

LAW ENFORCEMENT MUTUAL AID PLAN (SAR) ANNEX



MUTUAL AID GUIDELINES

SEARCH AND RESCUE/URBAN SEARCH & RESCUE

February 5, 2004

California Governor's Office of Emergency Services
Law Enforcement Branch
Search and Rescue Mutual Aid – SAR/US&R Guidelines

ACKNOWLEDGMENT

This document is the product of a cooperative effort of an assembled Search and Rescue SAR/US&R Specialist Working Group and the California's State Sheriff's Search and Rescue Coordinators.

The California Governor's Office of Emergency Services gratefully acknowledges the valuable input and collective expertise from the following members of the SAR/US&R Specialist Working Group:

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Introduction

Pursuant to the California Government Code, Chapter 7 of Division 1 of Title 2, “The Emergency Services Act”, the California Governor’s Office of Emergency Services (CAL OES), Law Enforcement Branch manages and maintains the State of California Search and Rescue Mutual Aid Program. This includes the publication of plans pertaining to Search and Rescue Mutual Aid. This publication, The CAL OES SAR Mutual Aid Plan, serves as an annex to the CAL OES Law Enforcement Mutual Aid Plan.

In order to refine the State’s Search and Rescue Mutual Aid Program, the CAL OES Law Enforcement Branch assembled California’s 58 County Sheriffs’ Search and Rescue Coordinators, as well as California’s State and Federal SAR Cooperators. This group of interested agencies is called the “State Sheriffs’ Search and Rescue Coordinators”. The main objective of this group is to collectively review and address statewide SAR issues to improve the effectiveness and efficiency of the State’s SAR Mutual Aid Program.

One of the main issues identified was the existence of multiple and inconsistent “standards” that affect the SAR discipline, specifically mutual aid SAR responses. The lack of statewide consistency in how SAR resources were evaluated and categorized made it difficult for SAR resources to be used as a mutual aid resource. This issue was addressed in detail by the State Sheriffs’ SAR Coordinators. Their objective was to create mutual aid guidelines that met or exceeded existing applicable “standards” while creating effective and efficient statewide criteria for mutual aid SAR responses. These guidelines are intended to define SAR proficiencies solely for mutual aid resources.

- These guidelines contain information for law enforcement agencies to consider when addressing the broad range of issues related to Search and Rescue Mutual Aid. These guidelines do not constitute a policy, nor are they intended to establish a standard for any agency. CAL OES is sensitive to the needs for agencies to have individualized policies that reflect concern for local issues. CAL OES intends these guidelines to be a resource for law enforcement agencies that will provide maximum discretion and flexibility in the development of individual agency policies.

The creation of California’s SAR Mutual Aid Guidelines encompasses all potential SAR disciplines and is developed as follows:

1. The State Sheriffs’ SAR Coordinators identify the guideline discipline need.
2. The State Sheriffs’ SAR Coordinators elect one of their fellow coordinators to chair the guideline creation process.
3. The State Sheriffs’ SAR Coordinators identify and task a group of subject matter experts into a “Specialist Working Group”.
4. The Specialist Working Group creates the guidelines based upon their knowledge and experience and submits them back to the coordinators for review, recommendation, and/or approval.
5. Once approved by the coordinators, and reviewed by CAL OES Administration and Staff Counsel, the coordinators present the guidelines to the California State Sheriffs’ Association (CSSA) for their review, recommendation and/or approval.
6. Once approved by CSSA, the guidelines become part of the CAL OES California Law Enforcement Mutual Aid Plan – SAR Annex.

Effectiveness and efficiency is achieved as California’s SAR Mutual Aid Guidelines are created by California’s SAR experts, for California’s Sheriff’s SAR Coordinators, and approved by the Sheriffs of California, all for the benefit of those who become the subjects of search and/or rescue in California’s SAR environments.

The following guidelines include “typing” of both the SAR environment as well as the SAR resource. They are designed to match the conditions, environment and possible length of deployment (normal operational periods should be 12 hours) as determined by the mutual aid requestor and the minimum equipment, experience, and skill level the responding agency should consider when sending SAR personnel.

The goal of “typing” is to be able to identify the largest number of SAR resources while minimizing the risk of placing an unsuitable SAR resource in an unsafe situation. The responding agencies’ liaison or leader shall have final approval of any assignments their personnel are asked to perform.

Volunteer SAR personnel should be properly registered as Disaster Service Workers (DSW). DSW registration will ensure that the volunteers are eligible for worker’s compensation coverage if they should be injured and provides additional liability protection for the volunteer and the government agency.

NOTE: The endeavor of Search and Rescue necessitates response into difficult and unpredictable circumstances in widely varied and many times hazardous terrain. These guidelines are intended to assist Search and Rescue Coordinators in identifying appropriate emergency response resources to effect searches and rescues in the most expeditious manner possible while considering known and unknown hazards. These guidelines are not intended to address all eventualities. Rather they are a set of tools derived from collective knowledge to address the task at hand. Search and Rescue is inherently dangerous and participants respond with knowledge of the associated risks.

It is the responsibility of agencies responding to California Search and Rescue Mutual Aid requests to provide qualified personnel and equipment that meet or exceed the recommended level of skills and capabilities stipulated in these guideline documents.

The California SAR Mutual Aid Guidelines are only minimum guidelines and circumstances that are unique to a particular search and rescue mission may dictate that additional or higher skills and qualifications may be necessary for the safety of the searcher and for successful search and rescue operations.

Summary

Many Sheriff’s Department Search and Rescue Teams have a high degree of training and skill in search, rescue, medical, ICS, logistics, communications, and many other SAR related skills. These teams are generally capable of working unsupported for 24 to 36 hours in remote locations under harsh conditions. Most teams are self sufficient in communications on statewide mutual aid frequencies and have much experience working with other agencies utilizing the Incident Command System.

During a catastrophic earthquake, or other US&R incident, Heavy Rescue US&R teams will be committed to significant rescue problems in large collapsed structures. Local fire agencies will also be committed to known rescue incidents, fire suppression, medical triage and treatment. With the resources available, systematic neighborhood searches for addition unknown trapped victims or other significant problems could take days or weeks.

SAR/US&R teams could respond into designated impacted areas and systematically conduct house to house searches, provide basic first aid and carry out light rescue operations.

For rescues beyond their scope of training, these teams would request appropriate resources.

Goal

The goal of this document is to define the role, training standards and response plan for Sheriff Search and Rescue units for US&R response. SAR/US&R resources will complement and integrate with Fire Service US&R units to form a cohesive response. It is important that the US&R concepts and language be adopted to assure coordination and interoperability.

Law US&R Program

The CAL OES Law Enforcement SAR/US&R mutual aid program is voluntary. Participating Sheriff's Search and Rescue Teams self certify at the Basic (Type 4) or Light (Type 3) US&R Level.

Agencies whose members and team have met the criteria established in this document will be listed with CAL OES as a resource capable of conducting Basic or Light Urban Search and Rescue operations. Law Enforcement SAR/US&R teams may be requested through the Law Enforcement Mutual Aid System.

The Mutual Aid guidelines contained within this document are based on ICS-US&R-120-1. Sections applicable to Basic and Light levels have been summarized for ease of use and clarity. ICS-US&R-120-1 is incorporated in its entirety within APPENDIX A.

LEVELS OF SAR/US&R OPERATIONAL CAPABILITY	
SAR/US&R TYPE 3 (LIGHT)	SAR/US&R TYPE 4 (BASIC)
Represents the minimum capability to conduct safe and effective search and rescue operations at structure collapse incidents involving the collapse or failure of Light Frame Construction. This level is also capable of conducting low angle or one person load rope rescue.	Represents the minimum capability to conduct safe and effective search and rescue operations at incidents involving non-structural entrapment. Personnel at this level shall be competent at surface rescue that involves minimal removal of debris and building contents to extricate easily accessible victims from damaged, but non-collapsed structures.
<ul style="list-style-type: none"> ○ Light Frame Construction ○ Low Angle Rope Rescue 	<ul style="list-style-type: none"> ○ Surface Rescue ○ Non-Structural Entrapment in Non-Collapsed Structures

The minimum number of personnel for Type 3 and Type 4 SAR/US&R Company is 3. Companies may be deployed as single resources or companies may be combined into Strike Teams by Type. A Type 3 or Type 4 Strike Team would be comprised of 5 Companies and one Strike Team Leader for a total of 16 personnel. Strike Teams may be formed with companies representing multiple Agencies and Counties.

In order to extend the use of equipment sets for extended shifts, SAR/US&R crews may be deployed. SAR Type 3 or Type 4 Crews may be deployed as single resources of 3 personnel or as Crew Strike Teams of 5 Teams and one Strike Team Leader for a total of 16 personnel.

LEVELS OF SAR/US&R OPERATIONAL CAPABILITY

MINIMUM TRAINING

(FEMA CERT Training Program or equivalent meets the requirements of Level 4)

SAR/US&R Type 4 (Basic) Operational Level

Personnel shall be trained in hazard recognition, equipment use and techniques required to operate safely and effectively at incidents involving non-structural entrapment. Personnel at this level shall be competent at surface rescue that involves minimal removal of debris and building contents to extricate easily accessible victims from damaged, but non-collapsed structures. Training at the basic level should at a minimum include the following:

- A. Size-up of existing and potential conditions and the identification of the resources necessary to conduct safe and effective urban search and rescue operations.
- B. Process for implementing the Incident Command System (ICS).
- C. Procedures for the acquisition, coordination and utilization of resources.
- D. Procedures for implementing site control and scene management.
- E. Identification, utilization and proper care of personal protective equipment required for operations at structural collapse or failure incidents.
- F. Identification of five general construction categories, characteristics and expected behavior of each category in a collapse or failure situation.
- G. Identification of four types of collapse patterns and potential victim locations.
- H. Recognition of the potential for secondary collapse.
- I. Recognition of the general hazards associated with a structure collapse or failure situation and the actions necessary for the safe mitigation of those hazards.
- J. Procedures for implementing the structure/hazard marking system.
- K. Procedures for conducting searches at non-collapsed structures using appropriate methods for the type of building configuration.
- L. Procedures for implementing the search marking system.
- M. Recognition and response to the emergency signaling system.
- N. Procedures for the extrication of easily accessible victims from non-structural entrapments involving minimal removal of debris and /or building contents.
- O. Procedures for providing disaster first aid medical care to victims.
- P. Members shall be trained to the Hazardous Materials First Responder Awareness Level.

LEVELS OF SAR/US&R OPERATIONAL CAPABILITY

MINIMUM TRAINING

(Rescue Systems 1 Training Program or equivalent meets the requirements of Level 3)

SAR/US&R Type 3 (Light) Operational Level

Personnel shall meet all US&R Type-4 (Basic) level skill requirements. In addition, personnel shall be skilled in hazard recognition, equipment use and techniques required to operate safely and effectively at structural collapse incidents involving the collapse or failure of Light Frame Construction and low angle or one person load rope rescue as specified below:

- A. Personnel shall be trained to recognize, evaluate and communicate the unique hazards associated with the collapse or failure of Light Frame Construction. Training should include but not be limited to the following:
 - 1. Site safety; hazard assessment and personal protective equipment required for site.
 - 2. Recognition of the building materials and structural components associated with Light Frame Construction.
 - 3. Recognition of unstable collapse and failure zones of Light Frame Construction.
 - 4. Recognition of collapse patterns and probable victim locations associated with Light Frame Construction.
 - 5. Procedures for implementing the emergency signaling system. (Appendix-J)

- B. Personnel shall have an awareness of the resources and the ability to perform search operations intended to locate victims who are not readily visible and who are trapped inside and beneath debris of Light Frame Construction. Training should include but not be limited to the following:
 - 1. Conducting non-technical searches.
 - 2. Procedures for implementing the victim marking system. (Appendix-I)
 - 3. Capabilities and procedures for requesting US&R canine search team and technical search equipment such as video and optical visual search devices and seismic or acoustic electronic listening devices.

- C. Personnel shall be trained in the procedures for performing access operations intended to reach victims trapped inside and beneath debris associated with Light Frame Construction. Training should include but not be limited to the following:
 - 1. Lifting techniques to safely and efficiently lift structural components of walls, floors or roofs.

2. Develop and communicate a shoring plan. Safely and efficiently construct temporary structures needed to stabilize and support structural components to prevent movement of walls, floors or roofs.
 3. Breaching techniques to safely and efficiently create openings in structural components of walls, floors or roofs.
 4. Operating appropriate tools and equipment to safely and efficiently accomplish the above tasks.
- D. Personnel shall be trained in the procedures for performing extrication operations involving packaging, treatment and removal of victims trapped inside and beneath debris associated with Light Frame Construction. Training should include but not be limited to the following:
1. Packaging victims within confined areas.
 2. Removing victims from elevated or below grade areas.
 3. Providing medical treatment to victims at a minimum to the Basic Life Support (BLS) level.
 4. Operating appropriate tools and equipment to safely and efficiently accomplish the above tasks.
- E. Personnel shall be trained in the procedures for performing low angle or one person load rope rescue involving accessing, packaging, treating, and removing victims. Training should include but not be limited to the following:
1. Rope system anchors
 2. Evacuation litters
 3. Rescuer and patient packaging
 4. Lowering and raising systems
 5. Mechanical advantage systems

EQUIPMENT REQUIREMENTS

When responding as a typed mutual aid resource, Sheriff's SAR/US&R companies must be equipped with the minimum equipment identified within Table 1 of this document. Table 1 specifies equipment Kits. Kits are groupings of equipment that work together to accomplish a common task. Listing of the contents of the specified kits is contained in Table 2. The minimum equipment lists describe the needs for each SAR/US&R company comprised of 3 personnel.

Responding SAR/US&R companies must be equipped with appropriate transportation vehicles such as equipment carrying trucks or truck / trailers combinations as well as transportation for crew personnel.

It is strongly recommended that responding companies and crews be self sufficient, including food and water, and shelter for 72 hours period.

TABLE 1

US&R Basic and Light Levels

MINIMUM EQUIPMENT LISTS

These lists identify the minimum amount of tools and equipment needed to provide a safe and acceptable level of service for Level 3 and level 4 US&R operational capability. The amount, size and type of equipment listed can be increased to provide a higher degree of safety and service in each level of US&R operational capability. See Table 2 for the contents of each equipment kit.

DESCRIPTION	TYPE 3	TYPE 4	UNIT
Personal Protective Equipment			
Personal Protective Equipment (<i>see tool info sheet</i>)	3	3	Ea
Communication			
Portable Radio Kit (<i>see tool info sheet</i>)	1	0	Ea
Hand Tools			
Tool Kit (<i>see tool info sheet</i>)	1	0	Ea
Shovel, Long Handle (square point)	1	0	Ea
Shovel Long Handle (round point)	1	0	Ea
Sledge Hammer (8-10 lb)	2	2	Ea
Sledge Hammer, (2-4 lb, short handle)	4	2	Ea
Chisel, Cold (1"x 7 7/8")	2	2	Ea
Pry Bar, Pinch Point (60')	4	4	Ea
Wrecking Bar, Claw (3')	2	2	Ea
Hacksaw (heavy duty)	2	2	Ea
Hacksaw Blades (carbide)	12	12	Ea
Hand Saw, Crosscut (26")	2	2	Ea
Description	TYPE3	TYPE4	UNIT
Bolt Cutter (30")	1	1	Ea
Scoop Shovel "D" Handle	1	1	Ea
Axe (flat head)	1	1	Ea
Axe (pick head)	1	1	Ea
Utility Knife	1	1	Ea
Stabilization & Shoring			
Cribbing & Wedge Kit (<i>see tool info sheet</i>)	2	1	Ea
Framing Hammer (24oz)	3	0	Ea
Tape Measure (25')	3	0	Ea
Tri or Speed Square	3	0	Ea
Framing Square (24")	1	0	Ea
Carpenter Belts	3	0	Ea
Nail Kit (<i>see tool info sheet</i>)	1	0	Ea
Level, 6 inch minimum	3	0	Ea
Search & Marking			
Building Marking Kit (<i>see tool info sheet</i>)	1	1	Ea
Chemical Light Kit (<i>see tool info sheet</i>)	2	1	Ea
Barrier Tape	2	1	Roll
Cutting			
Chain Saw Kit, Gasoline (<i>see tool info sheet</i>)	1	0	Ea

Lifting			
Hydraulic Jacks (5 ton minimum)	2	0	Ea
Rope			
Rope, Static Kernmantle (150'x 1/2", NFPA approved)	2	0	Ea
Figure 8 with ears or brake bar rack, NFPA approved	2	0	Ea
Carabiners (General use, NFPA approved)	15	0	Ea
Multi-point Collection Device	2	0	Ea
Load Releasing Device (<i>see tool info sheet</i>)	2	0	Ea
Prusik Loops (Rope Specific, 8mm minimum)	6	0	Pr
Mechanical Ascender, (General use, NFPA approved) (OPTIONAL)	2	0	Ea
Pulley, Rescue (2" or 4", one to be prusik minding)	3	0	Ea
Litter & Complete Pre-rig (<i>see tool info sheet</i>)	1	0	Ea
Webbing Kit (<i>see tool info sheet</i>)	1	0	Ea
Edge Protection (<i>see tool info sheet</i>)	2	0	Ea
Harness, Commercial (Class-II minimum)	2	0	Ea
Pickets, Steel (1"x 4')	6	0	Ea
Medical			
First Aid Kit (<i>see tool info sheet</i>)	1	1	Ea
Blanket (disposable)	2	2	Ea
Trauma Kit (<i>see tool info sheet</i>)	1	0	Ea
Backboard (with immobilization device)	1	0	Ea
Miscellaneous			
Emergency Signaling Device (air horn or whistle)	1	0	Ea
Haul Bags or Buckets	2	0	Ea

TABLE 2

US&R TOOL INFO SHEET (TIS)		
Type 3 and Type 4 Equipment Items Only		
QTY	UNIT	DESCRIPTION

Building Marking Kit

6	Ea	Spray Paint (orange)
4	Ea	Lumber Chalk (stick)
2	Ea	Lumber Crayon (red)
2	Ea	Lumber Crayon (yellow)
4	Ea	Lumber Pencil
4	Roll	Flagging Tape (1", orange or red)

Chain Saw Kit

1	Ea	Chain Saw, 12" minimum (gasoline or electric)
2	Ea	Chains (spare)
1	Ea	Bar (spare)
1	Ea	Bar Oil (gal)
Gasoline		
1	Ea	Gasoline Safety Can (2 1/2 gal, with pre-mix)
1	Ea	Maintenance Kit (spark plug, air filter and wrench)

Electric		
1	Ea	Extension Cord (100')
1	Ea	Wrench

Chemical Light Kit (Sticks)

4	Ea	Red (8 hr minimum)
4	Ea	Yellow (8 hr minimum)
4	Ea	Blue (8 hr minimum)
4	Ea	Green (8 hr minimum)

Cribbing and Wedge Kit

8	Ea	Cribbing (4"x 4"x 18")
8	Ea	Cribbing (2"x 4"x 18")
8	Ea	Wedges (4"x 4"x 18")
8	Ea	Wedges (2"x 4"x 12")
1	Ea	Container (to store and carry lumber)

Edge Protection

2	Ea	Edge Protection (commercial rollers, canvas tarps, split fire hose or any combination of each)
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First Aid Kit

1	Ea	Basic first aid supplies for minor injuries to six victims or crewmembers. Kit must include: Band aids, eye wash, 4"x 4" gauze pads, gauze dressings, triangular and elastic bandages, etc.
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Litter & Pre-Rig

1	Ea	Litter Basket (rated for horizontal and vertical lift)
1	Ea	Pre-Rig (commercial or pre assembled with General use NFPA approved carabiners)

Load Releasing Device

1	Ea	Commercial or field assembled device used to anchor and release tension from rope rescue systems, with General use NFPA approved carabiners.
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Nail Kit (Framing)

25	Lbs.	Nails, 16d (vinyl coated, green sinkers)
25	Lbs.	Nails, 8d (vinyl coated, green sinkers)

Personal Protective Equipment

1	Ea	Helmet
1	Ea	Helmet Light (intrinsically safe)
1	Ea	Eye Protection
1	Ea	Hearing Protection
1	Ea	Respiratory Protection (per agency specifications, N95 minimum)
1	Ea	Shirt & Pants (long sleeve)
1	Pr	Elbow Pads
1	Pr	Knee Pads

1	Ea	Gloves (leather)
1	Ea	Safety Boots (safety toe) (Type 4 sturdy hiking boots w/ankle support)

Portable Radio Kit

1	Ea	Hand Held Radio (per agencies specifications)
2	Ea	Batteries (clam shell or rechargeable)
1	Ea	Battery Charger (if applicable)

Tool Kit

1	Ea	Adjustable Wrench (12")
1	Ea	Adjustable Wrench (8")
1	Ea	Slip Joint Pliers
1	Ea	Locking Pliers (adjustable)
1	Ea	Diagonal Wire Cutters
1	Ea	Standard Socket Set (1/2", ratchet and 6" extension)
1	Ea	Metric Socket Set (1/2", ratchet and 6" extension)
1	Ea	Breaker Bar (1/2")
1	Ea	Ball Peen Hammer
1	Ea	Standard Head Screwdriver Set
1	Ea	Phillips Head Screwdriver Set
2	Roll	Duct Tape
1	Ea	Utility Knife
1	Ea	Tin Snips
		Any other tools required for maintenance and repair of equipment.

Trauma Kit

1	Ea	Basic supplies to treat trauma injuries to six victims or crewmembers. Advanced Life Support equipment is not listed but may be carried if authorized. Medical equipment to be carried will depend on the responding agencies protocols. Examples: Large trauma dressings, splints, airways, BVM with large and small masks.
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Webbing Kit

6	Ea	Webbing (1"x 5', green)
6	Ea	Webbing (1"x 12', yellow)
6	Ea	Webbing (1"x 15', blue)
6	Ea	Webbing (1"x 20', orange)
		Note: All webbing must be mil spec. Nylon, 4000 lb. minimum tensile strength. Each length must be the color indicated.

APPENDIX A

Full Text of

ICS-US&R-120-1

INCIDENT COMMAND SYSTEM

URBAN SEARCH & RESCUE
OPERATIONAL SYSTEM
DESCRIPTION

Draft-September, 2003