuel moisture, soil moisture, etc., that will allow confinement of the fire to a predetermined area and at the same time will produce the intensity of heat and rate of spread required to accomplish certain planned benefits to one or more objectives, of silviculture, wildlife management, grazing hazard reduction, etc.

Its objective is to employ fire scientifically to realize maximum net benefits at minimum damage and acceptable cost.

**Progressive
Hose-lay**

A hose-lay in which double shutoff Y's or T's are inserted in the main line at intervals and lateral lines are run along the fire edge, thus permitting continuous application of water during extension of the lay.

**Progressive Method
of Line Construction**

A system of organizing personnel to build a fire line in which they advance without changing their relative positions in line. There are two principal methods of applying the system: (1) Work is begun with a suitable space, such as 15 feet, between firefighters. Whenever one firefighter overtakes another, all those ahead move one space forward and resume work on the uncompleted part of the line. The last firefighter does not move ahead until the work is complete in his or her space. Forward progress of the crew is coordinated by a crew leader. This method of organization is termed moveup. (2) Each firefighter does one to several licks or strokes of work and moves forward a specified distance. The distance is determined by the number of personnel equipped with a given tool and the number of licks needed per unit of line to complete the work for that tool.

Protection Boundary

The exterior boundary of an area for which a given agency has assumed primary fire attack responsibility.

Pulaski

A combination chopping and trenching tool widely used in fire line construction; a light singlebit axe with a straight handle, having a narrow axelike trenching blade attached to its head.

Pump-power

A gasoline operated pump especially designed for use in forest fire control, either to be carried by a man or to be transported on skids or a trailer.

Punky

A soft, weak, often spongy wood condition caused by decay.

Radiation

The transfer of energy (heat) through space.

Unit

(In terms of fire protection) the administrative area supervised by a Unit Chief.

Rate of Speed	The relative activity of a fire in extending its horizontal dimensions. It is expressed as the rate of increase of the total perimeter of the fire, as the rate of forward spread of the fire front, or as the rate of increase in area, depending on the intended use of the information. Usually it is expressed in chains per hour or acres per hour for a specific period of the fire's history.
Reburn	Subsequent burning of an area in which fire has previously burned but has left flammable fuel that ignites when burning conditions are more favorable.
Rehabilitation	The re-establishment or improvement of the land. It may take place naturally through reproductive processes of the existing flora or be induced by man through seeding or transplanting, wildlife habitat repair, etc.
Relative Humidity	The ratio of the amount of moisture in a given volume of space to the amount that volume would contain if it were saturated. The ratio of the actual vapor pressure in the saturated vapor pressure.
Responsible Fire Agency	The agency assuming attack responsibility for the control of fires upon any particular land area.
Risk	The chance of a fire starting as determined by the presence and activity of causative agents.
Running	Behavior of a fire spreading rapidly with a well-defined head.
Run Off	(1) The total stream discharge, including both surface and sub-surface flow, usually expressed in acre feet. (2) The rate at which water is discharged from a drainage area, usually expressed in cubic feet per second per square mile of drainage area.
Safety Island	An area used for escape in the event the line is out-flanked 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 island close at hand by allowing the fuels inside the control line to be consumed before going ahead.

Scratch Line	A fast initial, continuous fire line constructed to hold the fire temporarily until a more secure line can be established.
Severity Index	A number that indicates the relative net cumulative effects of daily fire danger on the fire load for an area during a selected period, such as a fire season.
Silt	Small mineral soil grains, the particles of which range in diameter from 0.05 to 0.002mm (or to .002mm in the international system. Formerly 0.0005mm.)(?)
Simple Hose-lay	A hose-lay consisting of consecutively coupled lengths of hose without laterals. (See Progressive Hose-lay.)
Simultaneous Ignition	A technique of broadcast burning or backfiring by which the fuel on an area to be burned is ignited at many points simultaneously and the sets are so spaced that each receives timely stimulation by radiation from the adjoining sets. By such techniques, all burn together quickly and a hot, clean burn is possible under unfavorable burning conditions where single sets would not spread. (See Area Ignition.)
Size-up	The observation and evaluation of existing factors which, as affected by assumed future conditions, will affect all or any of the problems involved in the control of a fire. To estimate the needed actions and facilities required to extinguish a fire.
Slash	Debris left after logging, pruning, thinning, or brush cutting. It includes log, chunks, bark, branches, stumps, and broken understory trees or brush.
Sleeper Fire	A fire that remains dormant for a considerable time. Also called a holdover fire.
Sloper	The extension of a fire on the ground over a crest and generally downslope beyond a line where it was intended or expected the fire would cease. Such a movement of continuous burning over a barrier in a generally upslope direction would be more properly considered an "escape."
Smoke-jumper	A firefighter who travels to fires by aircraft and parachute.

Smoldering	Behavior of a fire burning without flame and barely spreading.
Snag	(1) A standing dead tree from which the leaves and most of the branches have fallen or a standing section of a stem of a tree broken off at a height of 20 feet or more. (2) A sunken log or a submerged stump.
Spot Fire	A fire which is caused by the transfer of burning material through the air into flammable material beyond the perimeter of the original fire.
Spotting	Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the original fire.
Spread Index	A number related to the relative rate of forward movement of surface fires.
Standby Crew	A crew waiting to be dispatched.
State Fire Disaster Plan	A statewide fire disaster plan prepared and maintained by the California Office of Emergency Services (OES) in cooperation with the numerous fire service organizations throughout California.
Suppress a Fire	Extinguish a fire or confine the area it burns within fixed boundaries.
Suppressant	Water or chemical solution which is applied directly to burning fuel. Intended to extinguish rather than retard.
Surface Fire	Fire that burns surface litter, small vegetation, and other loose debris of the forest floor.
Strip-burning	(1) Setting fire to a narrow strip of fuel adjacent to a control line and then burning successively wider inside as the preceding strip burns out. (2) Burning only a narrow strip or strips of slash through a cutting unit and leaving the remainder.
Tactics of Attack	The details of action (strategy embraces the broad application of plans and action to a problem). Several types of tactics of attack are listed below.

Pincer Action	Direct attack around a fire in opposite directions by two or more work units.
Tandem Action	Direct attack along a part of the fire perimeter by engines, dozers, and crews, one following another.
Envelopment Action	Taking simultaneous suppression action around the entire perimeter of the fire.
Protective Action	Concentrations of protection of separate flammable property within the broad fire area.
Confining Action	A concentrated attack on a key or critical portion of the fire for the purpose of confining the spread in that area.
Flanking Action	An attack made along the flanks of a fire when an attack on the head of the fire is not feasible.
Area Control Action	An indirect attack in which fire intensity and difficult topography make it necessary to establish control lines that encompass a natural area well in advance of the fire perimeter.
Thunderhead	A popular term for the anvil of a cumulonimbus cloud, but frequently applied to the entire cumulous cloud which has developed an anvil top or ice crystal stage. Lightning and precipitation usually occur at this stage.
Tie-in	Connecting a control line to another line or an intended fire control barrier.
Topography	The land surface configuration including man-made and natural features.
Trench	A ditch dug on a slope below a fire, designed to catch rolling burning material.
Truck-trail	A substantial transportation route for fire type motor vehicles. Built prior to a fire.
Turbulance	Irregular air motion; for example, that produced when air flows over the uneven surface of the earth. It gives rise to gusts and lulls in the wind.
Types of Fires	The three types of fires are: initial attack, extended attack, and major fire.

Uncontrolled	The condition of a fire or part of a fire that has not been checked by natural barriers or by control measures.
Undercut Line	A fire line below a fire on a slope. Normally requires trenching (see Trench). Also called underslung line.
Unstable Air	Air in which vertical currents when started, will continue and become intensified. Evidenced by cumulous clouds, gusty winds, dust devils, and fire whirlwinds.
Watershed	The name for an area, referring to the manner in which its soil, topography, and vegetation have contributed to the retention and flow of water that it has received as precipitation.
Water Tender	A specialized truck on which is mounted a metal tank, used to transport water, power pump, and hose equipment to fires.
Water-supply Map	A map showing location of supplies of water readily available for pumps, water tenders, engines, and incident base use.
Wet Water	Water with added chemicals, called wetting agents, that increase its spreading and penetrating properties.
Wetting Agents	Chemicals that reduce the surface tension of water and cause it to spread and penetrate more effectively.
Wildland	(1) Uncultivated land, excepting fallow lands. (2) Chiefly timber, range watershed, and brush lands not under cultivation.
Wild Fire	An uncontrolled fire burning on wildland or in other continuous vegetation.
Whirlwind	A spinning, moving column of ascending air rising from a vortex. It may carry aloft smoke, debris, and flames over a fire area. They range from a foot or two in diameter to small tornadoes in size and intensity. (Also called fire whirl or fire devil.)

GLOSSARY AND ACRONYMS - HAZARDOUS MATERIALS

AB	Assembly Bill
AFFF	Aqueous Film Forming Foam
BLEVE	Boiling Liquid Expanding Vapor Explosion
CAA	Clean Air Act (1970)
CAER	California Administrative Code
CAL-OSHA	California Occupational Safety and Health Administration
CDF	California Department of Forestry and Fire Protection
CEQ	Council on Environmental Quality
CEQA	California Environmental Response, Compensation, and Liability Act (1981)
CFR	Code of Federal Regulations
CHEMTREC	Chemical Transportation Emergency Center
CHRIS/HACS	Chemical Hazards Response Information System/Hazard Assessment Computer System
CMA	Chemical Manufacturer's Association
CRWQCB	California Regional Water Quality Control Board
CWA	Clean Water Act (1972) = FWPCA
DFG	California Department of Fish and Game
DHS (DOHS)	Department of Health Services
DOT	Department of Transportation
DOT ERG	Department of Transportation Emergency Response Guidebook
EOC	Emergency Operations Center
EOD UNIT	Explosives Ordinance Detection Unit
EPA	Environmental Protection Agency
ERD	Emergency Response Division (EPA)
FAA	Federal Aviation Authority
FEMA	Federal Emergency Management Association
FHSA	Federal Hazardous Substance Act (1960)
FWPCA	Federal Water Pollution Control Act (1972) = CWA
HAZMAT	Hazardous Material
HHS	United States Department of Health and Human Services
HWMB	Hazardous Waste Manifest Branch (of DHS)
ICS	Incident Command System
IDLH	Immediately Dangerous to Life or Health
IMO	International Maritime Organization
LC₁₀*	Lethal Concentration, low
LC₅₀*	Lethal Concentration, 50%
LD₅₀*	Lethal Dosage 50%
NCRIC	National Chemical Response and Information Center (CMA)
NEPA	National Environmental Policy Act (1970)
NIIMS	National Interagency Incident Management System
NIOSH	National Institute of Occupational Safety and Health
NOS	Not Otherwise Specified
NRC	National Response Center
OES	Office of Emergency Services (State or County)
ORM	Other Regulated Material

OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Act (1970)
PIO	Public Information Officer
PPE	Personal Protective Equipment
RCRA	Resource Conservation and Recovery Act (1976)
RQ	Reportable Quantity
SAC	State Agency Coordinator
SARA	Superfund Amendments and Reauthorization Act (1986)
SB	Senate Bill
SCBA	Self-Contained Breathing Apparatus
SDWA	Safe Drinking Water Act (1974)
SLC	State Lands Commission
SWRCB	State Water Resources Control Board
TLB	Threshold Limit Value
TSCA	Toxic Substances Control Act (1976)
TS/CD	Toxic Substances Control Division
T/SDF	Treatment, Storage and Disposal Facility
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency (EPA)
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service
USNRC	United States Nuclear Regulatory Commission

HAZMAT GLOSSARY

Acceptable Risk - A risk, judged by society to be outweighed by corresponding benefits, or one that is of such a degree that it is considered to post no significant potential for adverse effects.

Accident Site - The location of an unexpected occurrence, failure, or loss, either at a plant or along a transport route, resulting in a release of hazardous materials.

Acute Toxicity - Any poisonous effect produced by a single short-term exposure, that results in severe biological harm or death.

Antagonism - Mutual resistance, being an opposing principle, force or factor.

Antagonistic - $1 + 1 < 2$, 2 opposing forces counteract or negate each other.

Asphyxiant - A nontoxic gas that can cause unconsciousness or death by lowering the concentration of oxygen in the air, or by totally replacing the oxygen in breathing air.

Autoignition Point - The minimum temperature required to initiate or cause self-sustained combustion in any substance in the absence of a spark of flame.

Bioaccumulation - Absorption and storage of toxic chemicals from the environment in an organism (often due to the solubility of the chemical in body fat).

Buffer Zone - An area of land that surrounds the hazardous waste facility on which certain usage's and activities are restricted to protect the public health and safety, and the environment from existing or potential hazards caused by the migration of hazardous waste.

By-Product - Material produced or generated in an industrial process in addition to the principal product.

Buddy System - One employee observes the actions of another to provide quick assistance if it is needed (29 Code of Federal Regulations 1910).

Carboxy - Hemoglobin Test - blood gas level test.

Carcinogen - A cancer-producing substance.

Chemical Hazards Response Information System/Hazard Assessment Computer System (CHRIS/HACS) - Developed by the Coast Guard, HACS is a computerized model of the 4 CHRIS manuals (containing chemical-specific data), and is used by Federal OSC's during a chemical spill/response.

Chemical Incompatibility - Chemicals incapable of coexisting harmoniously, gives a harmful reaction.

Chemical Reactivity - The tendency of the chemicals to interact (by oxidation, reduction, ionization, combustion, hydrolysis, condensation, rearrangement, etc.), and form an end product which may be harmful or beneficial.

Chronic Toxicity - Long lasting or frequently recurring as a disease. A poisonous effect resulting from long-term exposure to low dosages of toxic substances. Changes are usually subtle.

Cocarcinogen - (Or promoter) - Not a carcinogen by itself, but potentiates the effects of a carcinogen.

Combustibility - The ability of a substance to undergo rapid chemical combination with oxygen. Usually accompanied by the liberation of heat and light.

Combustion Product - Material produced or generated during the burning or oxidation of a material.

Command Post - Facility at a safe distance upwind from an accident site where the on-scene coordinator, responders, and technical representatives can safely carry out their duties.

Community Awareness and Emergency Response (CAER) - A program developed by the Chemical Manufacturers Association to provide guidance for chemical plant managers to assist them in taking the initiative in cooperating with local communities to develop integrated hazardous materials response plans.

Containerizing - The act of cleaning up the contained material, or transferring the material to another container.

Containment - The act of preventing or confining the spread, or further spread, of the hazardous material.

Contamination - Pollution; any substance accidentally or unwillingly introduced into air, water, or food products, which has the effect of rendering them toxic or otherwise harmful.

Contingency Plan - A document developed to identify and catalog all the elements required to respond to an emergency; defines tasks and responsibilities, and serves as response guide.

Corrosive - The ability to cause destruction of living tissue or many solid materials surfaces by chemical action.

Cryogenic - Gases, usually liquefied, that induce freezing temperatures of 150[°]F and below (liquid oxygen, liquid helium, liquid natural gas, liquid hydrogen, etc.).

Decontamination - The process of removing the hazardous substance to prevent adverse health, safety, or environmental effects; 3 levels based on exposure.

Level I:	When contamination is likely but not known.
Level II:	When contamination is known to have occurred, but skin contact and/or irritation is <u>not</u> evident.
Level III:	When contamination is known to have occurred <u>and</u> skin contact and/or irritation <u>is</u> evident.

Delayed Toxic Exposure Effect - The result or reaction to the toxin occurs anywhere from a few days to many years after exposure.

Deleterious Substances - Substances not normally harmful to humans that may be harmful to the environment.

Dermal Toxicity - The ability of a pesticide or toxic chemical to poison people or animals by touching the skin.

Dike - An embankment or ridge, natural or manmade, used to prevent the movement of liquids, sludges, solids, or other materials.

Dispersion - To spread, scatter, or diffuse through air, soil, or surface or ground water.

Dose - The amount of substance ingested, absorbed, and/or inhaled per exposure period.

Downwind - The area directly in the path of the wind from the incident site.

Emergency Response - Response to any occurrence which could result in a release of a hazardous substance (29 Code of Federal Regulations 1910).

Etiologic - A disease-causing agent.

Exothermic - A process or chemical reaction which is accompanied by the evolution of heat, i.e.: combustion reactions.

Explosiveness - Any substance or combination of substances, which upon impact or ignition yields a violent expansion of gases and heat.

Extremely Hazardous Material - Any substance or combination of substances which if human exposure should occur, may likely result in death, disabling personal injury, or serious illness (caused by the quantity, concentration, or chemical characteristics of the material).

Flammable Material - Any solid, liquid, gas, or vapor that will ignite easily and burn rapidly.

Flammable Range - The portion of material in air between the upper and lower flammable limits.

Flashpoint - The minimum temperature of a liquid at which it gives off vapors sufficient to form an ignitable mixture with air.

Frequency - How often, could be chronic or acute.

Hazard - Any situation that has the potential for doing damage to life, property, and/or the environment; the likelihood of toxicosis occurring under the conditions of usage and likelihood of toxicosis occurring under the conditions of usage and likelihood of exposure to a particular toxicant.

Hazardous Chemical (HazMat) - A substance or combination of substances that may cause or contribute to an increase in mortality, irreversible, or incapacitating illness, or pose a present or potential hazard to health, safety, or the environment.

Hazardous Substance - Any substance, so designated by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or the Department of Transportation (DOT), exposure to which may result in adverse effects on health (29 Code of Federal Regulations 1910).

Hazardous Waste - A waste or combination of wastes that may cause or contribute to, an increase in mortality, or an irreversible or incapacitating illness; or that poses a present or potential hazard when improperly treated, stored, transported, or disposed of.

Hazardous Waste Facility - Any structure, other appurtenances, and improvements on the land, and any contiguous land used for the treatment, transfer, or storage of hazardous waste.

Hazardous Waste Operation - Any operation involving employee exposure to hazardous wastes, hazardous substances, or a combination thereof (29 CFR 1910).

Health Hazard - Any chemical or chemical mixture, scientifically established, that causes acute or chronic health effects. Includes: carcinogens, toxics, irritants, corrosives, etc., and agents which damage lungs, skin, eyes, or mucous membranes (29 CFR 1910).

Ignitable - Capable of being set afire or of bursting into flame spontaneously, or by interaction with another substance or material.

Immediate Toxic Exposure Effect - The reaction to the toxin occurs within seconds to hours after contact or exposure.

Immediately Dangerous to Life or Health (IDLH) - Any condition that poses an immediate threat to life, or produces acute or severe health effects (29 CFR 1910).

Incident Commander - The individual responsible for the management of ICS operations.

Incident Command System (ICS) - The combination of facilities, equipment, personnel, procedures, and communications within a common organizational structure with responsibility for management of those resources at an incident scene.

Infectious Waste - Laboratory waste, including etiologic cultures; pathologic specimens, including human or animal tissue, blood elements, excreta, secretions containing etiologic agents, attendant disposable fomites; surgical specimens including animal parts or tissues which may contain etiologic agents, and attendant disposable fomites; equipment, instruments, utensils, and other disposable materials likely to transmit etiologic agents from isolated patients (human or animal) suspected or diagnosed as having a communicable disease;/. human dialysis waste materials, etiologically infected animal carcasses; any other material determined to be contaminated with etiologic agents.

Ingestion - the act of eating, absorption occurs through the digestive tract.

Inhalation Toxic Exposure - When exposure to a toxic material occurs through breathing the toxic fumes, vapor, dust, or particulate matter into the lungs.

LC₅₀* - The lethal concentration (LC), to 50% of the exposed lab animal population, of a toxicant in feed or water.

LD₅₀* - The lethal dose (LD) of a toxicant to 50% of the exposed lab animal population.

Local Toxic Exposure - When the toxic action occurs at the point of contact, from acute or chronic exposure. Threshold of tolerance dependent upon: the type of toxicant, concentration, duration of exposure and dosage, i.e.: rash or other visible irritation.

Logistics Chief - Manages support units for the incident, including personnel, facilities and equipment.

Mutual Aid - An agreement normally between neighboring agencies to supply specifically agreed upon aid or support in an emergency situation. It is usually a reciprocal agreement.

National Response Center (NRC) - A communications center for activities related to response actions; located at Coast Guard headquarters in Washington, D. C. 24 hour phone number for reporting actual or potential pollution incidents is 800/424-8802 or 202/426-2675.

National Stabilization - When the incident, if not interfered with, is allowed to run its natural course (no action is taken by responders). Used for a "no-fight" situation.

Off-Scene Coordinator (OSC) - The Federal official predesignated by EPA or USCG to coordinate and direct Federal responses and removal actions from releases of hazardous substances.

Operations Chief - Assists in developing and implementing incident strategy, and is responsible for the direct management of incident tactical activities.

Oxidizing - A substance containing oxygen that gives it up readily (plus the halogens because they will support combustion).

Oxygen Deficiency - That concentration of oxygen insufficient to support life, where an air supplying respirator must be worn (29 CFR 1910).

Parts Per Billion (PPB) - Equals 1 ug/kg or 1 ug/liter.

Parts Per Million (PPM) - Equals 1 mg/kg or 1 mg/liter.

Persistence - Long lasting existence of a substance in the environment before chemical breakdown or biodegeneration occurs. Some pollutants remain dangerous indefinitely.

Persistent Toxic Substance - A toxic substance that resists natural degradation or detoxification.

Pesticide - Any substance used to control pests ranging from rats, weeds, and insects, to algae and fungi. Pesticides can accumulate in the food chain and can contaminate the environment if misused.

Plume - A vapor cloud formation which has shape and buoyancy.

Point Source - Any discernible, confined, and discrete conveyance (pipe, ditch, channel, tunnel, conduit well, etc.) from which pollutants are, or may be, discharged. This term does not include return flows from irrigated agriculture.

Potentiation - A type of synergism where the potentiator is not usually toxic in itself, but has the ability to increase the toxicity of other chemicals. Isopropanol, for example, is not hepatotoxic (toxic to the liver) in itself, but in combination with carbon tetrachloride, isopropanol increases the toxic response to the carbon tetrachloride.

Pulmonary Edema - The condition of having fluid in the lungs. This can cause death.

Radioactive - The spontaneous disintegration of unstable nuclei accompanied by emission of nuclear radiation.

Resource Conservation and Recovery Act (RCRA) - Established a framework for the proper management and disposal of all wastes; directed EPA to identify and list hazardous wastes; developed the manifest system for waste transportation.

Responsible Party - The person or agency found legally accountable for the clean-up of the incident.

Risk - The probability that an adverse effect will occur under specified conditions.

Selective Toxicity - The capacity of a chemical to injure one kind of living matter without harming another, even though the two may be in intimate contact.

Subchronic Toxicity - Toxic effects from an exposure over a period greater than 10 percent but less than 67 percent of a person's lifetime.

Superfund Amendments and Reauthorization Act of 1986 (SARA) - Includes detailed provisions for community planning.

Synergism - A cooperative action of two substances that results in a greater effect than both of the substances could have had acting independently. $1 + 1 = 2.5$.

Synergistic Effect - The combined effect of two chemicals is greater than the sum of the effect of each agent given alone.

Systemic Toxic Exposure - Toxic affects the body as a whole spread through the bloodstream.

Toxic - Anything harmful, destructive, deadly, or poisonous to the body. Also used to describe the effects of toxicants (the clinical signs).

Toxic Substances - A chemical or mixture that may present an unreasonable risk of injury to health or the environment.

Toxicity - Refers to the amount or dosage of a toxicant that causes toxic effects, e.g.: mg/kg body weight or ppm in diet.

Toxicosis - The disease state which results from exposure to a toxicant.

Toxin - Biotxin - Toxicant of biological nature.

Treatment - Any method, technique, or process which changes the physical, chemical, or biological character or composition of any hazardous waste, or removes or reduces its harmful properties or characteristics for any purpose.

Upwind - The area 180° from the direction of the wind.

Vapor Dispersion - The movement of vapor clouds in air due to wind, gravity spreading, and mixing.

Vulnerability - The susceptibility of life, the environment, and/or property, to damage by a hazard.

Water Reactive - Having properties of, when contacted by water, reacting violently, generating extreme heat, burning, exploding, or rapidly reacting to produce an ignitable, toxic, or corrosive mist, vapor, or gas.

HAZMAT GLOSSARY

PH	A scale of 1-10 of how corrosive a material is. A ph of <2 or 12+ is difficult to mitigate.
HAZCAT	A series of field tests to categorize a material. It defines ph, flammability, etc.
CAMEO	Computer Aided Management of Emergency Operations. McIntosh computer, federally funded database of materials. Has a computer simulation of air dispersal.
SPECIALIST	Firefighter or health person trained to deal with hazmat.
HAZMAT	Slang for hazardous material for picking up spills.
PILLOW	An absorbent material for picking up spills.
GAS TECH	A sniffer for detecting flammable material vapors.
FLAMMABLE	Material with a flash point of 100 degrees or lower. (It is the vapor which ignites.)
SEWER	Drains and pipes which carry material to a sewer plant. Often confused with flood control drains.
DECON	Decontamination, the act of rinsing hazardous material from personnel or injured.
PEL/TLV/IDLH	Measurements of exposure.
PEL	Permissible Exposure Level. Established by OSHA, based on white male, 8 hours a day 20 year career.
TLV	Time Limited Value.
TMV	Time Weighted Average.
IDLH	Immediately Dangerous to Life and Health. Used to determine evacuation.
HAZARDOUS WASTE	Different from hazardous material by virtue of being a spill or unused material.
BOOM	Same as a pillow only a long barricade. Used to keep a material out of a drain or capture on the surface.
DOHS	Department of Health Services

MITIGATION	Act of controlling an incident.
REMEDIATION	Act of cleaning up the effects of mitigation.
RELEASE	Into the air.
SPILL	On the ground.
TOXIC	Poses a health hazard if inhaled, ingested or absorbed.
VOLATILE	Has a high vapor value, wants to become a gas.
FLOOD CONTROL DITCH	System either natural or man-made to convey rain water.
EPA	Environmental Protection Agency. May help with funding but only on large incidents.
RESPIRATOR	Filter for breathing.
SHELTER-IN-PLACE	Method of mobilizing a group of people to gather together in a room, seal it off, and await the passing of a vapor cloud.
HOT ZONE	Where the bad stuff is located.
WARM ZONE	Location of decon staging.
COLD ZONE	No contaminate in this area.
DOT BOOK	Department of Transportation book on materials. Contains names, spelling and very simplified information.
CLEAN-UP	Same as remediation.
AQMD	Air Quality Management District. Regulates emissions into the air.
STORM DRAIN	What gutters drain into before the flood control ditch.
PIG	A skinny boom.
LEVEL A, B, C, D	Levels of protective clothing.
A	Gas Tight.
B	Splash protection.
C	Respirator.
D	Cotton Smock.

CAER	Community Awareness and Agency Response. Conveys information to the public.
F & G	Fish and Game.
HNU	A device to detect organic vapor.
WQCB	Water Quality Control Board.
Chemtrec	Chemical Transportation Emergency Center. Industry funded data system. Can match you with the manufacturer of or transporter of chemical. 1-800-424-9300.

GLOSSARY - INCIDENT COMMAND SYSTEM

Agency Representative	Individual assigned to an incident from an assisting or cooperating agency who has been delegated full authority to make decisions on all matters affecting that agency's participation at the incident. Agency Representatives report to the Incident Liaison Officer.
Airtanker	Any fixed wing aircraft certified by the FAA as being capable of transporting and delivering fire retardant solutions.
Allocated Resources	Resources dispatched to an incident that have not yet checked in with the Incident Communications Center.
Assigned Resources	Resources that have checked in and been assigned work tasks on an incident.
Assisting Agency	An agency directly contributing suppression, rescue, support, or service resources to another agency.
Available Resources	Resources assigned to an incident and available for an assignment.
Base	That location at which 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.
Branch	That organizational level having functional/geographic responsibility for major segments of incident operations. The Branch level is organizationally between Sections and Division/Group.
Brush Patrol Unit	Any light, mobile unit, having limited pumping and water capacity for off-road operations.
Camp	A geographical site, within the general incident area, separate from the base, equipped and staffed to provide food, water, and sanitary services to incident personnel.

Clear Text	The use of plain English in radio communications transmissions. No ten codes or agency specific codes are used when using clear text.
Command	The act of directing, ordering, and 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, who report directly to the Incident Commander.
Company	Any piece of equipment having a full complement of personnel.
Communications Unit	A vehicle (including a trailer on a mobile van) used to provide the major part of an Incident Communications Center.
Coordination	The process of systematically analyzing a situation, developing relevant information and informing appropriate command authority (for its decision) 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 in and of itself involve command dispatch actions. However, personnel responsible for coordination may perform command or dispatch functions within limits as established by specific agency delegations, procedures, legal authority, etc.
Cooperating Agency	An agency supplying assistance other than direct suppression, rescue, support, or service functions to the incident control effort (e.g., Red Cross, law enforcement agency, telephone company, etc.).
Crew Transport	Any vehicle capable of transporting personnel in specified numbers.
Dispatch	The implementation of a command decision to move a resource or resources from one place to another.
Dispatch Center	A facility from which resources are directly assigned to an incident.

Division	That organization level having responsibility for operations within a defined geographic area or with functional responsibility. The Division level is organizationally between the Strike Team and the Branch. (See also Group.)
Dozer Company	Any dozer with a minimum complement of two persons.
Engine	Any ground vehicle providing specified levels of pumping water and hose capacity but with less than the specified level of personnel.
Engine Company	Any ground vehicle providing specified levels of pumping water, hose capacity, and personnel.
FIREMOD	A computer program which, with given information, will predict an hourly rate of spread from a point.
Flycrew	A handcrew of predetermined size transported to an incident via helicopter.
Food Dispenser	Any vehicle capable of dispensing food to incident personnel.
Fuel Tender	Any vehicle capable of supplying fuel to ground or airborne equipment.
General Staff	The group of incident management personnel comprised of: <ul style="list-style-type: none"> The Incident Commander The Operations Chief The Planning Chief The Logistics Chief The Finance Chief
Group	A functional division (e.g., air support, salvage, structure protection, etc.).

Hand Crew	Predetermined individuals that are supervised, organized and trained principally for clearing brush as a fire suppression measure.
Heavy Equipment Transport	Any ground vehicle capable of transporting a dozer.
Helibase	A location within the general incident area for parking, fueling, maintenance and loading of helicopters.
Helitack	A crew of three or more individuals who may be assigned to operations.
Helicopter Tender	A ground service vehicle capable of supplying fuel and support equipment to helicopters.
Helispot	A location where a helicopter can take off and land. Some helispots may be used for temporary retardant loading.
Incident Action Plan	The Incident Action Plan, which is initially prepared at the first meeting, contains general control objectives reflecting the overall incident strategy and specific action plans for the next operational period. When complete, the Incident Action Plan will have a number of attachments.
Incident Commander	The individual responsible for the management of all incident operations.
Incident Command Post (ICP)	That location at which the primary command functions are executed and usually collocated with the incident base.
Incident Control Operations	The combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure with responsibility for the management of assigned resources to effectively accomplish the stated objective pertaining to an incident.
Initial Attack	Resources initially committed to an incident.
IR	A heat detection system used for fire detection, mapping, and hot spot identification.

IR Groundlink	A capability through the use of a special mobile ground station to receive air-to-ground infrared imagery for interpretation.
Jurisdictional Agency	The agency having jurisdiction and responsibility for a specific geographical area.
Message Center	The message center is part of the 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 administration and tactical traffic.
Mobilization Center	An off-incident location at which emergency service personnel and equipment are temporally located pending assignment, release, or reassignment.
Multiagency Coordination System (MACS)	The combination of facilities, equipment, personnel, procedures, and communications integrated into a common system with responsibility for coordination of assisting agency resources and support to agency emergency operations.
NOAA Weather Station	A mobile weather data collection and forecasting facility (including personnel) provided by the National Oceanic and Atmospheric Administration which can be used within the incident area.
Operations Coordination Center (OCC)	The primary facility of the Multiagency Coordination System. It houses the staff and equipment necessary to perform the MACS functions.
Operational Period	The period of time scheduled for execution of a given set of operation actions as specified in the Incident Action Plan.
Orthophoto Maps	Aerial photograph corrected to scale such that geographic measurements may be taken directly from the prints. They may contain graphically emphasized geographic features and may be provided with overlays of such features as: water systems, important facility locations, etc.
Out-of-service Resources	Resources assigned to an incident but unable to respond for mechanical, rest, or personnel reasons.

Overhead Personnel	Personnel who are assigned to supervisory positions: Incident Commander, Command Staff, General Staff, Directors, Supervisors, and Unit Leaders.
Planning Meeting	A meeting, held as needed throughout the duration of an incident, to select specific strategies and tactics for incident control operations and for service and support planning.
Radio Cache	A cache may consist of a number of portable radios, a base station, and, in some cases, a repeater stored in a predetermined location for dispatch to incidents.
Reinforced Attack	Those resources requested in addition to the initial attack.
Reporting Locations	Any one of six facilities or locations where incident assigned resources may check in. The locations are: Incident Command Post--Resources Unit (RESTAT), the base, camp, staging area, helibase, or division supervisor for direct line assignments. (Check in at one location only.)
Rescue Medical	Any manned ground vehicle capable of providing emergency medical services.
Resources	All personnel and major items of equipment available or potentially available for assignment to incident tasks on which status is maintained.
RESTAT	An acronym for Resources Unit, a unit within the Planning Section.
Section	The organization level having functional responsibility for primary segments of incident operations such as: Operation, Planning Logistics, and Finance. The Section level is organizationally between Branch and Incident Commander.
SITSTAT	An acronym for the Situation Unit, a unit within the Planning Section.
Staging Area	That location where incident personnel and equipment are assigned on a three minute available status.
Strike Team	Specified combinations of the same kind and type of resources with common communications and a leader.

Task Force

A group of resources with common communications and a leader temporarily assembled for a specific mission.

Technical Specialists

Personnel with special skills who are activated only when needed. Technical Specialists may be needed in the areas of fire behavior, water resources, environmental concerns, resource use, and training areas.

Unit

That organization element having functional responsibility for a specific incident planning, logistic, or finance activity.

Water Tender

Any ground vehicle capable of transporting specified quantities of water.

GLOSSARY - MEDIA

A.P.	Associated Press. A news wire service serving subscribers worldwide with breaking news as well as a daily events calendar.
Adverse News	That news about your agency which is unpleasant to report and which may put the agency in a poor light.
California Dept. of Forestry and Fire Protection	This shall be the proper term used when identifying our organization to the news media.
Editor's Advisory	A special note advising interested media about how to obtain further details, phone numbers for the fire information center, or special information regarding an incident. This is usually sent through the wire services upon your request.
Exclusive	Refers to a story given to one reporter or a select group of news people. A story should not be given to other news representatives when an individual reporter has taken the initiative to procure the story, unless the others show the same initiative and request like information.
Feature Story	A news story, which is not necessarily timely, but focuses on an interesting, humorous, or human interest aspect of a subject.
Filler	Information used by the news media that may be inserted to fill extra space or embellish upon a particular angle.
Lead Story	Usually the most important, most newsworthy story of the day's news, but can also refer to the main story of a given set of related articles.
News Conference	A formal scheduling of reporters and a person whom they wish to question. A news conference should be called only on rare special occasions after serious consideration and for a legitimate reason.
Sidebar Story	A story related to a lead story which either amplifies a minor point made in the lead or focuses on an interesting sidelight.
Stringer	A reporter or photographer removed from a particular news agency, who collects and submits news.

Summary Lead

This is the who, what, why, where, when, and how usually contained in the first, or at least the first two paragraphs of an article.

Tape or Beeper

Usually refers to a recording on tape by a radio or television station for later broadcasting. "Beepers" are frequently given by fire information officers from or near the scene of a major fire.

U.P.I.

United Press International. A news wire service serving subscribers worldwide.

HELITACK OPERATIONS

USED ON INITIAL ATTACK, EXTENDED ATTACK AND MAJOR FIRES

The primary mission of helitack crews is initial attack on fires that are either in areas of poor vehicle access due to terrain or distance. Helicopters can quickly respond to these areas and deploy a crew of firefighters for line construction and then drop water in support of these crews. Helitack crews are often capable of containing small fires without the assistance of additional equipment.

When used in conjunction with airtankers, helitack can construct fire line and back up retardant drops. Its mobility makes helitack a valuable tool for the control of spot fires and for backfiring. Helitack can be used in areas that are unsuitable for airtanker operations.

Manpower and equipment will vary depending on the type of helicopter and the environment. CDF uses UH1-F (type 2) helicopters that are capable of carrying the following under normal conditions:

Pilot	Hand tool complement
2 Fire Captains	Fuses
6-8 Firefighters	Handy-talkies
2 Chain saws	Water bucket (200-300 gallon)
2-3 Rubber backpumps	Fuel for 2 hours flight time

(The Bell UH1-H can carry two additional personnel, but space will be dedicated to additional gear.)

Helicopters are also used for transportation of personnel, hose, and other supplies; mapping and recon; rescue and evacuation; and as aerial ignition devices for backfiring and control burns.

CDF HELICOPTERS

<u>NO.</u>	<u>MAKE & MODEL</u>	<u>HOME BASE</u>
101	BELL UH1-F	HOWARD FOREST
102	BELL UH1-F	KNEELAND
103 (contract)	AS-350 (could change with contract)	BOGGS MT.
106	BELL UH1-F	ALMA
202	BELL UH1-F	BIEBER
205	BELL UH1-H	VINA
301	BELL UH1-F	HEMET-RYAN
404	BELL UH1-F	COLUMBIA

HELITACK BASE INFORMATION

BASE

TELEPHONE

KNEELAND

Star Route Box 17C

Kneeland, CA 95549

(707) 444-2863

HOWARD FOREST

17501 No. Highway 101

Willits, CA 95490

(707) 459-5561

BOGGS MOUNTAIN

P.O. Box 839

Cobb, CA 95426

(707) 928-5484

BIEBER

P.O. Box 36

Bieber, CA 96009

(916) 294-5251

VINA

P.O. Box 180

Vina, CA 96092

(916) 839-2121

COLUMBIA

P.O. Box 390

Columbia, CA 95310

(209) 532-2911

ALMA

19650 Santa Cruz Hwy.

Los Gatos, CA 95030

(408) 354-4806

HEMET-RYAN

36850 Stetson Avenue

Hemet, CA 92343

(714) 652-2066

HISTORICAL FIRES

(partial list)

<u>Year</u>	<u>Name of Fire</u>	<u>County of Origin</u>	<u>Acres Burned</u>	<u>Homes Destroyed</u>	<u>Lives Lost</u>
1923	City of Berkeley	Alameda	130	584	0
1932	Matilja	Ventura	219,000	0	0
1933	Griffith Park	Los Angeles	47	0	25
1943	Hauser Creek	San Diego	13,145	0	11
1953	Rattlesnake	Glenn	1,340	0	15
		County	Acres	Homes	Lives

<u>Year</u>	<u>Name of Fire</u>	<u>of Origin</u>	<u>Burned</u>	<u>Destroyed</u>	<u>Lost</u>
1954	Tunnel No. 6	Sierra	2,300	0	3
1955	Series of timber fires	Humboldt Siskiyou	152,245	13	0
1955	Refugio	Santa Barbara	84,770	20	0
1955	Hacienda	Los Angeles	1,150	0	5
1956	East Highlands	San Bernardino	15,330	5	1
1956	Inaja	San Diego	43,904	0	11
1956	Sherwood	Ventura	9,428	8	0
1956	Newton	Los Angeles	26,169	50	0
1956	Hume	Los Angeles	1,940	9	0
1959	Series of timber fires	Nevada El Dorado	28,399	0	0
1959	Decker	Riverside	1,425	1	5
1960	Homestake	Placer	10,948	10	0
1960	Donner	Nevada	44,812	0	0
1961	Harlow	Mariposa	41,200	106	2
1961	Bel Air	Los Angeles	6,090	484	0
1962	Timberlodge	Fresno	13,145	0	4
1964	Series: Hanley Nuns Canyon, Mt. George	Napa Sonoma	71,601	174	0

<u>Year</u>	<u>Name of Fire</u>	<u>County</u> <u>of Origin</u>	<u>Acres</u> <u>Burned</u>	<u>Homes</u> <u>Destroyed</u>	<u>Lives</u> <u>Lost</u>
1964	Series: Chevy	Los Angeles	11,650	20	0

Chase, Weldon,
Whiting Woods

1964	Coyote	Santa Barbara	61,000	94	1
1965	Series: 9 grass and brush fires	Glenn Napa Sonoma	113,766	41	0
1965	Suncrest	San Diego	1,260	7	0
1966	Wellman	Santa Barbara	93,600	0	0
1966	Round	Lake	20,534	0	0
1966	Concow	Butte	3,120	0	0
1966	Loop	Los Angeles	2,028	0	12
1967	Sence Ranch	San Bernardino	17,431	5	0
1967	Santa Susanna	Ventura	25,000	10	0
1967	Paseo Grande	Riverside	48,639	61	0
1967	Bailiff	Riverside	23,829	8	1
1967	Woodson	San Diego	17,560	30	0
1967	Pine Hills	San Diego	7,030	1	0
1968	Series: Kinsey, Liebre, Bouquet Reservoir	Los Angeles	108,698	0	0
1968	Canyon	Los Angeles	22,197	0	8

<u>Year</u>	<u>Name of Fire</u>	<u>County of Origin</u>	<u>Acres Burned</u>	<u>Homes Destroyed</u>	<u>Lives Lost</u>
1968	Louie	Siskiyou	1,327	5	0
1969	Walker	Riverside	17,000	8	0

1970	Series: 773 fires in 13 days	Statewide	576,508	722	19
1970	Reche	San Bernardino	4,168	3	0
1970	Bear	San Bernardino	53,100	54	0
1971	Romero	Santa Barbara	16,100	0	0
1972	Mud Springs	Mendocino	5,413	0	0
1972	Swasey	Shasta	1,933	4	0
1972	Bradford	Sonoma	1,760	4	0
1973	Boulder	San Diego	8,478	17	0
1975	Badlands	Riverside	20,250	1	0
1975	Village	San Bernardino	18,486	2	0
1975	Grundy	Orange	1,710	3	0
1976	Pendleton	Orange	2,400	10	0
1976	Quarry	El Dorado	38,346	8	0
1976	Skinner Mill	Tehama	70,640	0	0
1976	Jacksonville	Tuolumne	5,307	1	0
1976	Honey	San Diego	1,482	2	0
1977	Sycamore	Santa Barbara	804	234	0
1977	Marble Cone	Monterey	177,866	0	0
1977	Hog	Siskiyou	46,530	0	0

<u>Year</u>	<u>Name of Fire</u>	<u>County of Origin</u>	<u>Acres Burned</u>	<u>Homes Destroyed</u>	<u>Lives Lost</u>
1977	Series: 8 major timber fires in 3 days	Lassen Shasta Siskiyou	141,361	0	0

1978	Estelle	Riverside	935	1	0
1978	Whitmore	Shasta	6,500	0	0
1978	Chreighton Ridge	Sonoma	11,405	64	0
1978	Bull	Riverside	2,773	1	0
1978	Mandeville Canyon	Los Angeles	5,500	18	0
1979	Valerie	Fresno	3,250	1	0
1979	Hesperia	San Bernardino	1,525	25	1
1979	North	Riverside	3,200	7	0
1979	Sierra	San Bernardino	1,500	1	0
1979	Butte	San Bernardino	686	1	0
1979	Spanish Ranch	San Luis Obispo	930	0	3
1979	Creek	Los Angeles	31,500	0	0
1979	Sage	Los Angeles	34,000	0	0
1979	Woodruff	Mendocino	520	1	0
1979	Chili Bar	El Dorado	6,624	1	0
1979	Laurel Canyon	Los Angeles	150	24	0
1979	Laguna	Orange	550	1	0
1980	Tower House	Shasta	2,349	3	0
1980	Riverside	Riverside	500	5	0
1980	Dry Flat	Riverside	28,655	6	0

<u>Year</u>	<u>Name of Fire</u>	<u>County of Origin</u>	<u>Acres Burned</u>	<u>Homes Destroyed</u>	<u>Lives Lost</u>
1980	Turner	Riverside	28,000	7	0
1980	Indian	Riverside	28,200	7	0
1980	Lakeland	Riverside	8,400	4	0

1980	Stable	San Bernardino	5,482	65	0
1980	Series in 2 days: Panorama, Sycamore, Summit, Thunder	San Bernardino	41,472	355	0
1981	Atlas Peak	Napa	22,000	69	0
1981	Grizzly	Lake	4,392	1	0
1981	Granite Springs	Mariposa	590	1	0
1981	Flat	Kern	1,500	3	0
1981	Series in 3 days: Barber, Cottonwood, Murietta, Dawson, Reche	Riverside	29,704	6	0
1981	Swall	Mono	1,900	3	0
1981	Oat Mt.	San Bernardino	17,500	9	0
1982	Siverado	Napa	3,600	1	0
1982	Gypsum Canyon	Orange	16,800	14	0
1982	Laguna Canyon	Orange	30	2	0
1982	Dayton	Los Angeles	54,000	65	0
1982	Haul	Ventura	3,000	0	0

<u>Year</u>	<u>Name of Fire</u>	<u>County of Origin</u>	<u>Acres Burned</u>	<u>Homes Destroyed</u>	<u>Lives Lost</u>
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1983	Port Costa Series	Santa Clara	325	10	0
1983	Fresno #2	Riverside	700	1	0
1984	Lowery	Tehama	2,645	1	0

1984	Quartz	Tuolumne	2,580	1	0
1985	Miller	San Diego	8,000	3	0
1985	Gopher	San Diego	1,200	1	0
1985	Las Pilitas	San Luis Obispo	74,640	9	0
1985	Roblar	San Diego	8,425	2	0
1985	Wheeler #2	Ventura	119,361	13	0
1985	Deer Springs	San Diego	499	7	0
1985	Green River	Orange	750	0	2
1985	Gorda/Rat	Monterey	65,700	6	0
1985	Lexington	Santa Clara	13,360	24	0
1985	Cherry	Monterey	40,231	6	0
1985	Dunne	Santa Clara	520	1	0
1985	Hidden Valley	Lake	1,250	8	0
1985	Delta	Shasta	1,620	3	0
1985	Lucas	Butte	6	1	0
1985	Lafayette	Contra Costa	100	3	0
1985	Lehr	San Diego	200	64	0
1985	Page Mill	Santa Clara	100	13	0

<u>Year</u>	<u>Name of Fire</u>	<u>County of Origin</u>	<u>Acres Burned</u>	<u>Homes Destroyed</u>	<u>Lives Lost</u>
1985	Brown	Butte	0	1	0
1985	Shapiro	Mendocino	10	1	0
1985	Baldwin	Los Angeles	10	52	3
1985	Richins	Butte	0	1	0
1985	High School Road	Sonoma	4	2	0
1985	Anderson	Butte	0	1	0

1985	Estes	Butte	0	1	0
1985	Derrick	El Dorado	1	1	0
1986	Knopki	Del Norte	354	0	
1986	Sites	Colusa	1,600	0	
1986	USFS Assist #10	Placer	400	0	
1986	Tamarack	Shasta	450	0	
1986	Colorado #2	Riverside	1,800	0	
1986	Galvin	Riverside	602	0	
1986	Wilmont	Riverside	1,425	0	
1986	Powerline	Riverside	400	0	
1986	Scout	San Bernardino	900	0	
1986	Tecolote	Los Angeles	3,900	0	
1986	Bradley	Ventura	9,027	0	
1986	Inscription	San Bernardino	4,100	0	
1986	Intake	San Bernardino NF	560	0	
1986	Flinn	San Diego	680	0	
1986	Assist #42	San Diego	1,200	0	

<u>Year</u>	<u>Name of Fire</u>	<u>County of Origin</u>	<u>Acres Burned</u>	<u>Homes Destroyed</u>	<u>Lives Lost</u>
1986	Tecate #18	San Diego	350	0	
1986	Peak	San Diego	1,102	0	
1986	Mine	San Diego	950	0	
1986	Assist #76	San Diego	400	0	
1986	Chimney Rock	San Luis Obispo	450	0	
1986	Salmon	El Dorado	738	0	

1986	Lightning series	Fresno	1,570	0	
1986	Deer	Fresno	11,860	0	
1986	Yosemite #1	Yosemite NP	650	0	
1986	Coulterville	Mariposa	630	0	
1986	Bryant Canyon	Monterey	2,677	0	
1986	Panoche #2	San Benito	1,650	0	
1986	Deer Valley Ranch	Monterey	960	0	
1986	River	Monterey	5,375	1	
1986	USFS Assist	Monterey	2,165	0	
1986	Dutch Kern #30	Kern	540	0	
1986	TOF Assist #1	Alpine	3,500	0	
1986	Hunt	Calaveras	380	0	
1987	Borden	Sacramento	432	0	0
1987	Briceburg	Lassen	411	0	0

<u>Year</u>	<u>Name of Fire</u>	<u>County of Origin</u>	<u>Acres Burned</u>	<u>Homes Destroyed</u>	<u>Lives Lost</u>
1987	Post	Riverside	546	0	0
1987	Lauder	Mendocino	1,400	0	1
1987	Highland	San Diego	506	0	0
1987	Palomar	San Diego	16,100	5	0
1987	Antelope	Riverside	3,275	5	0
1987	Grade	San Diego	2,900	3	0
1987	Chular Canyon	Monterey	410	0	0
1987	Ruby	Los Angeles	10,700	0	0
1987	Silverado	Orange	5,800	0	0
1987	Andesite	Siskiyou	800	0	0
1987	Bearcat	Siskiyou	2,430	0	0
1987	Slater	Siskiyou	4,890	0	0
1987	Fort Copper	Siskiyou	26,840	0	0
1987	Thompson	Siskiyou	9,040	0	0
1987	Laurel	Mono	1,465	0	0
1987	Happy	Siskiyou	300	0	1
1987	Gulch	Siskiyou	14,260	0	0
1987	Big Buck	Siskiyou	475	0	0
1987	Slide	Siskiyou	300	0	0
1987	Elk Lick	Siskiyou	930	0	0
1987	Ten/Bald	Siskiyou	19,100	0	0

<u>Year</u>	<u>Name of Fire</u>	<u>County of Origin</u>	<u>Acres Burned</u>	<u>Homes Destroyed</u>	<u>Lives Lost</u>
1987	China	Siskiyou	3,040	0	0
1987	Grider/Lake	Siskiyou	15,510	0	0
1987	Cliff/Valley	Siskiyou	415	0	0
1987	Kelsey	Siskiyou	4,500	0	0
1987	King/Titus	Siskiyou	52,600	0	0
1987	Cougar-I	Siskiyou	7,505	0	0
1987	Yellow	Siskiyou	47,770	0	0
1987	Glasgow	Siskiyou	13,370	0	0
1987	Nielon	Siskiyou	1,490	0	0
1987	Hotelling	Siskiyou	16,075	0	1
1987	St. Claire	Siskiyou	8,600	0	0
1987	Lost	Shasta	23,000	0	0
1987	Freaner	Shasta	425	0	0
1987	Fish	Ventura	4,205	0	0
1987	Mendenhall	Mendocino	60,655	0	0
1987	Fork	Tehama	800	0	0
1987	High Rock	Modoc	1,156	0	0
1987	Cedar	Modoc	709	0	0
1987	French	Butte	430	0	0
1987	Clark	Plumas	37,530	4	0
1987	Fay/Top	Kern	13,900	0	0
1987	Pierce	Tulare	690	0	0

<u>Year</u>	<u>Name of Fire</u>	<u>County of Origin</u>	<u>Acres Burned</u>	<u>Homes Destroyed</u>	<u>Lives Lost</u>
1987	Lazyman	Tehama	2,520	0	0
1987	Under	Shasta	510	0	0
1987	Flume	Trinity	11,325	0	0
1987	Bear Wallow	Trinity	2,150	0	0
1987	Gulch	Trinity	6,800	1	0
1987	Bear-I	Trinity	5,750	0	0
1987	Trinity	Trinity	1,000	0	0
1987	Jessie	Trinity	3,500	0	0
1987	Lucy	Trinity	950	0	0
1987	Friendly	Trinity	3,400	0	0
1987	Cold	Trinity	13,932	0	0
1987	Tule	Trinity	720	0	0
1987	Peanut	Trinity	6,860	0	0
1987	Ripstein/East	Trinity	14,800	0	0
1987	Strause	Trinity	5,840	0	1
1987	China/Chance	Trinity	8,235	0	0
1987	Backbone	Trinity	830	0	0
1987	Bear	Trinity	550	0	0
1987	Doe	Trinity	2,026	0	0
1987	Travis Complex	Trinity	11,500	0	1
1987	Blake	Humboldt	1,895	0	0
1987	Longwood	Del Norte	4,000	0	0

<u>Year</u>	<u>Name of Fire</u>	<u>County of Origin</u>	<u>Acres Burned</u>	<u>Homes Destroyed</u>	<u>Lives Lost</u>
1987	River-II	Tuolumne	565	0	0
1987	Jarrell	Tuolumne	1,749	0	0
1987	Stanislaus Complex	Tuolumne	144,762	18	1
1987	Big	Placer	1,035	0	0
1987	Palmer	Sierra	1,612	0	0
1987	Indian	Sierra	8,500	0	0
1987	Branham	Lassen	1,150	0	0
1987	Paul	San Bernardino	1,450	0	0
1987	Snag	Lassen	830	0	0
1987	Cardenas	Mendocino	300	0	0
1987	Fouts Complex	Colusa	18,037	0	0
1987	Slides	Tehama	1,220	0	0
1987	Sycamore	Kern	1,600	0	0
1987	Trail	Kern	900	0	0
1987	Stallion Springs	Kern	6,000	0	0
1987	Middle	Kern	1,500	0	0
1988	Saddle	Humboldt	6,100	0	0
1988	Klamath	Del Norte	6,170	0	0
1988	Miller	Napa	38,600	7	0
1988	49er	Nevada	33,700	148	0
1988	Fern	Shasta	7,790	24	0
1988	Mason	Calaveras	4,072	5	0
1988	Bridge	Calaveras	6,778	0	0

**NATIONAL INTERAGENCY
INCIDENT MANAGEMENT SYSTEM**

INCIDENT COMMAND SYSTEM

ICS OPERATIONAL SYSTEM

DESCRIPTION

***ICS-120-1**

DECEMBER 12, 1981

This document contains information relative to the Incident Command System (ICS) component of the National Interagency Incident Management System (NIIMS). This is the same Incident Command System developed by FIRESCOPE.

Additional information and documentation can be obtained from the following sources:

1. AGENCIES WITHIN CALIFORNIA

State Board of Fire Services
State Fire Marshal
7171 Bowling Drive, Suite 600
Sacramento, CA 95823
(916) 427-4166

or

Support and Services Manager
Operations Coordination Center
P. O. Box 55157
Riverside, CA 92517
(714) 782-4174

2. AGENCIES OUTSIDE CALIFORNIA

FIRETIP Program
U. S. Forest Service
Boise Interagency Fire Center
3905 Vista Avenue
Boise, ID 93705
(208) 334-9455

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1.0 INTRODUCTION

1.1 National Inter-Agency Incident Management System (NIIMS)

The National Inter-Agency Incident Management System (NIIMS) has been developed to provide a common system which fire protection agencies can utilize at local, state and federal levels.

NIIMS consists of two major components as shown in Figure 1-1.

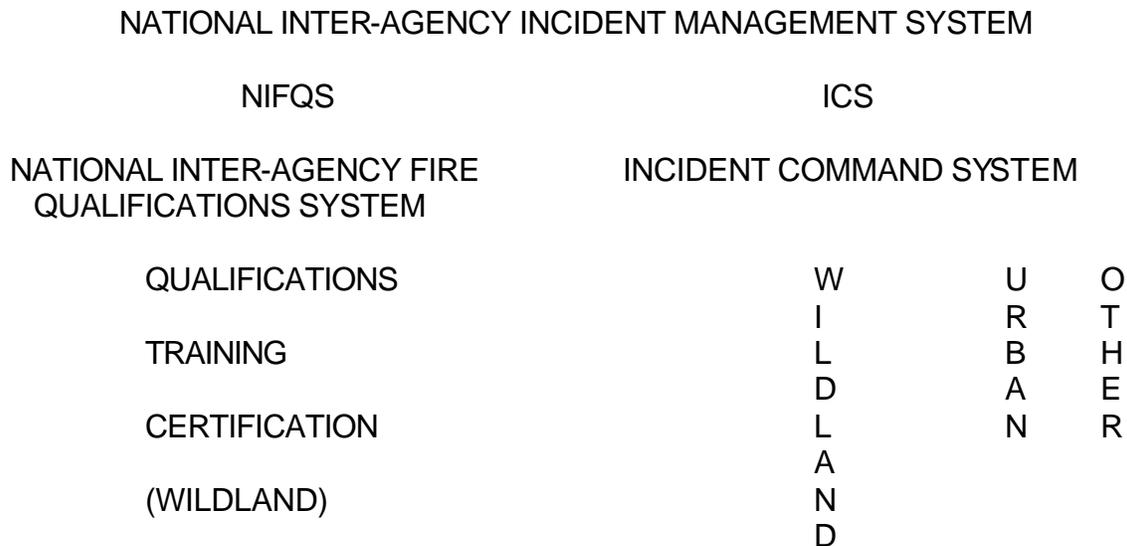


Figure 1-1

1.2 National Inter-Agency Fire Qualifications System (NIFQS)

Broadly speaking, NIFQS consists of the standards for qualification and certification, and standard training courses applicable to Incident Command System positions. At present, the NIFQS standards for qualification and certification and training courses stress the application to the wildland urban interface fire protection problem.

1.3 Incident Command System (ICS)

The ICS was developed through a cooperative inter-agency (local, State and Federal) effort. The basic organizational structure of the ICS is based upon a large fire organization which has been developed over time by Federal fire protection agencies. The essential differences are that the ICS is designed to be used for all kinds of emergencies, and is applicable to both small day-to-day situations as well as very large and complex incidents.

This manual is an Operational System Description of the Incident Command System. It consists of the following major sections:

- Section 1 - Introduction (this part)
- Section 2 - ICS Operating Requirements
- Section 3 - Components of the ICS
- Section 4 - Organization and Operations
- Section 5 - Complex Incidents
- Appendix A - Modular ICS Development

2.0 ICS OPERATING REQUIREMENTS

The following are basic system design operating requirements for the Incident Command System.

1. The System must provide for the following kinds of operation: (1) single jurisdiction/single agency, (2) single jurisdiction with multi-agency involvement, (3) multi-jurisdiction/multi-agency involvement.
2. The System's organizational structure must be able to adapt to any emergency or incident to which fire protection agencies would be expected to respond.⁽¹⁾
3. The System must be applicable and acceptable to users throughout the country.
4. The System should be readily adaptable to new technology.
5. The System must be able to expand in a logical manner from an initial attack situation into a major incident.
6. The System must have basic common elements in organization, terminology and procedures which allow for the maximum application and use of already developed qualifications and standards and ensure continuation of a total mobility concept.
7. Implementation of the System should have the least possible disruption to existing systems.
8. The System must be effective in fulfilling all of the above requirements and yet be simple enough to ensure low operational maintenance costs.
- 9.

(1) ICS must be designed to be used in response to emergencies caused by fires, floods, earthquakes, hurricanes, tornadoes, tidal waves, riots, spills of hazardous materials, and other natural or man-caused incidents.

3.0 COMPONENTS OF THE ICS

The Incident Command System has a number of components. These components working together interactively provide the basis for an effective ICS concept of operation:

- Common Terminology
- Modular Organization
- Integrated Communications
- Unified Command Structure
- Consolidated Action Plans
- Manageable Span-of-Control
- Predesignated Incident Facilities
- Comprehensive Resource Management

3.1 Common Terminology

It is essential for any management system, and especially one which will be used in joint operations by many diverse users, that common terminology be established for the following elements:

- a. Organizational Functions
- b. Resources
- c. Facilities

Organizational Functions - A standard set of major functions and functional units has been predesignated and named for the ICS. Terminology for the organizational elements is standard and consistent.

Resource Elements⁽¹⁾ - Resources refers to the combination of personnel and equipment used in tactical incident operations. Common names have been established for all resources used within ICS. Any resource which varies in capability because of size or power (e.g., helicopters is clearly typed as to capability).

Facilities - Common identifiers are used for those facilities in and around the incident area which will be used during the course of the incident. These facilities include such things as the Command Post, Incident Base, Staging Area, etc.

- (1) The term "resources" refers to primary and support equipment, not natural resources.

3.2 Modular Organization

The ICS organizational structure develops in a modular fashion based upon the kind and size of an incident. The organization's staff builds from the top down with responsibility and performance placed initially with the Incident Commander. As the need exists four separate Sections can be developed, each with several Units which may be established. The specific organization structure established for any given incident will be based upon the management needs of the incident. If one individual can simultaneously manage all major functional areas, no further organization is required. If one or more of the areas requires independent management, an individual is named to be responsible for that area.

For ease of reference and understanding, personnel assigned to manage at each level of the organization will carry a distinctive organizational title:

Incident Command	-	Incident Commander
Command Staff	-	Officer
Section	-	Section Chief
Branch	-	Branch Director (optional level)
Division	-	Division Supervisor
Unit	-	Unit Leader

In the ICS, the first management assignments by the Initial Attack

Functional Area
Section

Incident Commander will normally be

Functional Unit

one or more Section Chiefs to manage

Functional Unit

the major functional areas. Section

Functional Unit

Chiefs will further delegate management authority for their areas only as required. If the Section Chief sees the need, functional Units may be established within the Section. Similarly, each functional Unit Leader will further assign individual tasks within the Unit only as needed.

A fully developed ICS organization with all Units designated is located on Page 4-28. Appendix A describes the build-up of the ICS organization through a series of examples.

3.3 Integrated Communications

Communications at the incident are managed through the use of a common communications plan and an incident based communications center established solely for the use of tactical and support resources assigned to the incident. All communications between organizational elements at an incident should be confined only to essential messages. The Communications Unit is responsible for all communications planning at the incident. This will include incident-established radio networks, on-site telephone, public address, and off-incident telephone/microwave/radio systems.

<u>Radio Networks:</u>	Radio networks for large incidents will normally be organized as follows:
<u>Command Net</u>	This net should link together: Incident Command, key staff members, Section Chiefs, Division and Group Supervisors.
<u>Tactical Nets</u>	There may be several tactical nets. They may be established around agencies, departments, geographical areas, or even specific functions. The determination of how nets are set up should be a joint Planning/Operations function. The Communications Unit Leader will develop the plan.
<u>Support Net</u>	A support net will be established primarily to handle status-changing for resources as well as for support requests and certain other nontactical or command functions.
<u>Ground to Air Net</u>	A ground to air tactical frequency may be designated, or regular tactical nets may be used to coordinate ground to air traffic.
<u>Air to Air Nets</u>	Air to air nets will normally be predesignated and assigned for use at the incident.

3.4 Unified Command Structure

The need for a unified command is brought about because:

1. Incidents have no regard for jurisdictional boundaries. Wildland fires, floods, hurricanes, earthquakes usually cause multi-jurisdictional major incident situations.
2. Individual agency responsibility and authority is normally legally confined to a single jurisdiction.

The concept of unified command simply means that all agencies who have a jurisdictional responsibility at a multi-jurisdictional incident contribute to the process of:

1. Determining overall incident objectives.
2. Selection of strategies.
3. Ensuring that joint planning for tactical activities will be accomplished.
4. Ensuring that integrated tactical operations are conducted.
5. Making maximum use of all assigned resources.

The proper selection of participants to work within a unified command structure will depend upon:

1. The location of the incident - which political jurisdictions are involved.
2. The kind of incident - which functional agencies of the involved jurisdiction(s) are required.

A unified command structure could consist of a key responsible official from each jurisdiction in a multi-jurisdictional situation or it could consist of several functional departments within a single political jurisdiction.⁽¹⁾

Common objectives and strategy on major multi-jurisdictional incidents should be written. The objectives and strategies then guide development of the action plan. Under a unified command structure in the ICS, the implementation of the action plan will be done under the direction of a single individual -- the Operations Chief.

The Operations Chief will normally be from the agency which has the greatest jurisdictional involvement. Designation of the Operations Chief must be agreed upon by all agencies having jurisdictional and functional responsibility at the incident.

-
- (1) As an option, the command structure could include landowners or their representatives. It could also invite the counsel of individuals or agencies having functional expertise or capability.

3.5 Consolidated Action Plan

Every incident needs some form of an action plan. For small incidents of short duration, the plan need not be written. The following are examples of when written action plans should be used:

1. When resources from multiple agencies are being used.
2. When several jurisdictions are involved.
3. When the incident will require changes in shifts of personnel and/or equipment.

The Incident Commander will establish objectives and make strategy determinations for the incident based upon the requirements of the jurisdiction. In the case of a unified command, the incident objectives must adequately reflect the policy and needs of all the jurisdictional agencies.

The action plan for the incident should cover all tactical and support activities required for the operational period.

3.6 Management Span-of-Control

Safety factors as well as sound management planning will both influence and dictate span-of-control considerations. In general, within the ICS, the span-of-control of any individual with emergency management responsibility should range from three to seven with a span-of-control of five being established as a general rule of thumb. Of course, there will always be exceptions (e.g., an individual crew leader will normally have more than five personnel under supervision).

The kind of an incident, the nature of the task, hazard and safety factors and distances between elements all will influence span-of-control considerations. An important consideration in span-of-control is to anticipate change and prepare for it. This is especially true during rapid build-up of the organization when good management is made difficult because of too many reporting elements.

3.7 Designated Incident Facilities

There are several kinds and types of facilities which can be established in and around the incident area. The determination of kinds of facilities and their locations will be based upon the requirements of the incident and the direction of Incident Command. The following facilities are defined for possible use with the ICS:

Command Post

Designated as the CP, the Command Post will be the location from which all incident operations are directed. There should only be one Command Post for the incident. In a unified command structure where several agencies or jurisdictions are involved, the responsible individuals designated by their respective agencies would be co-located at the Command Post. The planning function is also performed at the Command Post, and normally the Communications Center would be established at this location. The Command Post may be co-located with the Incident Base if communications requirements can be met.

Incident Base

The Incident Base is the location at which primary support activities are performed. The Base will house all equipment and personnel support operations. The Incident Logistics Section, which is responsible for ordering all resources and supplies is also located at the Base. There should only be one Base established for each incident, and normally the Base will not be relocated. If possible, Incident Base locations should always be included in the pre-attack plans.

Camps

Camps are locations from which resources may be located to better support incident operations. At Camps, certain essential support operations (e.g., feeding, sleeping, sanitation) can be maintained. Also at Camps, minor maintenance and servicing of equipment will be done. Camps may be relocated if necessary to meet tactical operations requirements.

Staging Areas

Staging areas are established for temporary location of available resources on three-minute notice. Staging Areas will be established by the Operations Chief to locate resources not immediately assigned. A Staging Area can be anywhere in which mobile equipment can be temporarily parked awaiting assignment. Staging Areas may include temporary sanitation services and fueling. Feeding of personnel would be provided by mobile kitchens or sack lunches. Staging Areas should be highly mobile. The Operations Chief will assign a Staging Manager for each Staging Area.

The Manager is responsible for the check in of all incoming resources; to dispatch resources at the request of the Operations Chief; and to request Logistics Section support as necessary for resources located in the Staging Area.

Helibases

Helibases are locations in and around the incident area at which helicopters may be parked, maintained, fueled and loaded with retardants, personnel or equipment. More than one Helibase may be required on very large incidents. Once established on an incident, a Helibase will usually not be relocated.

Helispots

Helispots are more temporary and less used locations at which helicopters can land, take off, and in some cases, load water or retardants.

3.8 Comprehensive Resource Management

Resources may be managed in three different ways, depending upon the needs of the incident:

Single Resources

These are individual engines, bulldozers, crews, helicopters, plow units, etc., that will be assigned as primary tactical Units. A single resource will be the equipment plus the required individuals to properly utilize it.

Task Forces

A Task Force is any combination of resources which can be temporarily assembled for a specific mission. All resource elements within a Task Force must have common communications and a Leader. The Leader normally should have a separate vehicles. Task Forces should be established to meet specific tactical needs and should be demobilized as single resources.

Strike Teams

Strike Teams are a set number of resources of the same kind and type, which have an established minimum number of personnel. Strike Teams will always have a Leader (usually in a separate vehicle) and will have common communications among resource elements. Strike Team can be made up of engines, hand crews, plows, bulldozers, and any other kind of resource where a combination of common elements becomes a useful tactical resource.

The use of Strike Teams and Task Forces is encouraged, wherever possible, to maximize the use of resources, reduce the management control of a large number of single resources, and reduce the communications lead.

In order to maintain an up-to-date and accurate picture of resource utilization, it is necessary that:

1. All resources be assigned a current status condition.
2. All changes in resource locations and status conditions be made promptly to the appropriate functional Unit.

Status Conditions

Three status conditions are established for use with tactical resources at the incident:

1. Assigned - Performing an active assignment.
2. Available - Ready for assignment. All resources in Staging Areas should be available.
3. Out-of-Service - Not ready for available or assigned status.

Changes in Status

Normally, the individual who makes the change in a resource's status is responsible for providing that information to the central resource status keeping function.

4.0 ORGANIZATION AND OPERATIONS

The ICS organization has five major functional areas. The functional areas are:

- Command
- Operations
- Planning
- Logistics
- Finance

These functional areas are structured as follows:

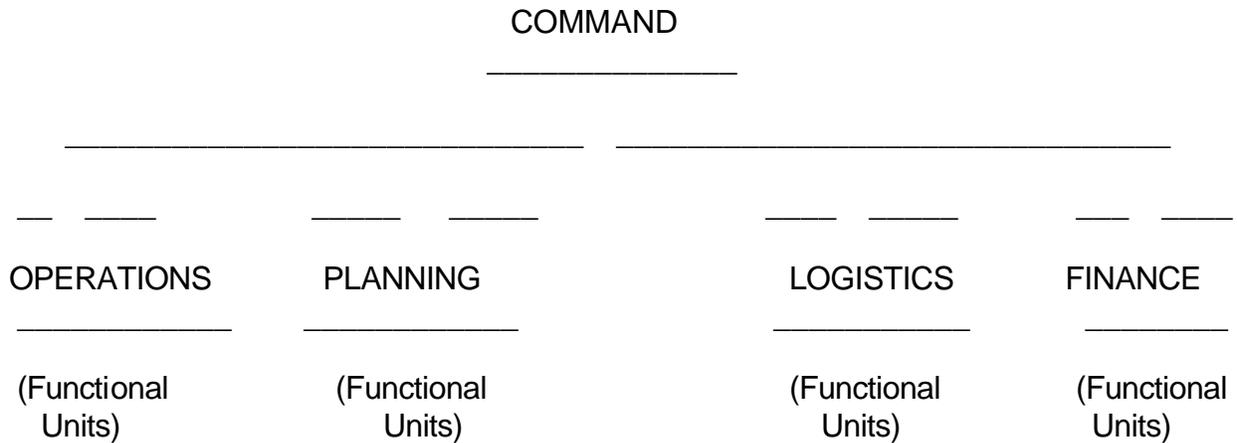


Figure 4-1
Incident Command System
Basic Functional Area Structure

These functional areas and their Units are described in the following pages.

4.1 Command

Command is responsible for overall management of the incident. Command also includes certain staff functions required to support the command function. The command function within the ICS may be conducted in two general ways.

- Single Command
- Unified Command

4.1.1 Single Command - Incident Commander/Deputy

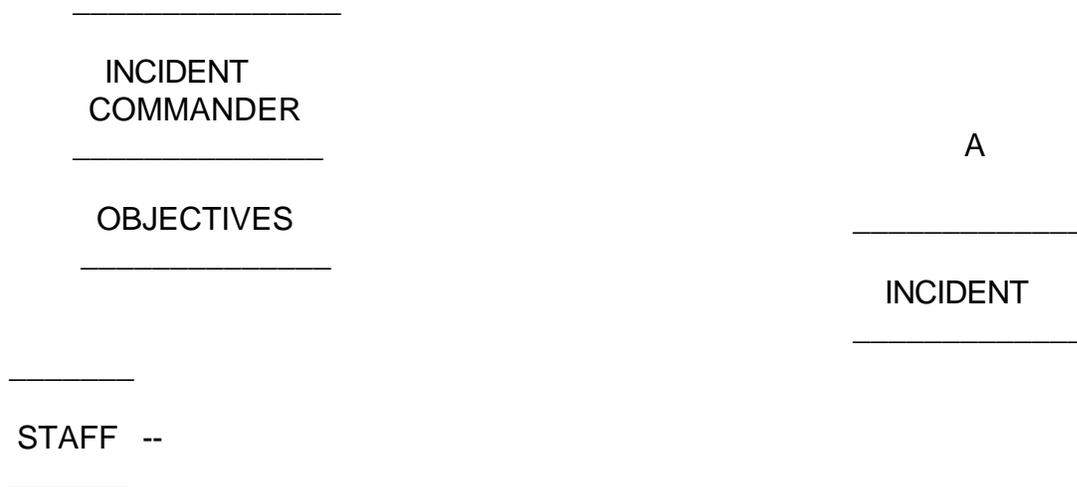
Within a jurisdiction is which an incident occurs, and when there is not overlap of jurisdictional boundaries involved, a single Incident Commander will be designated by the jurisdictional agency to have overall management responsibility for the incident.

The Incident Commander will prepare Incident Objectives which in turn will be the foundation upon which subsequent action planning will be based.

The Incident Commander will approve the final action plan, and approve all requests for ordering and releasing of primary resources. The Incident Commander may have a deputy. The deputy should have the same qualifications as the Incident Commander, and may work directly with the Incident Commander, be a relief, or perform certain specific assigned tasks.

In an incident within a single jurisdiction, where the nature of the incident is primarily a responsibility of one agency (e.g., fire), the deputy may be from the same agency. In a multi-jurisdictional incident or one which threatens to be a multi-jurisdictional, the deputy role may be filled by an individual designated by the adjacent agency. More than one deputy could be involved. Another way of organizing to meet multi-jurisdictional situations is described under Unified Command.

Figure 4-2 on the following page depicts an incident with single Incident Command authority.



(FUNCTIONAL AREAS)

Figure 4-2
Single Incident Command Structure

4.1.2 Unified Command

A unified command structure is called for under the following conditions:

1. The incident is totally contained within a single jurisdiction, but more than one department or agency shares management responsibility due to the nature of the incident or the kinds of resources required. For example, a passenger airliner crash within a national forest. Fire, medical and law enforcement all have immediate but diverse objectives. An example of this kind of unified command structure is depicted in Figure 4-3 on the following page.

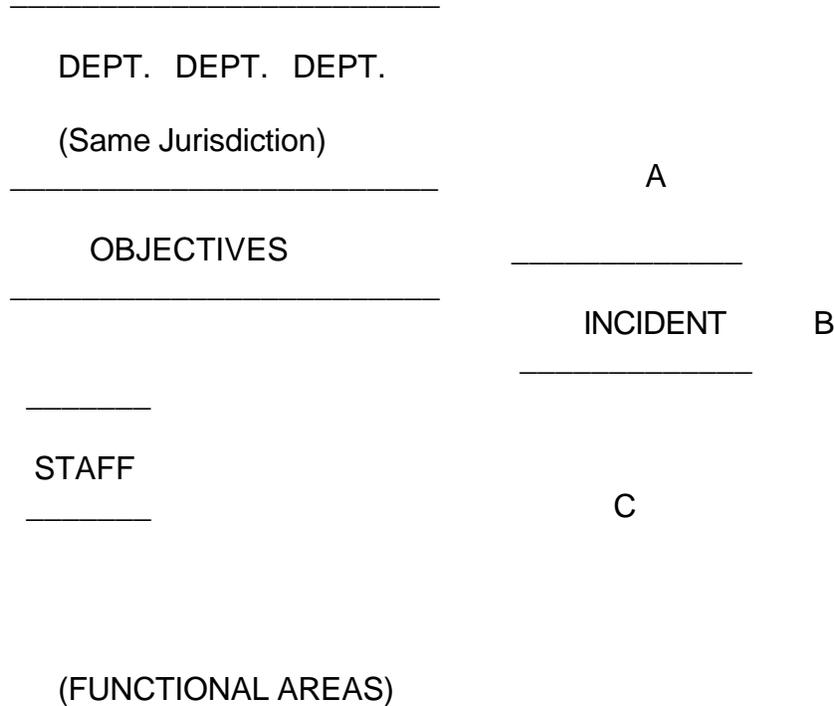


Figure 4-3
Unified Command Structure
Multi-Department

2. The incident is multi-jurisdictional in nature. For example, a major wildland fire. An example of this unified command structure is shown in Figure 4-4.

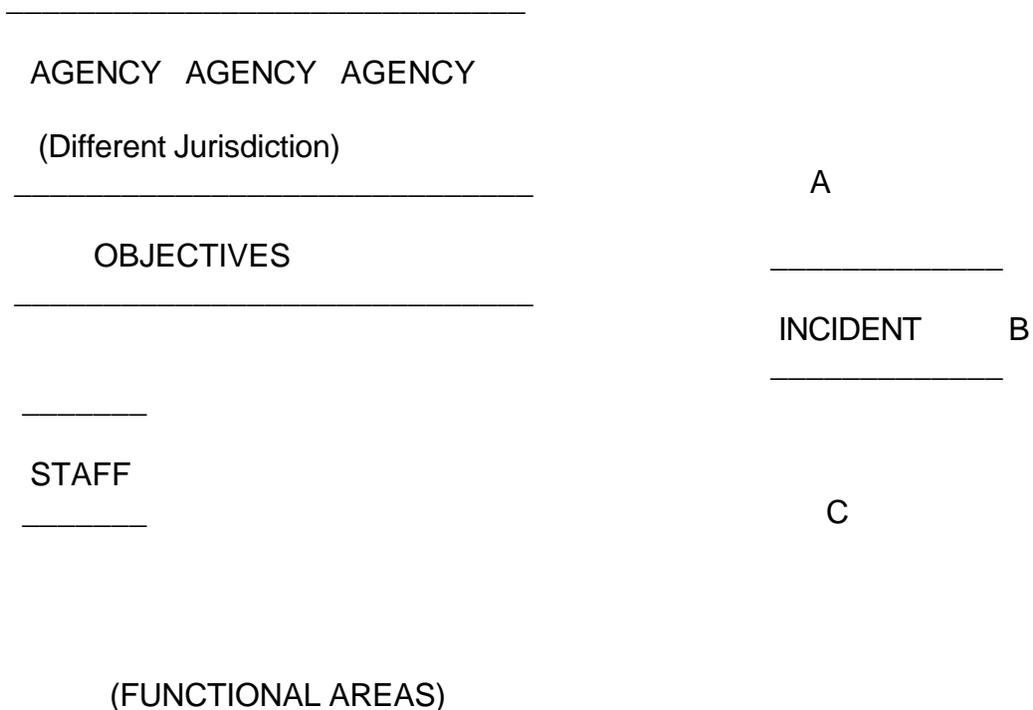


Figure 4-4
Unified Command Structure
Multi-Jurisdiction

4.2 Single/Unified Command Differences

The primary difference between the single and unified command structures are:

1. In a single command structure, a single Incident Commander is solely responsible (within the confines of his authority) to establish objectives and overall management strategy associated with the incident. The Incident Commander is directly responsible for follow-through, to ensure that all functional area actions are directed toward accomplishment of the strategy. The implementation of the planning required to effect operational control will be the responsibility of a single individual (Operations Chief) who will report directly to the Incident Commander.
2. In a unified command structure, the individuals designated by their jurisdictions (or by departments within a single jurisdiction) must jointly determine objectives, strategy and priorities. As in a single command structure, the Operations Chief will have responsibility for implementation of the plan. The determination of which agency (or department) the Operations Chief represents must be made by mutual agreement of the unified command.

It may be done on the basis of greatest jurisdictional involvement, number of resources involved, by existing statutory authority, or by mutual knowledge of the individual's qualifications.

4.3 Command Staff

Command staff positions are established to assume responsibility for key activities which are not a part of the line organization. In ICS, three specific staff positions are identified:

- Information Officer
- Safety Officer
- Liaison Officer

Additional positions might be required, depending upon the nature and location of the incident, or requirements established by Incident Command.

4.3.1 Information Officer

The Information Officer's function is to develop accurate and complete information regarding incident cause, size, current situation, resources committed and other matters of general interest. The Information Officer will normally be the point of contact for the media and other governmental agencies which desire information directly from the incident. In either a single or unified command structure, only one Information Officer would be designated. Assistants may be assigned from other agencies or departments involved.

4.3.2 Safety Officer

The Safety Officer's function at the incident is to assess hazardous and unsafe situations and develop measures for assuring personnel safety. The Safety Officer should have emergency authority to stop and/or prevent unsafe acts. In a unified command structure, a single Safety Officer would be designated. Assistants may be required and may be assigned from other agencies or departments making up the unified command.

4.3.2 Liaison Officer

The Liaison Officer's function is to be a point of contact for representatives from other agencies. In a single command structure, the representatives from assisting agencies would coordinate through the Liaison Officer. Under a unified command structure, representatives from agencies not involved in the unified command would coordinate through the Liaison Officer. Agency representatives assigned to an incident should have authority to speak on all matters for their agency.

4.4 Organization of Incident Tactical Operations

Tactical operations at the incident include all activities which are directed toward reduction of the immediate hazard, establishing situation control and restoration of normal operations.

The types of incidents for which the ICS is applicable are many and varied. They include such things as major wildland and urban fires, floods, hazardous substance spills, nuclear accidents, aircraft accidents, earthquakes, hurricanes, tornadoes, tsunamis and war-caused disasters.

Because of the functional unit management structure, the ICS is equally applicable to small incidents and for use in normal operations. Basically, once the ICS operating concepts are adopted by an agency, the system structure will develop in a natural fashion based upon incident requirements.

The agencies which can make use of the ICS could include federal, state and local. In some cases, all may be working together or they may work in combinations. The types of agencies could include fire, law enforcement, health, public works, emergency services, etc.; again, either working altogether or in combinations depending upon the situation. Many incidents may involve private individuals, companies, or organizations, some of which may be fully trained and qualified to participate as partners in the ICS. There are many ways in which incident tactical operations may be organized and operated. The specific method selected will be dependent upon:

- The type of incident
- The agencies involved
- The objectives and strategies selected

In the following examples, several different ways of organizing incident tactical operations are shown and described. In some cases, the selected method will be determined around jurisdictional boundaries. In other cases, a strictly functional approach will be used. In still others, a mix of functional/geographical may be appropriate. The ICS offers extensive flexibility in determining the right approach based upon the factors described above.

Figure 4-5 shows the primary organizational structure within operations.

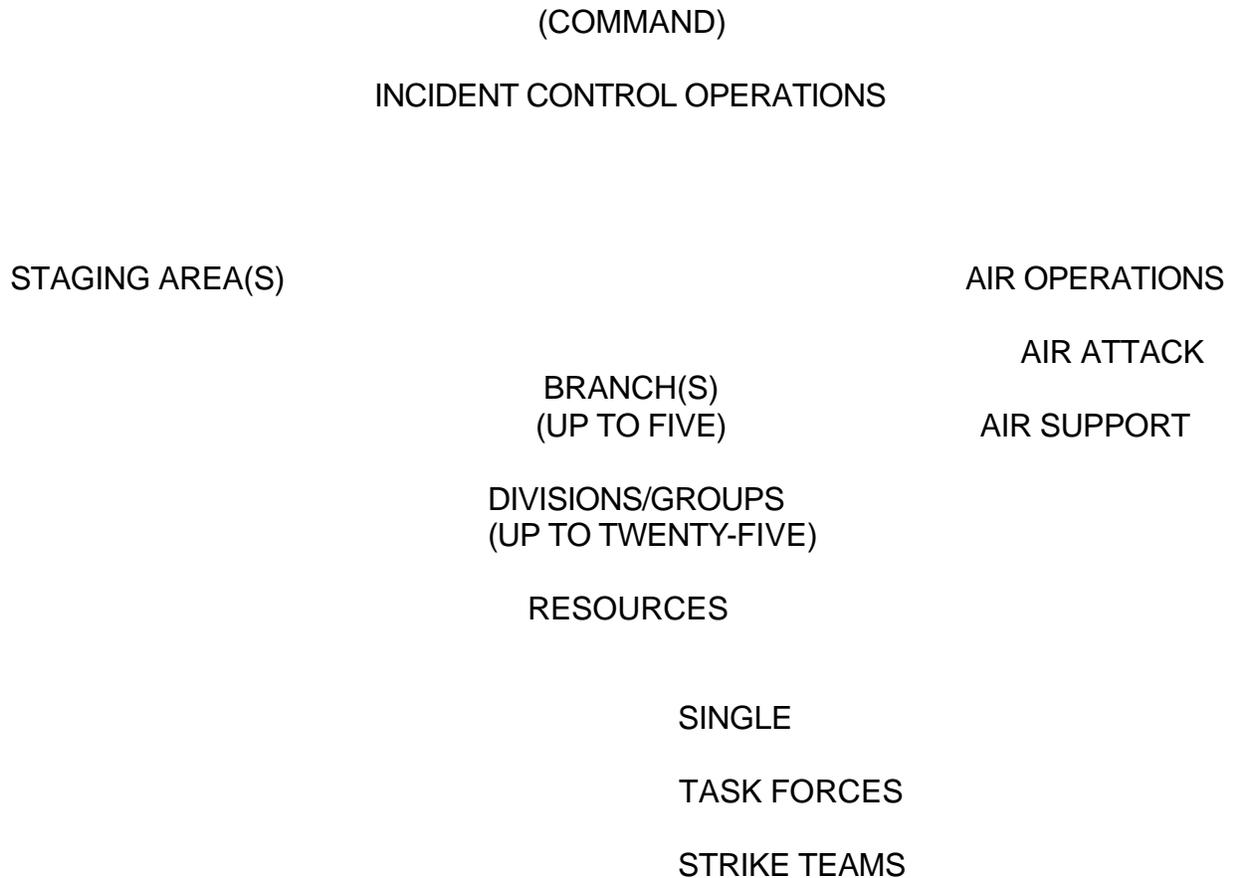


Figure 4-5
Major Organizational Elements
Incident Tactical Operations

4.4.1 Operational Chief/Deputies

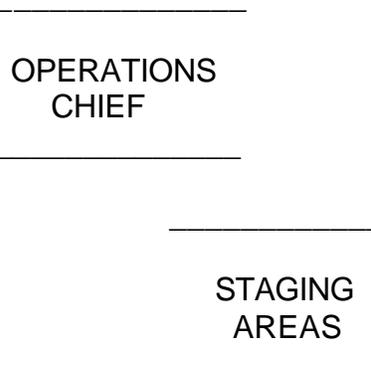
The Incident Operations Chief is responsible for the direct management of all incident tactical activities. The Chief assists in the formulation of the action plan. The Operations Chief may have deputy positions and deputies from other agencies are encouraged in multi-jurisdictional situations. Deputies should be equally as qualified as the Operations Chief. An Operations Chief should be designated for each operational period, and the Chief should have direct involvement in the preparation of the action plan for the period of responsibility.

4.4.2 Staging Areas

Staging Areas are locations designated by the Operations Chief within the incident area which are used to temporarily locate resources which are available for assignment. The

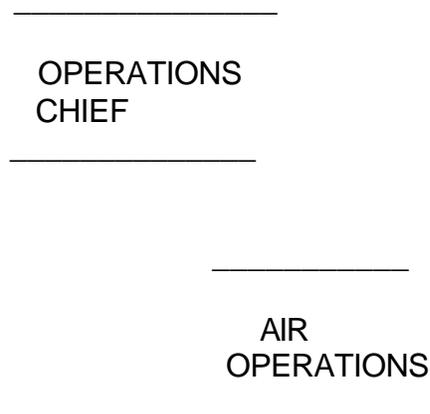
Operations Chief may establish, move and discontinue the use of Staging Areas. All resources within the designated Staging Areas are under the direct control of the Operations Chief and should be on a 3-minute availability.

Staging Area Managers will request logistical support (e.g., food, fuel, sanitation) from appropriate Logistics Section Units.



4.4.3 Air Operations

The Air Operations Organization is established by the Operations Chief. Its size, organization and use will depend primarily upon the nature of the incident, and the availability of aircraft. A method of organizing Air Operations for maximum load conditions is depicted below. On large incidents, the Operations Chief may deal directly with the Air Attack Supervisor, who in turn will coordinate all airborne activity through a Helicopter Coordinator and an Air Tanker Coordinator. In other cases (e.g., where only a single helicopter is used), the helicopter may be directly under the control of the Operations Chief.



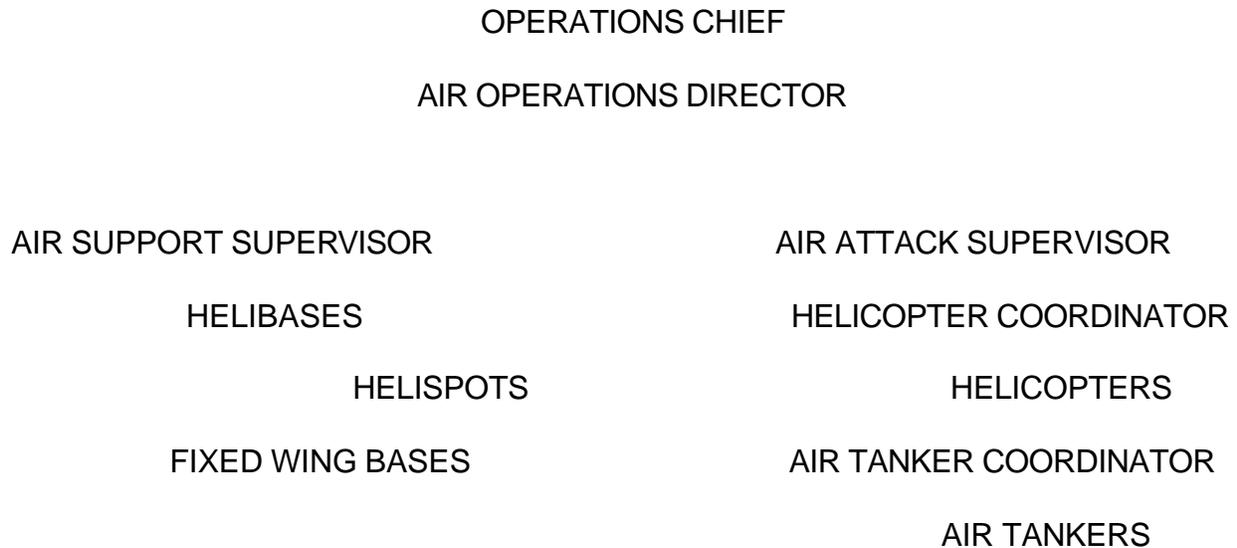


Figure 4-6
ICS Air Operations Organization

The Operations Chief may establish an Air Operations Director position when:

1. The complexity of air operations requires additional support and effort.
2. The incident requires both a mix of tactical and logistical use of helicopters and other aircraft.

The Air Support Group is responsible for establishing and operating helibases and helispots, and for maintaining required liaison with fixed-wing air attack bases off the incident. The Group is responsible for all time keeping for helicopters assigned to the incident. The Air Attack Supervisor position is established as a separate position whenever both helicopters and fixed-wing aircraft will be simultaneously operated within the incident air space.

4.4.4 Resources

Initially in any incident, the individual resources which are assigned will be reporting directly to the individual who has overall responsibility (i.e., the Incident Commander). As described earlier, as the incident grows in size or complexity, the Incident Commander may designate an Operations Chief to assume tactical direction of resources. In the ICS, resources may be used in several ways:

Single Resources

In general, single resources will be used for initial attack, first response situations. They may also be dispatched in extended (reinforced) attack or greater alarm situations in some cases. During an ongoing incident, there will always be situations which will call for the use of a single helicopter, engine, plow unit, crew, etc.

Task Force

Task Forces are any combination of resources put together for an assignment of a temporary nature. Task Forces call for a Leader (usually in a separate vehicle), and with common communications between all resource elements. An example of a Task Force could include an engine, hand crew and bulldozer to work on a temporary assignment under the direct supervision of the Task Force Leader. Task Forces can be very versatile combinations of resources and their use is encouraged. The combining of resources into Task Forces allows for several resource elements to be managed under one individual's supervision, thus lessening the span of control.

Strike Teams

Strike Teams are a set number of resources of the same kind and type with common communications operating under the direct supervision of a leader. Strike Teams are highly effective management units. The foreknowledge that all elements have the same capability, and the knowledge of how many will be applied allows for better planning, ordering, utilization and management. Strike Teams are generally recommended for use with engines and can be used effectively with hand crews, bulldozers and plow units.

4.5 Operations Section

The following section discusses several ways in which an incident may be organized for tactical operations. Considered first will be the use of Divisions/Groups. Following this will be a discussion of the use of Branches.

4.5.1 Divisions and Groups

Divisions and Groups are established on an incident when the number of resources (single increments, Task Forces or Strike Teams) exceeds the span-of-control of the Operations Chief.

OPERATIONS CHIEF

BRANCHES

DIVISIONS/GROUPS

Divisions are normally established to divide an incident into geographical areas of operation.

RESOURCES

Groups are normally established to divide the incident into functional areas of operation.

There is no absolute necessity to differentiate by a separate term, Division or Group. However, the use of the two terms is useful in that a Division will always mean a geographical assignment and a Group will always mean a functional assignment. Both geographical Divisions and functional Groups may be used on a single incident if there is justification for their use, and if proper coordination can be affected. Following are some examples for the use of Divisions and Groups.

First the need to establish either Division or Groups.

In the Figure 4-7, the Operations Chief has five resources under assignment. As two additional Strike Teams are added to the organization, the resources should be divided into a Division structure. See Figure 4-8.

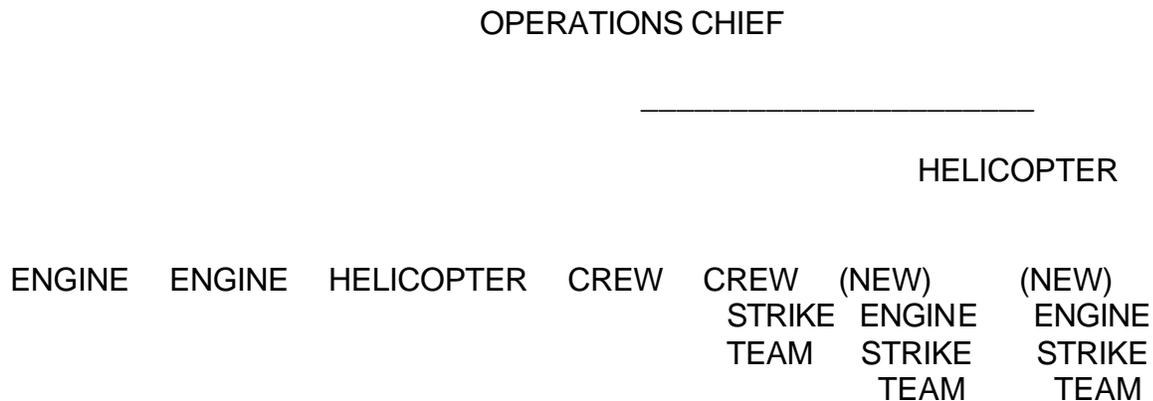


Figure 4-7
Resources Reporting Directly to Operations Chief

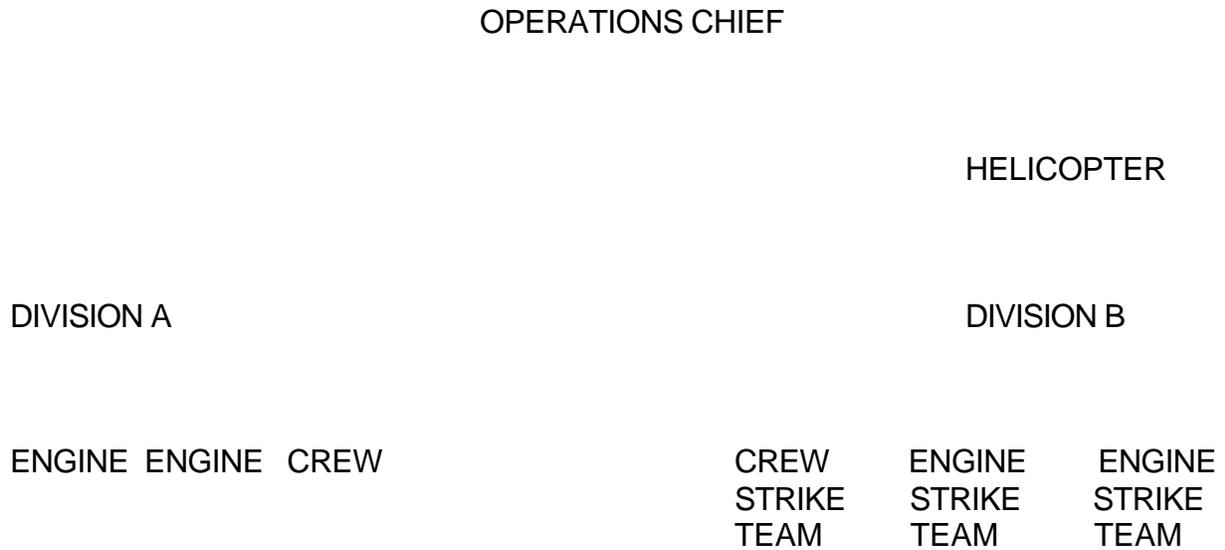


Figure 4-8
Two Division Organization

1. Geographical Divisions

The best use of Geographical Divisions is to divide an area into natural separations of terrain, geography and fuel; and where resources can be effectively managed under span-of-control guidelines.

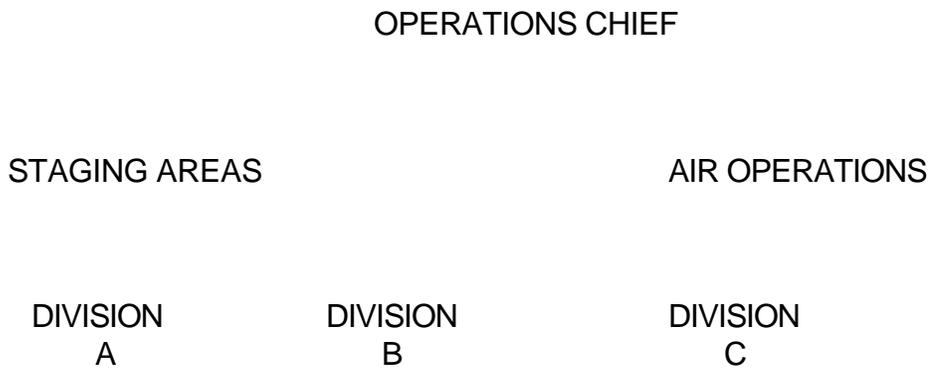
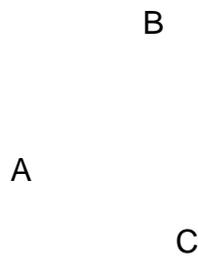


Figure 4-9
Use of Geographical Divisions - Wildland Fire

2. Functional Groups

Functional Groups can best be used to describe areas of like activity (e.g., rescue, salvage, ventilation, etc.).

See Figure 4-10 on following page.

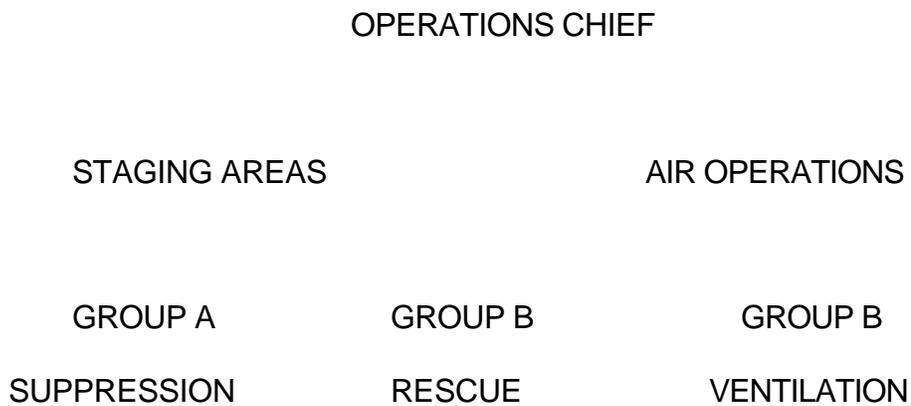


Figure 4-10

Use of Functional Groups

3. Combined Geographical Divisions and Functional Groups

Three Divisions (A, B, C) established around jurisdictional boundaries; one Group (D) for secondary line construction, one Group (E) for structure protection. Geographical Divisions and functional Groups can also be applied in structure situations. Note that functional Groups can cross Divisions.

OPERATIONS CHIEF

DIVISION A DIVISION B DIVISION C DIVISION D DIVISION E

Figure 4-11

Mix of Divisions and Groups

4.5.2 Branches

Branches may be established on an incident to serve several purposes. However, they are not always essential to the organization of the Operations Section.

In general, Branches may be established for the following reasons:

1. When the numbers of Divisions/Groups exceed the recommended 5-1 span-of-control for the Operations Chief. When this happens, the Operations Chief should designate a two-Branch structure, and allocate the Divisions/Groups within those branches. For example, in Figure 4-12, the Operations Chief has one Group and four Divisions reporting with two additional Divisions and one Group being added. At this point, a two-Branch organization should be formed. See Figure 4-13.

OPERATIONS CHIEF

GROUP A DIVISION B DIVISION C DIVISION D DIVISION E DIVISION (NEW) DIVISION (NEW) GROUP (NEW)

Figure 4-12

Primary Organizations: Divisions and Groups Reporting Directly

OPERATIONS CHIEF

BRANCH 1

BRANCH 2

GROUP	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	DIVISION	GROUP
A	B	C	D	E	(NEW)	(NEW)	(NEW)

Figure 4-13

Two-Branch Organization

2. When the nature of the incident calls for a functional Branch structure. For example, a major aircraft crash within a city. In this case, three departments within the city (police, fire and health services) each have a functional Branch operating under the direction of a single Operations Chief. In this example, the Operations Chief is from the fire department with deputies from police and health services departments. Other alignments could be made depending upon the city plan and type of emergency. (Note that Incident Command in this situation could be either single or unified command depending upon the jurisdiction.)

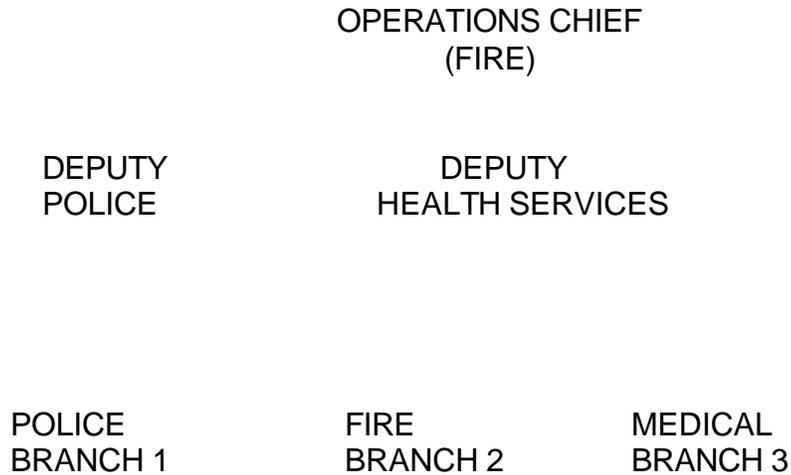


Figure 4-14
Functional Branches

3. When the incident is multi-jurisdictional and where resources are best managed under the agencies which have normal control over those resources. For example, in a major wildland fire in which there is combined federal, county and city resource involvement.

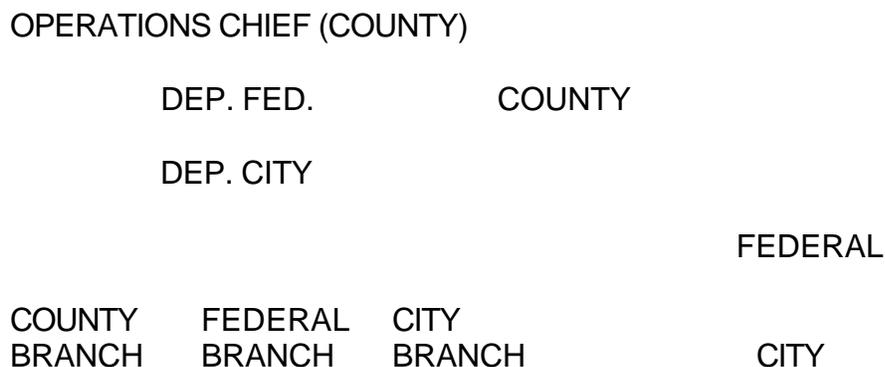


Figure 4-15

Jurisdictional Branches

4.5.3 Branches, Divisions/Groups

The following figure depicts the organization of a major incident involving Branches, Divisions and Groups.

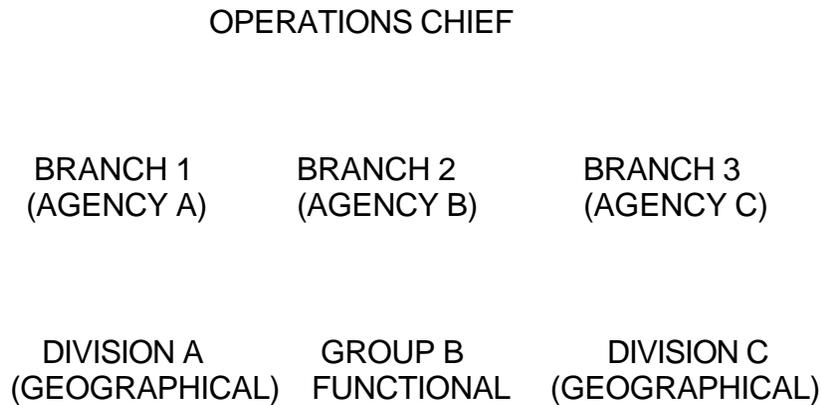
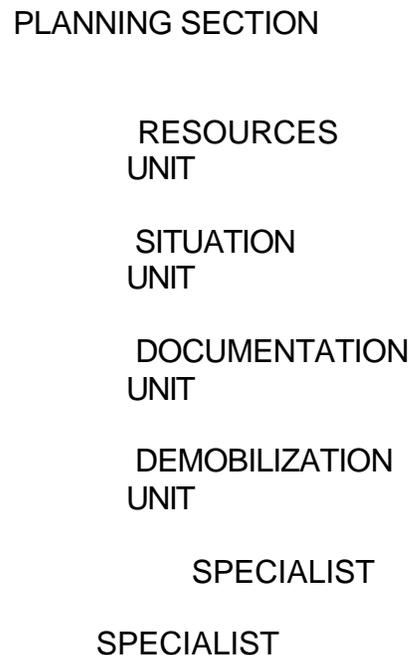


Figure 4-16
Mix of Branches, Divisions/Groups

4.6 Planning Section

The Planning Section is responsible for the collection, evaluation and dissemination of tactical information about the incident. The Section maintains information on the current and forecast situation, and on the status of resources assigned to the incident. The Section is also responsible for the preparation and documentation of action plans. The Section has four primary units and may have a number of technical specialists to assist in evaluating the situation and forecasting requirements for additional personnel and equipment.



4.6.1 Planning Section Chief/Deputy

The Planning Section Chief is responsible for the gathering and analysis of all data regarding incident operations and assigned resources, developing alternatives for tactical operations, conducting the planning meetings, and preparing the action plan for each operational period.

The Planning Section Chief will normally be from the jurisdiction which has incident responsibility. Under a unified command structure, The Planning Section Chief could have a deputy from one or more of the other involved jurisdictions.

4.6.2 Resources Unit

The Resources Unit has the responsibility to make certain that all assigned personnel and resources have checked in at the incident. It is also responsible for maintaining current status on all resources. A status keeping system will be required which will show current location of all assigned resources as well as current status condition for all resources. This should include key supervisory personnel (overhead), primary resources used in tactical operations, as well as support resources, transportation equipment, etc.

4.6.3 Situation Unit

The Situation Unit is responsible for collecting, processing and organizing situation information, preparing situation summaries, and developing projections and forecasts of future events related to the incident. The Situation Unit will prepare maps and intelligence information for use in the action plan.

The Situation Unit may also require expertise in the form of technical specialists.

4.6.4 Documentation Unit

The Documentation Unit is responsible for maintaining accurate and complete incident files; providing duplication services to incident personnel; and for filing, maintaining and storing incident files for legal, analytical, and historical purposes.

The Documentation Unit is maintained within the Planning Section primarily because that Unit has a major responsibility toward the preparation of the Incident Action Plan, as well as maintaining files on many records which are developed as part of the overall Command Post and planning function.

4.6.5 Demobilization Unit

The Demobilization Unit is responsible for developing an Incident Demobilization Plan. The plan should include specific demobilization instructions for all overhead and resources which require demobilization. (Note that many city and county agencies do not require specific demobilization due to their local nature.) The Demobilization Unit must also ensure that the Plan, once approved, is distributed both at the incident and to necessary off-incident locations. It is appropriate for Demobilization Planning to begin early in the incident, particularly in developing rosters of personnel and resources, and to obtain any missing information from the incident check-in process.

4.6.6 Technical Specialists

The ICS is designed to function in a wide variety of incidents. Within the Planning Section is the capability, in addition to the four designated Units, to have Technical Specialists which may be called upon depending upon the needs of the incident.

Technical Specialists assigned to the Planning Section may report directly to the Planning Section Chief; may function in an existing Unit (e.g., a fire behavior specialist and meteorologist could be made a part of the Situation Unit); or may form a separate Unit within the Planning Section depending upon the requirements of the incident and the needs of the Planning Section Chief. It is also possible that Technical Specialists could be reassigned to other parts of the organization (e.g., to Operations on tactical matters or Finance on fiscal matters).

Generally, if the expertise is needed for only a short time and will normally be only one person, that person should be assigned to the Situation Unit. IF the expertise will be required on a long-range basis and may require several persons, it may be advisable to establish a separate Unit in the Planning Section. For example, if an extensive amount of fire behavior planning will be required for several days, Technical Specialists consisting of fire behavior specialists and a meteorologist may combine to form a Fire Behavior Unit.

The incident itself will primarily dictate the needs for Technical Specialists. Listed below are examples of the kinds of specialists which may be required:

- Fire Behavior Specialist
- Meteorologist
- Environmental Impact Specialist
- Resource Use and Cost Specialists (e.g., crews, plows, bulldozers, etc.)

- Flood Control Specialist
- Water Use Specialist
- Toxic Substance Specialist(s)
- Fuels and Flammables Specialist
- Nuclear Radiation Fallout Specialist
- Structural Engineer
- Training Specialist

4.7 Logistics Section

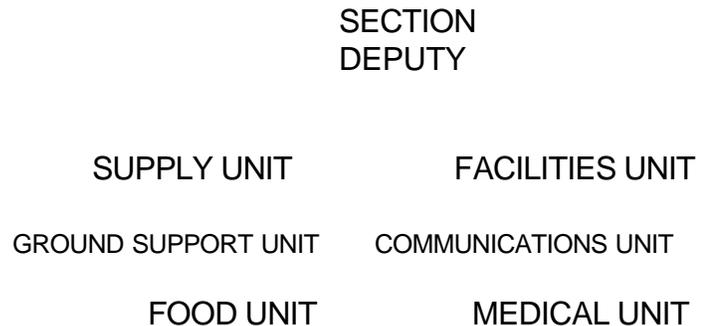
The Logistics Section is responsible for providing all support needs to the incident (except air). The Logistics Section would order all resources from off-incident locations. It would also provide facilities, transportation, supplies, equipment maintenance and fueling, feeding, communications and medical services.

The Logistics Section will be managed by a Logistics Section Chief. The Section may also have a Deputy. A Deputy position is encouraged when all designated Units are

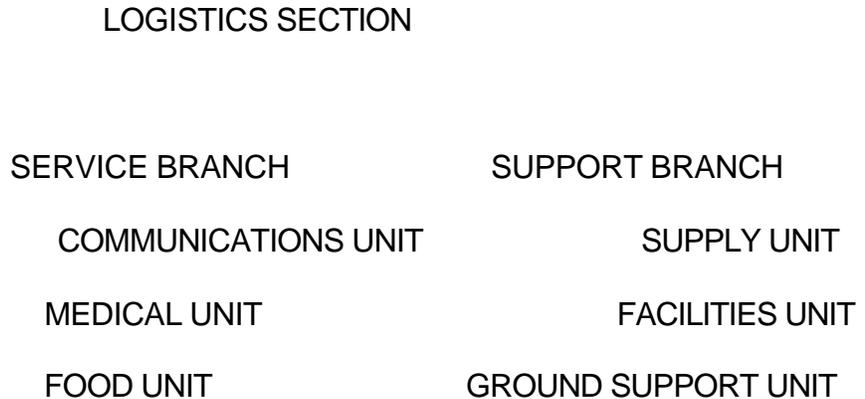
established on an incident.

Under circumstances of a very large incident, or in an incident where it is necessary to have a number of facilities with large numbers of equipments, the Logistics Section can be divided into two Branches.

The basic organizational structure of the Logistics Section is shown above.



A two-Branch organization structure for the Logistics Section could be as shown to the right.



4.7.1 Supply Unit

The Supply Unit is responsible for ordering, receiving, storing and processing of all incident-related resources, personnel and supplies.

The Supply Unit when established, has the basic responsibility at the incident for all off-incident ordering. This will include:

1. All tactical and support resources (including personnel).
2. All expendable and nonexpendable supplies required for incident support.

The Supply Unit also has the responsibility for providing the locations and the personnel to receive, process, store and distribute all supply orders. The Supply Unit will also, on those incidents which require it, have the responsibility for handling tool operations which include storing, and disbursement and servicing of all tools and portable, nonexpendable equipments.

4.7.2 Facilities Unit

The Facilities Unit is responsible for:

1. Maintenance and repair of primary tactical equipment, vehicles and mobile ground support equipment.
2. Time reporting on all incident-assigned ground equipment (including contract equipment).
3. Fueling of all mobile equipment.
4. Providing of transportation services in support of incident operations (except air).
5. Implementing of the Incident Traffic Plan.

The Ground Support Unit, in addition to a primary function of maintenance and services of all mobile vehicles and equipment will, on major incidents, maintain a transportation pool. The transportation pool will consist of vehicles (e.g., staff cars, busses, pickups, etc.) which can be used for purposes of transporting personnel from one location to another. The Ground Support Unit must also provide the Resources Unit with up-to-date information on the status of transportation vehicles, their locations and capability.

4.7.4 Communications Unit

The Communications Unit is responsible for the developing of plans to make the most effective use of incident assigned communications equipment and facilities; the installation and testing of all communications equipment; supervision and operation of the Incident Communications Center; distribution and recovery of equipments assigned to incident personnel; and the maintenance and on-site repair of communications equipment.

The Communications Unit in the ICS has a major responsibility for effective communications planning, due to the potential multi-agency use of the ICS. This is especially important in determining required radio nets; establishing inter-agency frequency assignments; and ensuring that maximum use is made of all assigned communications capability.

The Communications Unit Leader should attend all incident planning meetings to ensure that tactical operations planning can be supported by available incident communications systems.

4.7.5 Food Unit

The Food Unit is responsible for determining food and water requirements, menu planning, food ordering, determining cooking facilities, cooking, serving and general maintenance of the food service areas.

On any incident, the supplying of efficient food services is an extremely important part of the incident operations. The Food Unit must be able to anticipate incident needs both in terms of numbers of personnel to be fed as well as any special feeding requirements due to the kind/location of the incident. The Food Unit will be responsible for supplying the food needs for the entire incident, including all remote locations (e.g., Camps and Staging Area), as well as supplying food service to operations personnel unable to leave tactical assignments. The Food Unit must interact closely with the Plans Section to determine personnel requirements, the Facilities Unit for fixed-feeding locations, the Supply Unit for food ordering, and the Ground Support Unit for supplying transportation services.

4.7.6 Medical Unit

The Medical Unit is primarily responsible for:

1. Developing the Incident Medical Plan.
2. Developing procedures for handling any major medical emergency involving incident personnel.
3. Providing medical aid and transportation for incident assigned injured and ill personnel.
4. Assisting in the processing of all paper work related to injuries or deaths of incident assigned personnel.

It is becoming increasingly important to establish a Medical Unit on major incidents. The Medical Unit will have responsibility for all medical services. The Unit Leader or designee will develop a medical plan which will form a part of the action plan. The medical plan should provide specific information on medical aid capabilities at incident locations, provide information on potential hazardous areas or conditions, and provide off-incident locations and procedures for handling serious situations.

The Medical Unit will also assist the Finance Section in handling compensation-for-injury related procedures and paper work including written authorizations, billing forms, witness statements and administrative documents on medical situations as required.

4.8 Finance Section

The Finance Section is established on incidents when the agency(s) who are involved have a specific need for finance services. In the ICS< not all agencies will require the establishment of a separate Finance Section. In some cases where only one specific function is required (e.g., cost analysis), that position could be established as a Technical Specialist in the Plans Section.

When a Finance Section is established on an incident, the following Units may be established as the need requires:

FINANCE SECTION

- | | | |
|----|--------------------------|--------------------------|
| 1. | Time Unit | TIME UNIT |
| 2. | Procurement Unit | COMPENSATION/CLAIMS UNIT |
| 3. | Compensation/Claims Unit | COST UNIT |
| 4. | Cost Unit | |

The Finance Section Chief will determine, based on present and future requirements, the need for establishing specific Units. In certain of the functional areas (e.g., Procurement), a functional Unit need not be established if only one person would work in the Unit. In that case, a Procurement Officer would be assigned rather than designating a Unit.

The Finance Section Chief should be designated from the jurisdiction/agency which has the requirement, due to the specialized nature of the Finance functions. The Section Chief may have a Deputy.

4.8.1 Time Unit

The Time Unit is primarily responsible for ensuring that daily personnel time recording documents are prepared and compliance to agency(s) time policy is being met. The Time Unit is responsible for ensuring that equipment time reporting is accomplished in the Logistics Section-Ground Support Unit for ground equipment, and in the Operations Section-Air Support Unit for helicopters.

If applicable, (depending upon the agencies involved) personnel time records will be collected and processed for each operational period. The time Unit Leader may desire to have one or more assistants who are familiar with respective agency(s) time recording policies. Records must be verified, checked for accuracy and posted according to existing policy. Excess hours worked must also be determined and separate logs maintained.

4.8.2 Procurement Unit

The Procurement Unit is responsible for administering all financial matters pertaining to vendor contracts. The Procurement Unit will coordinate with local jurisdictions on sources for equipment; prepare and sign equipment rental agreements; and process all administrative paper work associated with equipment rental and supply contracts.

Note that in some agencies, certain procurement activities will be accomplished as a function of the Supply Unit in the Logistics Section. The Procurement Unit will also work closely with local cost authorities.

4.8.3 Compensation/Claims Unit

In the ICS, Compensation-for-Injury and Claims are included together within one Unit. It is recognized that specific activities are different, and may not always be accomplished by the same person.

Compensation-for-Injury is responsible to see that all forms required by workers' compensation programs and local agencies are completed. The person performing this activity is also responsible to maintain a file of injuries and illnesses associated with the incident and to ensure that all witness statements

are obtained in writing. Many of this Unit's responsibilities are done or partially done in the Medical Unit, and close coordination with that Unit is essential.

The Claims function will be responsible for handling the investigation into all civil tort claims involving property associated with or involved in the incident. The Unit will maintain logs on claims, obtain witness statements, document investigations and agency follow-up requirements.

4.8.4 Cost Unit

The Cost Unit is responsible for providing cost analysis data for the incident. The Unit must ensure that all pieces of equipment and personnel which require payment are properly identified; obtain and record all cost data; analyze and prepare estimates of incident costs and maintain accurate records of incident costs.

Increasingly, the Cost Unit will be called upon to input to the planning function in terms of cost estimates of resource use. The Unit must maintain accurate information on the actual cost for the use of all assigned resources.

5.0 COMPLEX INCIDENTS

In the application of ICS to very complex and large incidents (e.g., wildland fires which may cover thousands of acres over several political subdivisions) it is possible to use a modified ICS organizational structure to meet the needs of the incident. This section provides a brief explanation of large incident management which may be employed. Not all situations are alike, and other forms of organization than those described here may be as suitable.

Two different examples of organizing for large incident management will be described. The first deals with a single but large wildland fire incident which, because of its size, requires additional support but does not require the establishment of two complete incident organizations. The second example will deal with a large wildland fire incident which could be divided into two separate incidents, each with a complete command structure and with an Area Command Authority to ensure inter-incident coordination.⁽¹⁾

Both examples given here assume a unified command structure as a starting point. There would be no difference if the incidents were being run under a single command structure.

5.1 Extending the ICS Organization

A very large wildland fire incident is depicted in Figure 5-1. This incident has grown from a single command (County A) to a unified command organization (Counties A, B & C). The standard ICS functional Sections of Operations, Planning, Logistics and Finance have applied to this point.

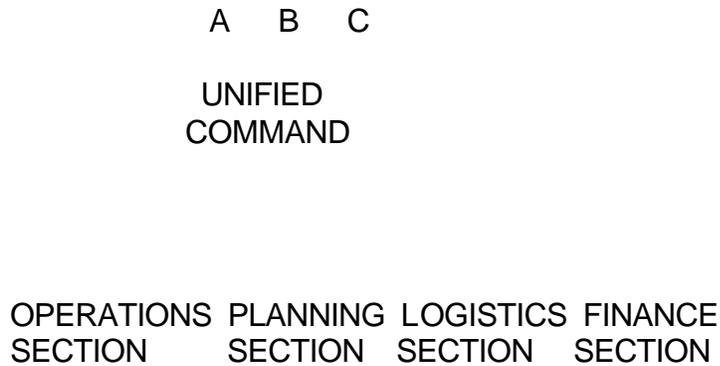


Figure 5-1
Large Wildland Incident Covering Several Political Subdivisions

-
- (1) The Area Command Authority (ACA) is an individual and/or organization established to ensure inter-incident coordination for command, operations, planning and logistical matters. The ACA may be located at either of the Incident Command Posts or at a separate nearby location. It may also function from a regional facility. When in existence, the ACA may change the priorities/objectives at any o the incidents under its authority.

1. The Operations Section is not large enough to accommodate adequate resources under the span-of-control guidelines.

In the ICS, the overall size of the Operations Section is determined by the makeup of the resources within each Division or group.

For example, using a Division consisting of: 3 Crew Strike Teams; 1 Dozer Strike Team; and 1 Engine Strike Team, a "typical" Division could consist of a minimum of 131 personnel. Expanding this to a 25-Division, 5-Branch incident, the personnel complement would be in excess of 3200 personnel for each operational period (shift).

In order to provide additional Operations personnel and stay within span-of-control guidelines, another Operations Section could be added to the existing incident organization. At this time, the unified command structure of the incident would be modified to include a Deputy Incident Commander for Operations. This Deputy would have the responsibility to ensure that all aspects of the two (old and new) Operations Sections were fully coordinated (between each other and with other Sections). The Deputy Incident Commander for Operations would normally be co-located with the Incident Command. See Figure 5-2.

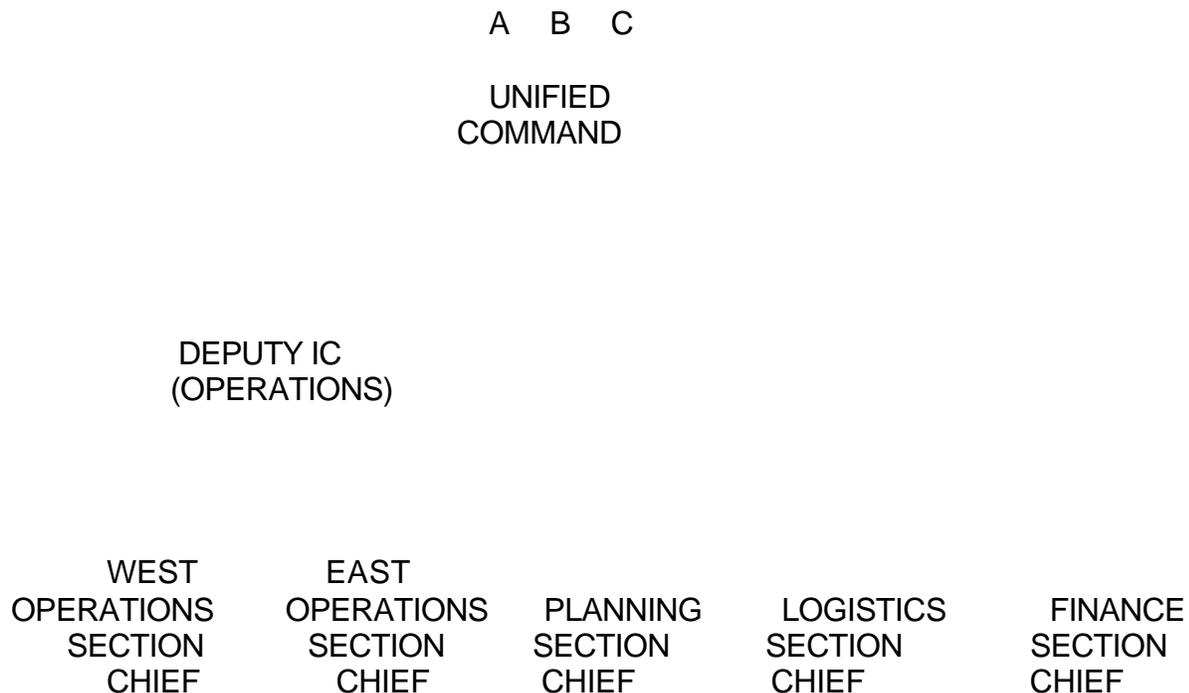


Figure 5-2
Unified Command - Two Operations Sections

2. Logistical support can no longer be maintained adequately.

If the incident were so large geographically that it would not be possible for the Incident Base to support the required number of camps and other Logistics Section to support one part of the incident.

In this situation, another Incident Base and necessary camps serviced by that Base could be established. At this point, a Deputy Incident Commander for Logistics should be added to the command structure to ensure full coordination of the two Logistics efforts. See Figure 5-3.

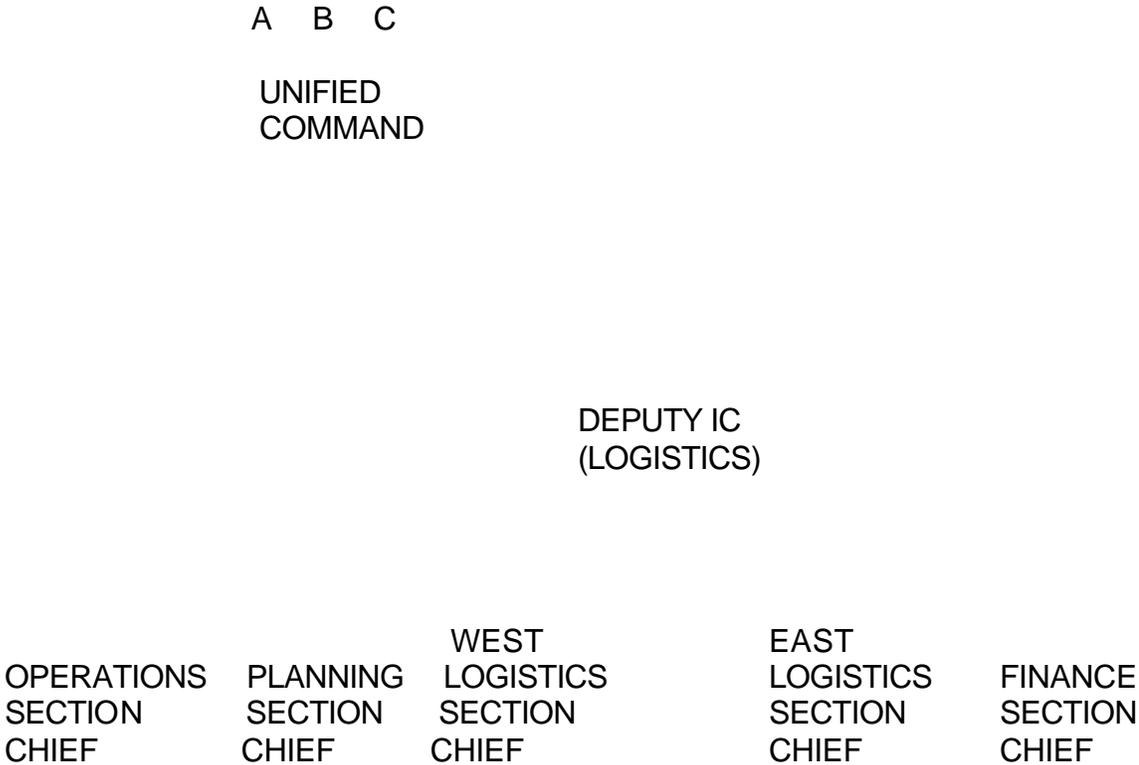


Figure 5-3
Unified Command - Two Logistics Section

3. Incident becomes too large for a single Action Plan.

If the incident becomes so large that there is no logical set of objectives that pertain to the entire incident, or if the preparation and/or distribution of the plan could not be feasibly accomplished within the required time frame, then a modified planning structure could be adopted. In this case, the addition of another Planning Section is not recommended. The better solution would appear to have detailed action planning done at the Branch level. This could be accomplished by the Planning Section providing the following to each Branch:

1. Incident general objectives
2. Specific objectives for the Branch for the next operational period.
3. Incident resource summary for the next operational period.
4. Weather and Safety Information as appropriate.
5. Any changes to Logistical support.

Individual Branches could then perform detailed action planning from this information. (A modification to this could be accomplished by designating only certain Branches, e.g., those in a mop-up mode, as Branches which would perform Branch action planning. Other Branches would continue under a centralized planning structure.) In either case, the Planning Section should provide each Branch which is doing individual Branch planning with the required capability in terms of personnel and other support to get the planning accomplished.

5.2 Dividing an Incident

The diagram at the right describes a very large wildland fire incident which covers an extensive area within several political jurisdictions. The incident is divided by a major ridge. The incident is now so large that the management of both Planning and Logistics operations has become very complex. The incident has until this time been run under a unified command organization. If the unified command determines that the incident should be divided into two separate incidents, the following should be accomplished.

1. An Area Command Authority (ACA) should be established. The existing unified command members may continue as jurisdictional liaison representatives to the Area Command Authority.
2. A decision would be reached by the unified command on how best to divide the incident. This could be done in several ways, depending upon terrain considerations, political boundaries, current Branch structure, etc.
3. Incident Commanders, command and general staff would be selected for each incident.
4. Supporting organization facilities, locations, etc., would be designated.

5. An appropriate time would be designated for establishing the separate incidents with individual names.
6. The ACA would be responsible to ensure that jurisdictional objectives are being met through the respective Incident Action Plans, and that necessary procedures are established and functioning to ensure inter-incident coordination on all matters.

The organization would be as follows:

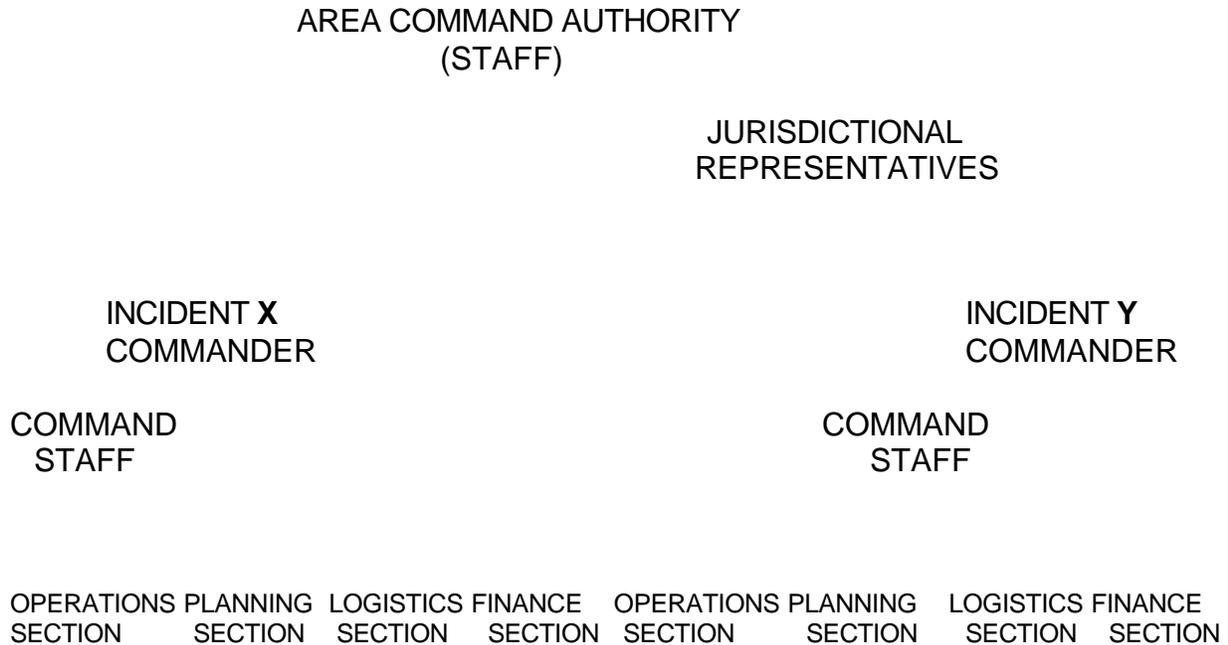


Figure 5-4

ACA - Two Incident Organization

5.3 Final Considerations

The key factors to be kept in mind in making a determination to establish an Area Command Authority for large incident management or to extend an existing organization are of cost and effectiveness.

If the Incident Planning and Operations functions are adequate, and have room for growth, but Logistics is not adequate, then the decision should be to establish another Logistics organization, and save the cost of establishing an entirely new complete incident organization and facilities. Similarly, if Operations and Logistics appear to be adequate but detailed action planning can no longer be accomplished by a single entity, then from an effectiveness standpoint, it would be better to allow Branch Action Planning and ensure that appropriate planning coordination is taking place.

If the incident is divided into two main segments by geographical barriers; is separating naturally; or if it appears that any two of the major functional Sections of the ICS will require extensive augmentation, the most effective solution would be to create two separate incident organizations.

APPENDIX A

ICS MODULAR DEVELOPMENT

The ICS was developed to meet both the routine day-to-day needs of fire service agencies, as well as the very large but relatively infrequent major incidents.

To meet both these needs, the organizational structure develops from the top down, and basically unfolds to meet the need. This is accomplished in the ICS by having a functional organization which accommodates rapid growth and expansion, and by maintaining responsibility for functional performance at the highest level possible. By properly placing responsibility within the appropriate functional area, it is possible to always maintain the size of the overall organization at just what is needed to get the job done.

A series of examples will be used to demonstrate the organizing.

INFRARED FIRE MAPPING AND DETECTION

INTELLIGENCE REQUIREMENTS

Accurate and timely intelligence on location of the fire perimeter is a vital component to the success of fire suppression. Fire locations must not only be accurately known, but the means of obtaining this information must be rapid and timely. With this intelligence, the fire boss and staff can plan strategy with respect to tactical employment of personnel, equipment, and logistical support.

MAPPING

Campaign fire intelligence requirements can be met with airborne infrared scanners that can rapidly and accurately map fires either day or night and through dense smoke. Fire perimeter and spot fire information resulting from IR scanning should remove one of the fire boss's greatest problems--knowledge of the fire's location, particularly after a blowup has occurred.

IR scanning is not meant to solve all of the fire boss's problems, but is intended to supplement the present method of ground and air reconnaissance.

DETECTION

Although comparatively new to the scene, IR detection has proven its usefulness. Rapid surveillance is definitely needed following an outbreak of lightning strikes or during a forest closure in order to accurately locate small fires. IR detection has been used successfully in many of the regions.

OTHER USES

1. Fire detection after lightning storms pass.
2. Thermal deposit detection.
3. Deer population census during winter months.
4. Checking volcanoes in Washington for signs of new heat.
5. Detection of illegal or abandoned campfires.

CAPABILITIES

- Fires can be mapped either day or night. Imagery can be taken at sunrise or sunset but usually is of poor quality due to solar reflection and rapidly changing surface temperatures.
- Rapid surveillance can be made during critical periods.
- Accurate plotting of the fire perimeter and spot fires is easily accomplished when the imagery is of good quality.

- Accurate rate-of-speed data can be collected by flying a series of missions at predetermined intervals.
- Imagery provides excellent information on remaining hot spots during mop-up stages.
- Fire detection can be flown using the Merlin III or King units. Both aircraft are specially equipped for night navigation in remote areas. These aircraft can detect a six-square-inch fire burning at 900 degrees F. from 10,000 feet above the terrain, or a one-square-foot fire from 15,000 feet.
- The Merlin III and King systems are equipped with TDMs (Target Discrimination Modules). These modules enable the systems to "earmark" anything on the imagery above 200 degrees F. depending on the operator's equipment setting.
- The Merlin III and King Air systems are equipped with mile markers. These markers enable the interpreter to determine a rough scale of the imagery and aid in determining the location of unknown points.
- The Queen, King, and Merlin III are capable of dropping imagery at predetermined points.

LIMITATIONS

- The fire perimeter is sometimes difficult to determine accurately in imagery of poor quality. Aerial photos, contour maps, and some knowledge of the fire perimeter help expedite interpretation.
- IR signals will not penetrate clouds or fog.
- If a scanner breaks down on a fire, it may be impossible to repair the equipment at the scene due to the unavailability of certain components. If repair at the scene is not possible, all measures will be taken to send a replacement aircraft and scanner.
- As a general rule of thumb, a hard surface runway 5,000 feet in length is required for night takeoffs and landings. This length is variable depending on the particular aircraft used and the density altitude at the airport at takeoff and landing time. The final decision on the minimum length of the runway will be made by the pilot in command of the aircraft.
- Infrared pilots are limited to seven hours of flying and a fourteen-hour duty day. If double-crewed, they are capable of providing fourteen hours of flying in a 24-hour day.

MAFFS

The Modular Airborne Fire Fighting System (MAFFS) uses Air National Guard and Air Force Reserves C-130 aircraft to fight forest fires. The C-130 has four turbine engines. Its wing span is 132 feet and its tail is 38 feet high. It carries a five-person crew.

MAFFS is activated only when all regular forest service and CDF airtankers are committed. This restriction is in accordance with an agreement between the Department of Defense and the Department of Agriculture.

The Air Force has approved five air bases in Region V where MAFFS aircraft can operate (see above). MAFFS aircraft can only be used with a Forest Service lead plane.

HISTORY

After numerous large Southern California fires in 1970, several Congressmen asked why the military could not use their aircraft to assist the Forest Service in fire suppression. The Congressmen asked the Air Force to cooperate with the Forest Service and arrange some form of assistance. The result was the development of MAFFS.

In 1974, the MAFFS program became operational. In June, Air Force crews were trained by the Forest Service in Boise, Idaho, in the use of modules for dropping fire retardant. Seven crews were trained in Lockheed C-130 aircraft. They were from active Air Force units (Dyess AFB) and the Air Force Reserves (Hamilton AFB). Later that year, a Reserves aircraft and crews from Hamilton AFB (452nd TAC) were used on the Cottonwood Fire near Alamogordo, New Mexico, the Saboba Fire in Southern California, and on the Granite Fire on the Stanislaus.

THE SYSTEM

MAFFS, unlike other aerial retardant dropping systems, is designed and constructed in a way that makes it easily adaptable to several types of cargo aircraft and helicopters presently being used by the Air Force.

The system consists of five modular tanks and twin exhaust pipes with a total capacity of 3,000 gallons. The tank system allows the pilot to discharge retardant at different pressures to obtain the desired retardant pattern on the ground. The entire load of retardant is expelled in four to five seconds using compressed air.

Since the retardant used in MAFFS is under pressure, it does not fall from the aircraft in the same pattern as that from a standard airtanker. Pressurization causes the retardant to be ejected from the aircraft like spray from an aerosol can. The spray, in its descent to the ground, coats all surfaces of the forest fuel. Fire spray results in little impact at ground level, which adds to the safety of firefighters and property.

WHEN AND HOW MAFFS WILL BE USED

Trained C-130 crews and modular systems are located at the following air bases:

- Cheyenne, Wyoming (National Guard)
- McClelland, Sacramento, California (Air Force Reserves)
- Kelly Field, Texas
- Van Nuys, California (National Guard)

These units are available to assist in forest and grassland fire emergencies occurring within the continental United States. Such assistance is requested through the National Interagency Fire Center (NIFC), which is staffed by Federal Interagency personnel from the Departments of Agriculture and Interior and carries out their parent department's fire responsibilities.

The two situations in which the Department of Defense will provide such assistance are:

- At the request of NIFC to suppress wildfires on federal, state, or private property when all available or suitable civilian resources have been committed.
- When a forest or grassland fire on state or private land is declared a major disaster or a determination for emergency assistance is made by the President.

NEWSPAPER FILLERS

During an incident, the following topics may be used if appropriate to the specific circumstances.

In the United States, fireworks were used to celebrate Independence Day as early as July 4, 1777. Since 1777, fireworks carelessly used have destroyed life, property, and natural resources.

Independence Day is the national fireworks festival in the United States and is the largest celebration of its kind in the world. The 4th of July weekend is also infamous for its destructiveness by being one of California's most wildfire destructive weeks.

Fireworks cause wildfires; wildfires cost money to suppress; taxpayers pay the bill.

Do you know how to tell illegal fireworks from legal fireworks? Look for the Safe and Sane State Fire Marshal's seal on legal devices or packages. Read the warning label and follow instructions.

Safe and Sane fireworks do not include any device that explodes or becomes airborne. Be fire safe.

The Child Protection Act of 1966 banned large, exploding fireworks and other devices containing more than 2 grains of explosives. Violation is punishable by a fine and/or imprisonment.

Remember - in California any person who causes injuries or damages with fireworks may be held for civil or criminal charges.

Parents can be held liable for damages or injuries caused by their children using fireworks.

Enjoy fireworks, where legal, from a safe distance.

Use fireworks, where legal, outdoors in a clear area away from flammable vegetation, buildings, and houses.

Purchase fireworks, where legal, from approved retailers only.

Think fire safety - don't point or throw fireworks at another person.

Think fire safety - don't use any fireworks in mountains or woodland areas, vacant lots or areas covered with weeds or dry grass.

"Defensible Space"

"Firesafe California"

Mechanical equipment is wildfire enemy #1.

Fire Safety! It can save your home.

Wildfire prevention starts with you.

Do you follow camping fire safety rules? Clear a safe area before starting a campfire. Don't leave any fire until it is completely extinguished. These and other safe camping rules work!

Do you check fire conditions before burning anything outdoors? If it's a hot, dry, or windy day, wait until the danger is reduced. And don't forget to get a burning permit first!

Have you checked to make sure your equipment has an approved spark arrester? Almost every type of equipment should have an approved spark arrester. Check it each time you use equipment in wildland areas. Don't use equipment when fire danger is high.

When you visit wildland areas, do you park in safe places? Don't park cars or other vehicles on dry grassy areas. Hot mufflers and exhaust pipes can start a fire you won't even see - until it's too late!

Is there flammable vegetation dangerously close to your house? Brush and flammable vegetation - especially when they are dry - are tinder for a fire. Clear a space at least 30 feet from your home. Cut all overhanging branches down - they can shoot a fire right to your roof.

Have you landscaped with the right plants? Fire resistant plants - lawns, ivy, or iceplant can help slow down a wildfire if it starts!

Will your roof burn? Homes roofed with fire resistant materials stand a much greater chance of surviving a wildfire. Research has shown that wood shingle roofs, treated or not, are the most susceptible to the spread of fire.

Is your chimney safe? Have you put spark arresters on all chimneys and other vents where flames and sparks can escape or enter your home? Make sure fires stay where they belong - and under control.

Is your neighborhood firesafe? Unprotected homes are threats to your own. Talk to your neighbors - and local elected officials - about setting up a firesafe program in your community.

Give your home a fighting chance - provide "Defensible Space."

It isn't hard to be firesafe. The California Department of Forestry and Fire Protection or your local fire department has information available. Take a few minutes and give them a call.

Does your equipment have an approved spark arrester? All types of motorized tools, from chain saws and tractors to dirt bikes, should be equipped with these inexpensive fire prevention devices.

Spark arresters prevent wildfires.

If you live in or are going into a wildland area, have you checked your spark arrester? Is it properly installed? Has it been cleaned out? Make sure all fire prevention devices are in good working order - it only takes a second!

When you reach your wildland destination, do you park in a safe place? Dry grass, brush, and leaves are all potential tinder for a fire. Hot exhaust pipes and mufflers can start fires you won't even see - until it's too late!

Have you checked your equipment for faulty electrical wiring and fuel system leaks? Performing routine maintenance will make your equipment work better - and prevent wildfires at the same time!

Is it safe to use your equipment? Fire danger is greatest on hot, dry days. If you have to use your equipment under these conditions, wait until it cools off. If you have any questions, consult your local fire department or the California Department of Forestry and Fire Protection.

Before you buy or rent any equipment or vehicle, check for fire hazards. Two seconds of thought can save 2,000 acres!

Ninety-eight percent of all wildfires in California are caused by humans.

NIGHT VISION GOGGLES

The primary helmet-mounted night vision system tested by the Forest Service is the AN/PVS-5 night vision goggles developed by International Telephone and Telegraph in Roanoke, Virginia. Members of the Helicopter Night Operations test team believe that this simple system has a great deal of promise in many land management operations, including fire support operations at night. Despite some limitations, the goggles represent a complete night vision system that does not require any aircraft modifications for operational integration.

An attractive feature of the goggles from the pilot's viewpoint is that the information is presented at eye level, where it is most convenient. Further, the goggles allow the pilot to see in the darkness with both hands free. The system provides night vision using available moonlight, starlight, or horizon reflections.

In use, the goggles should provide recognition of personnel at more than 100 meters with comparatively greater ranges for vehicles, depending on their size. Although appearing in a greenish color, images can be seen reasonably well up to about 1,000 meters, depending on light conditions.

The goggles weigh less than two pounds and cost approximately \$14,000 (originally) each. These lightweight but expensive goggles are worn by the pilot during night operations, but are not worn by the co-pilot. The normal unaided vision of the co-pilot provides a balance between what can be seen with the goggles and what cannot.

The only night flying operation presently done in Region V by Forest Service personnel is based at Rose Valley on the Los Padres National Forest. The Forest Service module undertaking the night operations consists of a contracted Bell 211 helicopter and pilot, a Forest Service 7-person helitack crew, and a 21-person helishot crew. At present, night operations are conducted only for water and retardant drops. Fire suppression activities performed at night are more effective than operations during the day because temperature, humidity, and wind conditions are more favorable after sunset. In the future, night operations will also be conducted to ferry firefighters and supplies.

OFFICE OF EMERGENCY SERVICES (OES)

The Office of Emergency Services (OES) is an organization designed to provide coordination, mobilization, and equipment to aid in state disasters. OES gives help in the form of well-organized mutual aid.

OES originated in 1950 as the Civil Defense Office. That name has since changed, but the basic function of OES, outlined in the State Fire and Rescue Disaster Plans and the Master Mutual Aid Agreement, is still the same.

OES operates on the premise that both human-caused and natural emergencies will occur. These incidents will require an inordinate amount of state-sponsored assistance. OES coordinates and assigns other agencies to assist in these large-scale disasters. OES equipment is housed at various agencies, such as city fire departments and CDF fire stations.

OES acts in disasters, such as fires, floods, earthquakes, hurricanes, sabotage, civil disturbances, and enemy attack. OES is equipped with fire suppression material, engines, monitoring equipment, water pipes, and other materials used to alleviate the effects of major disasters.

Emergency service is organized on four levels: state, regional, operational, and local. Each jurisdiction has a coordinator assigned to ensure that areas can give or receive well-organized aid efficiently. Coordinators are often representatives of other agencies.

California is sectioned into six regions according to population density. A regional fire and rescue coordinator is selected by area fire and rescue coordinators within each region. This person assumes responsibility for coordination and dispatch of regional mutual aid resources. The regional coordinator is responsible for keeping the State Fire and Rescue Coordinator informed of all operations during a disaster.

OES acts in the rescue and care of disaster victims and aids in evacuation operations. OES provides fire suppression equipment and personnel and water pipes if an area's water system is damaged.

Approximately 110 engines are available from OES. These engines can be sent directly to a fire line. OES has close to 50 engines held in reserve.

Agencies throughout the state share the OES net, a radio frequency that enables these agencies to communicate quickly with one another.

After it was developed in 1950, the Master Mutual Aid Agreement was adopted by California's incorporated cities and by all 58 counties. Each jurisdiction retains control of its own personnel, but gives and receives help when necessary.

OPERATING PROCEDURES
(Excerpts for 8100 Manual)

Page #

1. Injury of Fatality (including burn center locations) _____
2. Vehicle Accidents - CDF _____
3. Aircraft Accidents _____
4. Area Closures and/or Evaluations _____

INJURY FATALITY OPERATING PROCEDURE

Excerpts from ECC 8100 Manual

Regarding: Injury/Fatality Accident,
Area Closures

SUBJECT: Injury or Fatality

Responsibility

Action

Any ECCs

1. Receive report and record information. Notify responsible unit ECC.

Unit ECC

2. Dispatch emergency equipment as appropriate.
3. If injury is a burn, follow CDF policy for burn victim. Burn center locations and numbers are attached to this procedure.

Civilian

4. If civilian injured on state property or in state activity, obtain the following information:
 - a. Names of CDF employees or type of CDF equipment, if involved.
 - b. Time, place, circumstances of incident.
 - c. Names and addresses of injured.
 - d. Names and addresses of witnesses.

CDF Employee

5. If employee is assigned to an incident notify unit duty officer as to the following:
 - a. Provide CDF liaison at hospital.
 - b. Notify employee family as appropriate.
 - c. Notify State Compensation Insurance Fund.

d. Notify Cal-OSHA.

CONTINUED

SUBJECT: Injury or Fatality (continued)

Responsibility

Action

Unit ECC
(continued)

CDF Employee (continued)

6. If nonserious injury to corps member or ward, notify home camp if camp is within unit where injury occurred.

Fatality or Serious Injury

7. Notify coroner, as needed.
8. Notify region ECC of all appropriate information.
9. Notify media according to local policy.

Region ECC

10. Receive report and forward electronic information to Headquarters.
11. Notify region law enforcement section.
12. If serious injury to CCC, inmate, or ward, notify region camp coordinator.

Headquarters ECC

13. Receive report and notify Chief of Fire Control Operations, department safety coordinator, department training officer.
14. If serious injury to CCC, inmate, or ward, notify conservation camp operations.
15. Coordinate Headquarters investigative team, and notify appropriate region of home camp as needed.
16. Transmit electronic information to Office of Legal Affairs.

END

Burn Centers approved by the California Department of Health Services:

Brotman Medical Centers
3828 Delmas Terrace
Culver City, CA 90230
(213) 836-7000

St. Francis Memorial Hospital
900 Hyde Street
San Francisco, CA 94109
(415) 775-4321

Chico Community Memorial Hospital
560 Cohasset Road
Chico, CA 95926
(916) 345-2411

Sherman Oaks Community Hospital
4929 Van Nuys Boulevard
Sherman Oaks, CA 91403
(818) 981-7111

Valley Medical Center of Fresno
445 South Cedar Avenue
Fresno, CA 93702
(209) 453-4000

Dameron Hospital
525 West Acacia Street
Stockton, CA 95203
(209) 944-5550

University of California
Irvine Medical Center
101 City Drive South
Orange, CA 92668
(714) 383-3131

Brookside Hospital
2000 Vale Road
San Pablo, CA 94806
(415) 235-7000

San Bernardino County Medical Center
780 East Gilbert Street
San Bernardino, CA 92404
(714) 383-3131

Alta Bates Hospital
3001 Colby Street
Berkeley, CA 94705
(415) 845-7110

UCD Medical Center
2315 Stockton Boulevard
Sacramento, CA 95817
(916) 453-3636

Eden Hospital
20103 Lake Chabot Road
Castro Valley, CA 94546
(415) 537-1234

University of California
University Hospital San Diego
225 West Dickinson Street
San Diego, CA 92103

Santa Clara Valley Medical Center
751 South Bascom Avenue
San Jose, CA 95128
(408) 279-5101

San Francisco General Hospital
Medical Center
1001 Potrero Avenue
San Francisco, CA 94110

Los Angeles County
USC Medical Center
1200 N. State Street
Los Angeles, CA 90033
(213) 226-6503

Torrance Memorial Hospital
Medical Center
3330 West Lomita Boulevard
Torrance, CA 90505 (213) 325-9110

VEHICLE ACCIDENT OPERATING PROCEDURE

SUBJECT: Vehicle Accident - CDF

<u>Responsibility</u>	<u>Action</u>
Any ECC	1. Receive report and record information. If region ECC or Headquarters ECC, notify responsible unit or jurisdiction.
Unit ECC	2. Dispatch emergency equipment as needed. 3. If injury or fatality, see Procedure #26.
Involved ECC	4. Secure accident information: <ul style="list-style-type: none"> a. Driver's licenses and names of involved drivers. b. Vehicle license and registered owner for each involved vehicle. c. Exact place of accident. d. General results of accident. e. Injuries. 5. Notify operations officer and dispatch fire prevention officer for investigation. 6. Notify insurance claims office. 7. Notify region ECC by phone; follow with electronic information.
Region ECC	8. Notify Headquarters ECC if serious accident, injury, or fatality. Notify region staff according to region policy.
Headquarters ECC	9. Notify Deputy Director for Fire Protection or designate. 10. Notify department safety coordinator. 11. If CCC, inmate, or ward, notify conservation camp operations.

12. Coordinate Headquarters investigative team.

END

AIRCRAFT ACCIDENT OPERATING PROCEDURE

SUBJECT: Aircraft Accident

Responsibility

Action

Unit ECC

1. Receive report and record information, obtaining as much of the following information as available:
 - a. Number and extent of injuries.
 - b. Type of aircraft.
 - c. Aircraft numbers:
 - (1) CDF
 - (2) FAA
 - (3) Military
 - d. Whether helicopter can land at/or near scene.
 - e. Extent of aircraft damage.
 - f. How accident occurred.
2. Take action according to Standard Expense Plan.
3. Notify law enforcement agency with jurisdiction at crash site.
4. Notify nearest FAA facility.
5. If military aircraft, notify base operations duty officer at base nearest crash site.
6. If CDF aircraft, do the following:
 - a. Notify ranger-in-charge or designate.
 - b. Notify region ECC by telephone, and follow up with electronic information.
 - c. Assign information officer.

- d. Release names of victims only after cleared through region office and Sacramento.

CONTINUED

AIRCRAFT ACCIDENT OPERATING PROCEDURE

SUBJECT: Aircraft Accident (continued)

<u>Responsibility</u>	<u>Action</u>
Unit ECC (continued)	<ol style="list-style-type: none"> 7. Record information. 8. Notify region chief or designate. 9. Notify Headquarters ECC by telephone. If CDF aircraft, forward information and electronic information from unit to Sacramento ECC. 10. Record information. 11. If CDF aircraft accident, do the following: <ol style="list-style-type: none"> a. Notify Chief of Fire Control Operations or designate. b. Notify Senior Air Operations Officer or designate. c. Notify department safety officer. d. Notify legal affairs officer. If not available, contact the following: <ol style="list-style-type: none"> (1) State Attorney General's office. If after normal hours, leave information with state capitol operator. (2) General Services insurance officer. If after normal hours, leave information with state capitol operator. e. Confirm formation of investigation team by region office consisting of members from Headquarters, region, and USFS.

END

AREA CLOSURE AND/OR EVACUATION OPERATING PROCEDURE

SUBJECT: Area Closure and/or Evacuation

<u>Responsibility</u>	<u>Action</u>
Unit ECC	<ol style="list-style-type: none"> 1. Record request from Incident Command to close or evacuate area. 2. Request responsible agency to close and/or evacuate the roads and/or area giving the following: <ol style="list-style-type: none"> a. Reason for closure and/or evacuation. b. Geographic boundaries of the closure and/or evacuation area. c. Time when closure and/or evacuation should be completed. d. Name of person requesting closure and/or evacuation. e. Name and location of liaison officer to coordinate closure and/or evacuation on CDF's behalf. 3. If the responsible agency is unable to accomplish the closure and/or evacuation in an acceptable time, CDF peace officers shall institute the closure and/or evacuation. (Request that the agency take over the closure as soon as possible.) 4. Notify the responsible agencies when normal traffic and/or occupation may resume.

END

PENAL CODE

409.5 Power of Peace Officers to Close Areas During Emergencies; Field Command Posts; Exception As to Newspaper Representatives, etc.

(a) Whenever a menace to the public health or safety is created by a calamity such as flood, storm, fire earthquake, explosion, accident or other disaster, officers of the California Highway Patrol, policy departments, marshal's office or sheriff's office, any officer by subdivision (f) of Section 830.3, and any officer or employee of the Department of Parks and Recreation designated a peace officer by subdivision (i) of Section 930.3, may close the area where the menace exists for the duration thereof by means of ropes, markers or guards to any and all persons not authorized by such officer to enter or remain within the closed area. If such a calamity creates an immediate menace to the public health, the local health officer may close the area where the menace exists pursuant to the conditions which are set forth above in this section.

(b) Officers of the California Highway Patrol, policy departments, marshal's office or sheriff's office or officers of the Department of Forestry designated as peace officers by subdivision (f) of Section 830.3 may close the immediate area surrounding any emergency field command post or any other command post activated for the purpose of abating any calamity enumerated in this section or any riot or other civil disturbance to any and all unauthorized persons pursuant to the conditions which are set forth in this section whether or not such field command post or other command post is located near to the actual calamity or riot or other civil disturbance.

(c) Any unauthorized person who willfully and knowingly enters an area closed pursuant to subdivision (a) or (b) and who willfully remain within such area after receiving notice to evacuate or leave shall be guilty of a misdemeanor.

(d) Nothing in this section shall prevent a duly authorized representative of any news service, newspaper, or radio or television station or network from entering the areas closed pursuant to this section.

PHONE SYSTEMS

CDF GREEN PHONE

The CDF "Green Phone" telephone system is a private telephone system that uses the state microwave network to connect CDF Headquarters, region offices, and units. The Green Phone system is primarily intended for emergency communications between Emergency Command Center dispatchers and other CDF Emergency Incident Managers.

ATSS TELEPHONE SYSTEM

The ATSS (Automatic Telecommunications Switching System) is a state-leased line system that provides discounted cost long distance service for all state agencies.

To ensure proper use of the ATSS service, specific dialing guides are included in the State Telephone Directory. These guides provide detailed dialing instructions and ATSS access codes.

The CDF Telephone Directory lists ATSS Access Codes for CDF offices.

PUBLIC RECORDS ACT AB277

Public Disclosure of Crime and Arrest Report

The California Government Code and the Public Records Act clearly established the right of the public and the news media to obtain information considered to be of public record. Government Code Section 6254(f) was amended and signed into law in 1982.

Government Code Section 6254. Except as provided in Section 6254.7 nothing in this chapter shall be construed to require disclosure of records that are any of the following:

(f) Records of complaints to or investigations conducted by, or records of intelligence information or security procedures of, the office of the Attorney General and the Department of Justice, and any state or local agency, or any such investigatory or security files compiled by any other state or local policy agency, or any such investigatory or security files compiled by any other state or local agency for correctional, law enforcement or licensing purposes, except that state and local law enforcement agencies shall disclose the names and addresses of persons involved in, or witnesses other than confidential informants to, the incident, the description of any property involved, the date, time, and location of the incident, all diagrams, statements of the parties involved in the incident, the statements of all witnesses, other than confidential informants, to the victims of an incident, or an authorized representative thereof, an insurance carrier against which a claim has been or might be made, and any person suffering bodily injury or property damage or loss, as a result of the incident caused by arson, burglary, fire, explosion, larceny, robbery, vandalism, vehicle theft, or a crime of violence as defined by subdivision (b) of Section 13960, unless the disclosure would endanger the safety of a witness or other person involved in the investigation, or unless disclosure would endanger successful completion of the investigation or a related investigation provided, however, that nothing herein shall require the disclosure of that portion of those investigating files which reflect the analysis or conclusions of the investigating officer.

Other provisions of this subdivision notwithstanding, state and local law enforcement agencies shall make public the following information, except to the extent that disclosure of a particular item of information would endanger the successful completion of the investigation or a related investigation:

(1) The full name, current address, the occupation of every individual arrested by the agency, the individual's physical description, including date of birth, color of eyes and hair, sex, height and weight, the time and date of arrest, the time and date of booking, the location of the arrest, the factual circumstances surrounding the arrest, the amount of bail set, the time and manner of release or the location where the individual is currently being held, and all charges the individual is being held upon, including any outstanding warrants from other jurisdictions and parole or probation holds; and

(2) The time, substance, and location of all complaints or requests for assistance received by the agency and the time and nature of the response thereto, including, to the extent such information regarding crimes alleged or committed or any other incident investigated is recorded, the time, date and location of occurrence, the time and date of the report, the name, age, and current address of the victim, except that the address of the victim of any crime defined by Section 261, 264, 264.1, 273a, 273d, 285, 288a or 289 of the Penal Code shall not be disclosed, the factual circumstances surrounding the crime or incident, and a general description of any injuries, property or weapons involved.

The California State Penal Code Section 409.5(d) allows the news media to enter scenes of disaster, riot, or civil disturbance. This does not include crime scenes, and does not imply that the news media can interfere with incident operations while they are in the area concerned.

Section 409.5 [Power of peace officers to close areas during emergencies: Entering or remaining within area as misdemeanor: Exception as to newspaper representatives, etc..] (a) whenever a menace to the public health or safety is created by a calamity such as flood, storm, fire, earthquake, explosion, accident, or other disaster, officers of the California Highway Patrol, police departments, or sheriff's office, any officer or employee of the Department of Forestry and Fire Protection designated a peace officer by subdivision (f) of Section 830.3 and any officer or employee of the Department of Parks and Recreation designated a peace officer by subdivision (i) of Section 830.3, may close the area where the menace exists for the duration thereof by means of ropes, markers, or guards to any and all persons not authorized by such officer to enter or remain within the closed areas. If such a calamity creates an immediate menace to the public health, the local health officer may close the area where the menace exists pursuant to the conditions which are set forth above in this section.

(b) Officers of the California Highway Patrol, police departments, or sheriff's office or officers of the Department of Forestry and Fire Protection designated as peace officers by subdivision (f) of Section 830.3 may close the immediate area surrounding any emergency field command post or any other command post activated for the purpose of abating any calamity enumerated in this section or any riot or other civil disturbance to any and all unauthorized persons pursuant to the conditions which are set forth in the section whether or not such field command post or other command post is located near to the actual calamity or riot or other civil disturbance.

(c) Any unauthorized person who willfully and knowingly enters an area closed pursuant to subdivision (a) or (b) and who willfully remains within such area after receiving notice to evacuate or leave shall be guilty of a misdemeanor.

(d) Nothing in this section shall prevent a duly authorized representative of any news service, newspaper, or radio or television station or network from entering the areas closed pursuant to this section.

RECOGNITION AWARDS

Introduction

Information Officers at times may be required to write and release information about special Employee Recognition Awards. While it is the responsibility of the personnel section to select the employees to be awarded, the writing of the News Release often is the responsibility of the Information Officer.

The criteria for each of the Special Employees Recognition Awards can be found in the "Awards" Section 1035 in the Personnel Handbook.

Recognition Awards

The Government code authorizes awards for State employees who perform special acts or services in the public interest or who make exceptional contributions to the operation of State Government. The Department bestows appropriate honor upon personnel who perform acts or accomplishments not within the scope of State Government but which contribute to the efficiency and prestige of department. CDF also recognizes the need to honor the public sector for accomplishments which further the CDF mission.

This section gives a general overview of Federal, State and Department level awards which are available to recognize state employees and the public sector.

I. Federal Level

A. SMOKEY BEAR AWARD - United States Department of Agriculture-Forest Service

Any individual or organization who have made outstanding contributions in wild fire prevention efforts shall be eligible for nominations. Recognized efforts include educational activities, forest management, law enforcement, journalism, media coverage, advertising campaigns, engineering activities.

1. Golden Smokey Bear Statuette. This award is given to organizations or individuals that have provided sustained outstanding national service in forest fire prevention.
2. Silver Smokey Bear Statuette. This award is given to organizations or individuals that have provided outstanding national or regional (multi-State) service in forest fire prevention over a minimum 2-year period.

3. Bronze Smokey Bear Statuette. This award is given to organizations or individuals that have provided outstanding regional or State-wide service in forest fire prevention over a minimum 2-year period.
4. Smokey Bear Citation. This award is given to organizations or individuals for outstanding local service in forest fire prevention over a minimum 2-year period.
5. Smokey Bear Appreciation Award. This award is given to organizations or individuals for significant service for forest fire prevention at any level for a minimum 1-year period.
6. Smokey's Helper Patch. While not an official part of the Smokey Bear Awards program, this patch, available through the annual CFFP campaign catalog, may be used to recognize those individuals who have contributed to forest fire prevention on a one-time basis. This patch is not intended for general distribution.

II. State Level

- A. SPECIAL ACT - A special act is an extraordinary act of heroism by a State employee extended far above and beyond the normal call of duty or service performed at a great risk to the employee's own safety or life in an effort to save human life.
- B. SPECIAL SERVICE - A special service is an act of heroism by a State employee extended above and beyond the normal call of duty or service performed at personal risk to save human life or property.
- C. SUPERIOR ACCOMPLISHMENT - A superior accomplishment is an act by an individual employee or group of employees which makes an exceptional contribution to the efficiency or economy of the State Government or an exceptional improvement in its operation. Such acts may be categorized as follows:
 - 1. SUPERIOR ACCOMPLISHMENTS OF A NONRECURRING NATURE - These acts may include, but are not limited to:
 - a. An important contribution to science, research, or development.
 - b. Unequaled personal efforts in overcoming unusual difficulties or obstacles in the completion of a major project or task with substantial benefits to the State as a result thereof.
 - c. Completion of a major project or task in a significantly shorter period of time with substantial benefits to the State as a result thereof.
 - 2. SUSTAINED SUPERIOR ACCOMPLISHMENT - This award is designated to recognize employees who make a significant contribution to the Department by virtue of their exceptional job performance sustained over a period of not less than 24 months. The award is not intended to recognized length of service per se, but superior accomplishment significantly above normal job requirements.

The STATE MERIT AWARD BOARD requires the submission of sustained superior accomplishment nominations on an annual basis prior to March 1. Consequently, nominations approved by the Department after March 1 will be forwarded to the State Merit Award Board immediately prior to the next deadline. Maximum annual nominations are limited to one per 200 employees.

III. Department Level

A. L. A. MORAN - SUPERIOR ACCOMPLISHMENT AWARD

The Lewis A. Moran Superior Accomplishment award gives CDF employees recognition for significant contributions to State service by virtue of exceptional job performance over a sustained period of time. The award, named after Lewis A. "Lew" Moran, State Forester for CDF when it was a "Division" and the first "Department" Director, is presented to that one employee each year who significantly exceeds job standards.

B. FRANCIS H. RAYMOND AWARD

In honor of the many contributions to forestry in California, the State Board of Forestry decided to establish the Francis H. Raymond Award to be given to the individual, group, company, agency, or association selected as making the most significant contribution to the advancement of forestry in California over the immediate five-year period. There are no restrictions on who may be nominated. Examples of those qualified and eligible to be nominated include journalists, conservation organizations, nonprofit groups promoting forest management, service clubs, professionals, educators, volunteers, legislators, corporations and the like.

C. FIRE SAFE, CALIFORNIA! AWARD

An award given to the public sector for an outstanding contribution or effort toward fire safety. Examples of qualifying performances are:

1. Providing hazard reduction measures around a residence which result in the structure being saved from a wildland fire.
2. Providing a green belt around a community or housing area.
3. Providing for fire safety for a subdivision, i.e., cul-de-sac width, hydrants, road width, etc.

IV. Other Awards

A. CALIFORNIA STATE FIREMEN'S ASSOCIATION AWARDS

1. Medal of Valor. The performing of an extraordinary act of heroism under fire-related emergency conditions (Annex K).
2. Award of Merit. The performing of an act under fire-related emergency conditions where unusual effort or bravery is involved (Annex K).

B. AMERICAN RED CROSS - Recognizes an act or acts involving the application of first aid techniques.

C. CALIFORNIA ATTORNEY GENERAL'S AWARDS

1. Peace Officer Certificate of Commendation. Those acts for which a departmental Meritorious Achievement, Outstanding Performance, or Superior Effort Award has been awarded may also qualify for the following California Department of Justice (Attorney General's) Awards.
 - a. Meritorious Achievement - The performing of an act, or acts, under emergency conditions where bravery is involved but which is not above and beyond the normal call of duty.
 - b. Outstanding Performance - That attention to duty which consistently reflects exemplary job performance over and above the standard level expected for the position involved.
 - c. Superior Effort - The performing of an act under emergency conditions not involving bravery, where unusual effort is involved and where such act results directly in the saving of a human life or directly sustains life even though the injury or condition proves nonsurvivable.
2. Peace Officer Retirement Certificate of Commendation. Commendations or letters or recognition may be awarded to individuals retiring or transferring from the law enforcement community. Number of years of service and accomplishments during that period will be considered.

D. TREE CITY USA - NATIONAL ARBOR DAY FOUNDATION

TREE CITY USA has been designed to recognize those communities that are effectively managing their tree resources. Just as important, it is geared to encourage the implementation of a local tree management program based on the TREE CITY USA standards through the professional leadership of participating state foresters of the National Association of State Foresters. Public Law 92-283 of 1972 gives the state foresters authority.

The National Arbor Day Foundation, in cooperation with the U. S. Forest Service, the National Association of State Foresters, the U. S. Conference of Mayors, and the National League of Cities, is prepared to recognize towns and cities all over America who meet the standards of the TREE CITY USA program.

FRANCIS H. RAYMOND AWARD

BACKGROUND: On April 2, 1986, the State Board of Forestry adopted the Francis H. Raymond Award. The award will be given annually to an individual or organization for outstanding contributions during the prior five years to the protection and wise use of forest resources in California. It will recognize outstanding performances in management, research, education, and seeking public awareness of forest resources.

FRANCIS H. RAYMOND: Was born in Florence, Oregon on November 5, 1906; attending high school in Miami, Florida; graduated from Colorado College in 1930 with a degree in Forestry; worked for the Forest Service as a lookout and a road checker; and then for the California Forest Experiment Station in the statewide vegetation type mapping project.

In June of 1931, he was appointed as an Assistant State Forest Ranger in Monterey County for the California Division of Forestry (at \$140 per month), and worked in many positions for CDF including Forest Technician, Ranger, and Deputy State Forester. In 1953, he was appointed Chief Deputy State Forester, and in June of 1955, was permanently appointed as State Forester of California.

During his tenure he served as President of the National Association of State Foresters; helped establish and served as Chairman of the Western Forest Fire Research Council; was the first President of Forestry's 25-Year Club; and was an active member of the California-Nevada-Hawaii Forest Fire Committee of the Western Forestry and Conservation Association.

He retired in August of 1970 after 40 years of service with the CDF. That year he was presented the Silver Smokey Award for outstanding service by the National Fire Prevention Council.

He then agreed to work as a legislative advocate for the introduction and passage of a bill calling for the licensing of professional foresters. Representing the Society of American Foresters and the Association of Consulting Foresters, he was successful in his efforts and was awarded for his efforts by receiving Registered Professional Forester License Number 1; and served for seven years on the Board of Forestry's Professional Forester's Examining Committee.

Concerned over political attacks on the CDF, Raymond took it upon himself to push for departmental status. He was successful in getting a bill to the Governor's desk in 1970, where it was vetoed. He continued to lobby and on January 1, 1977, the Department of Forestry was created. He was instrumental in establishing an Annual Legislative Forestry Forum as SAF Northern California Section Legislative Liaison Officer. In 1976, he was recognized by the Section for his contributions, and in 1979, was elected to the status of Fellow of the Society of American Foresters. In 1980, the U. S. Forest Service, in celebration of its 75th anniversary, recognized Francis for his significant contributions to forestry in the United States. In 1979, Francis had bypass surgery and on January 10, 1984, he succumbed to lung cancer.

THE AWARD: In honor of the many contributions to forestry in California, the State Board of Forestry decided to establish the Francis H. Raymond Award to be given to the individual, group, company, agency, or association selected as making the most significant contribution to the advancement of forestry in California over the immediate five-year period. There are no restrictions on who may be nominated. Examples of those qualified and eligible to be nominated include journalists, conservation organizations, nonprofit groups promoting forest management, service clubs, professionals, educators, volunteers, legislators, corporations, and the like.

Information on nominations can be obtained by writing the Board of Forestry, Raymond Award, P. O. Box 944246, Sacramento, CA 94244-2460.

The Nominations Review Committee, consisting of six members representing (1) Board of Forestry, (2) Forest Industry, (3) Conservation Organization, (4) Public Agency, (5) Small Timberland Owner, and (6) Educational Institution, will review the nominations and forward their recommendations to the Chairman of the Board of Forestry, who will make the final decision in case of a tie.

The award will consist of three parts: (1) an individual plaque for the recipient, (2) a perpetual plaque to be displayed at the Board of Forestry office in Sacramento, and (3) a stipend which will vary in amount depending on the current assets in the endowment fund. If the goal of \$30,000 is reached, the stipend should be approximately \$1,500 each year. The exact nature will be decided in consultation with the recipient. It may consist of a professionally done display for fairs, service clubs, the purchase of trees for a conservation organization project, educational materials for schools or conservation-education centers, development of brochures, assistance in putting on press tours, or a great number of worthwhile projects.

Winners of the 1987 award were Dr. John A. Zivnuska, Professor of Forestry at the University of California at Berkeley, and the Trees Are For People project of the California Women in Timber, administered by Nancy Inmon.

NEEDS: This is a unique opportunity to establish an award honoring Mr. Raymond, by recognizing outstanding contributions to forestry in California. To date, over \$16,800 has been pledged toward the \$30,000 goal. We are asking for your assistance in helping reach this goal as quickly as possible. Please send your checks made out to the Francis H. Raymond Fund, and mail them to the California State Board of Forestry, P. O. Box 944246, Sacramento, CA 94244-2460.

A. MORAN AWARD SCREENING CRITERIA

1. SECTION 2154.5.4(c) OF THE MANUAL OF INSTRUCTIONS LISTS FIVE CRITERIA TO BE CONSIDERED IN EVALUATING THE Nominations. THESE ARE:
 - A. The extent to which the nominee may have exceeded the basic or normal range of job performance standards for the position.
 - B. The period of time over which the nominee sustained his/her level of work accomplishment.
 - C. The relative importance of the superior work accomplishment to the goals, objectives, and mission of CDF.
 - D. The difficulty, complexity, and nature of the superior work performed.
 - E. Relevant special circumstances, such as difficult working conditions, constraints of money or time, newness of the program, etc.
2. For each of the five criteria, use a 1 to 5 point scoring system; with five points for the highest and one for the lowest. In most cases the scores will be in the 3-5 point range. Following the ranking, total the scores for each candidate, and use these to determine the ranking of the nominees (from 1 to "___").
3. We will use the one to "___" rankings to determine the top 3 candidates. In case of a tie, we can revert to the numerical scores to break the tie, or recommend to the Director as we did last year that two awards be given.
4. Please do the ranking prior to the STC meeting. If you are unable to attend, please send your ranking to Jim McFadden prior to the meeting so they can be utilized. There will be no lobbying during the STC meeting. Voting members include the four regions, CDFEA, the Fire Academy Administrator, and Resource Management, Fire Protection, and Management Services from Headquarters, for a total of nine.
5. Funds for the \$50 savings bond given to the winner(s) each year are derived from contributions and interest in the L. A. Moran Fund. Current assets are \$376.08. Checks made out to Forestry Employees Gift Fund and mailed to headquarters will be gratefully accepted.

SANTA ANA CONDITIONS

Toward the end of the dry summer, a pronounced high pressure area in the Great Basin can have a drastic effect on Southern California. This strong high pressure system on one side of the Southern Californian mountain ranges and a corresponding low or trough on the other side result in a dramatic air transfer. Dry air from the interior Great Basin is forced westward toward the coast over the San Gabriel, San Bernardino and coastal mountains. As this air moves through the higher elevation forests and down the steep foothill escarpments, it becomes gusty, hot, and dry due to compressional heating as it funnels down the canyons. These are the "Santa Ana's" or "Devil Winds."

In the coastal mountains and the valleys, slopes, and basins on the ocean side, the Santa Ana varies widely. It is strongly channeled by the major passes. At times, bands of clear air can be seen cutting through a region of limited visibility. Under strong Santa Ana conditions, the wind flows rapidly over the ridges, down along the surface of leeward slopes and valleys, and over the sea.

Strong winds, along with warm temperatures and humidity sometimes lower than five percent, create serious problems. These conditions rapidly dry the vegetation, which is often flash fuel to start with, and set the stage for fires which spread at the speed of the wind. These fires can engulf brush and trees while sending sparks to start spot fires in advance of the main blaze. The strong flow crossing the mountains create turbulence for air attack vehicles. Eddies of various sizes are produced by topographic features, further hampering firefighting efforts.

SIEGE OF 1987

In September, 1987, the worst fire siege (in terms of acres burned) in the history of California hit our state. More than 13,000 dry lightning strikes caused more than 1,200 fires in a five-day period. The storms hit first in Kern County, then progressed north along the Eastern Sierra and all the way past the Oregon border, burning primarily high country timber in the national forests.

When it was over, more than 700,000 acres were blackened and ten firefighters were dead. Thirty-eight homes were destroyed.

Out of this disaster came a program called Operation Phoenix, named for the mythological bird which rose from the ashes. Operation Phoenix is a partnership among public agencies and private individuals and organizations working together for resource recovery in fire-damaged lands in California.

U.S.F.S.

REGIONAL SUPPRESSION CREWS: HOTSHOTS

"Hotshot" crews were originally organized through the efforts of the Civilian Conservation Corps. (CCC) during the years between 1933 and 1940. These crews were usually consisted of 40 firefighters. After the CCC program ended in 1942, hotshot crews were charged with the protection of timber resources from fire at the hands of enemy invaders.

The 1950 Cooperative Forest Management Act provided a major funding effort to support protection efforts commensurate with the value of resources under control of the United States Forest Service. This act in conjunction with the 1958 Forest Service Omnibus Act is the basis for our present fire management level of manpower, equipment, and financing.

During the mid-1960s, the basic policy concerning organized crews was established. Today four categories of crews exist:

1. Inter-regional suppression crew -3
2. Regional suppression crews -20
3. Forest Service regular crews
4. Contract A-D crews (Blue Card)

BACKGROUND

1. INTER-REGIONAL CREWS - The number of crews is fixed by the Federal Government and cannot be altered without policy change. All I-R crews are dispatched by the Inter-Agency Dispatch Center in Boise, Idaho.

Organized in 1965, El Cariso and Del Rosa were the first Region V hotshot crews. Redding hotshots were organized later in 1967. The Redding inter-regional hotshot crew is the only crew made up of Forest Service regulars "detailed" from forests around the region for a period of about six months. Redding hotshot crew members are highly trained, experienced firefighters.

2. REGIONAL SUPPRESSION CREWS - Regional suppression crews have the same qualifications as the I-R crews and are recruited locally from a list of returnee seasonal employees. Their training consists mainly of fire suppression techniques and physical fitness. These crews are designed to be a highly skilled crew of twenty people capable of being mobilized on a moment's notice.
3. FOREST SERVICE REGULAR CREWS - These crews are either made up of two 10-member project (i.e., fuel management) crews or fire suppression personnel selected at random and formed into a crew shortly before being dispatched.

4. CONTRACT CREWS (BLUE CARD) - These crews are non-Forest Service employees who received basic firefighting training and are on call as reserve crews. Ordinarily, contracted crews (commonly called "Blue Card" crews) are dispatched to fires before regular Forest Service crews.

U.S.F.S.

SMOKEJUMPERS

The first jump in California was on the Klamath National Forest in 1944 by smokejumpers from Cave Junction, Oregon. By 1957 a permanent California smokejumper crew was established in Redding. The Region V smokejumper unit started with 20 men. This unit now has 46 jumpers.

Smokejumpers are highly skilled firefighters with at least two seasons of fire control experience. One season must be in forest and range fire suppression in the mountainous terrain of the western United States. Stiff physical requirements must be met.

The smokejumper training program takes five weeks. Three weeks are required for parachute jump training and two weeks for woodmanship, helicopter, first aid, and rescue. Requalifying experienced jumpers each year requires five days of training.

Two Dehavilland Twin Otter Aircraft capable of carrying 10 smokejumpers and their gear transport the jumpers to fires that cannot be reached by tracked and wheeled vehicles. Smokejumpers perform the initial attack on these remote fires.

Smokejumpers average about 350 fire jumps and 400 jumps. They will jump on about 74 fires yearly. The fires may be anywhere in the United States and for other agencies besides the Forest Service.

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