Search & Rescue Team

HERO'S Mission

Do the most good for the most people (in each Response Time Window).

Response Time Windows

(Average Maximum Window length.)

4 Minutes - Death from:

Burning. (Tissue damage & Asphyxiation by smoke, toxic fumes.)

Buried. (Suffocation from debris, chest compression.)

Bleeding. (Arterial Exsanguination.)

Not Breathing. (Tongue blocks airway when unconscious.)

- Death from imminent subsequent collapse.
- Fire. (A home can go from spark to fully-involved in under 10 minutes.)

4 Hours - Death from Slow Bleeding, Shock (Internal damage).

24 Hours - Death from Exposure (trapped victims).

4 Days - Death from Dehydration (trapped victims).

4 Weeks - Death from Starvation (mobility-impaired w/o help).

Phases of Rescue Work

Phases of Rescue Work

Phase 1 - Individual Response.

Save those Burning, Buried, Bleeding, not Breathing immediately around you, and drag non-mobile from collapsing buildings by yourself with no equipment, wherever you are when disaster strikes.

Phases of Rescue Work

Phase 1 - Individual Response:

Save those Burning, Buried, Bleeding, not Breathing immediately around you, and drag non-mobile from collapsing buildings by yourself with no equipment, wherever you are when disaster strikes.

Phase 2 - Team Response:

Find & address one or more incidents in the area.

Search & Rescue victims from damage buildings.

Find & Treat injuries.

Provide basic Life Support.

Transport when hospitals open.

(Teams and Equipment required.)

Action Plans

Phase 1. Individual Response:

- A. At your Home/Business
- B. At a Mass Casualty Incident (MCI)

Phase 2. Team Response to:

- A. All incidents in a Neighborhood/Workplace by a pre-organized team.
- B. Single incident by an ad hoc Convergent Team.

Focus during Response Time Windows

Phase 1- Individual Response

First Death from Burning, Buried, Bleeding, Not Breathing.	A. Your Family or Coworkers, or B. Public at a Mass Casualty Incident.
10 Min. Fire Suppression, Evacuation.	D. I dono at a made daddarty moraem.

Phase	2 - Team Response A. Neighborhood, or B. Single Incident.	Damage Survey Team (A. only)	Search & Rescue Team (A, & B.)	Medical & Transport Teams
4 Hours	Death from Slow Bleeding, Shock.	Major Damage Survey (Incidents) →	Find and extract non-mobile victims from Moderately Damaged buildings.	Triage.
24 Hours	Death of Trapped from injuries and exposure.	Light Damage Investigation (Incidents)	(Casualties) Move casualties to safe location, Lightly Damaged buildings.	Evaluate. Treat. Transport. Triage.
4 Days	Death of Trapped from Dehydration.		(Casualties)	Evaluate.Treat.Transport.

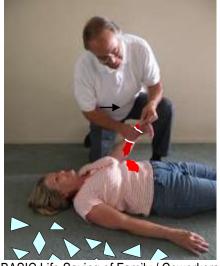
1st 10-Minutes (includes 4-Minute Life Saving Window)

(At Your Home or Business)

CERT Field GuideBook Section 1. Initial Individual Response



1. Drop, Cover and Hold On.



BASIC Life Saving of Family / Coworkers Burning, Buried, Bleeding, or Not Breathing.



Size-Up your home or small business. Evacuate if Moderately or Heavily Damaged.



Shut-off Gas if leaking, Electricity if damaged, Water if leaking and to prevent contamination.

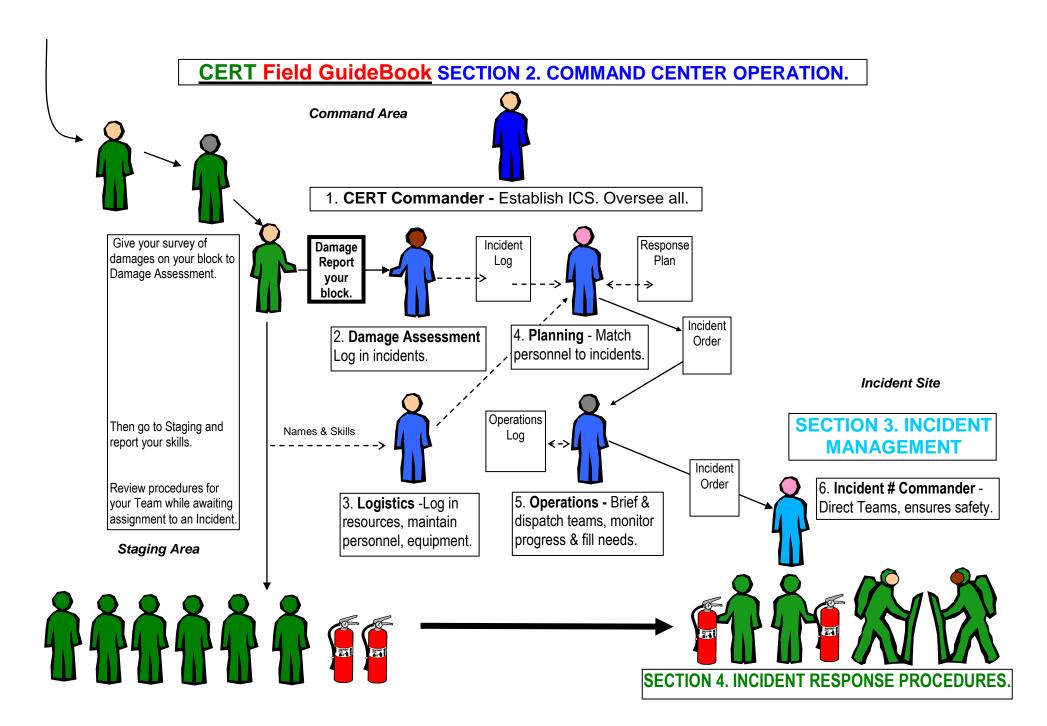


Triage, Injury Evaluation and Treatment.



2. Survey damages on your block on your way to Community/Workplace Command Post.

Central Command Post Operations



MV Hill's Command Center





Priorities:

- 1. Rescuer Safety.
- 2. Prevent further injury and loss of life.
- 3. Help those already injured.
- 4. Minimize additional property loss.

<u>Jobs</u>

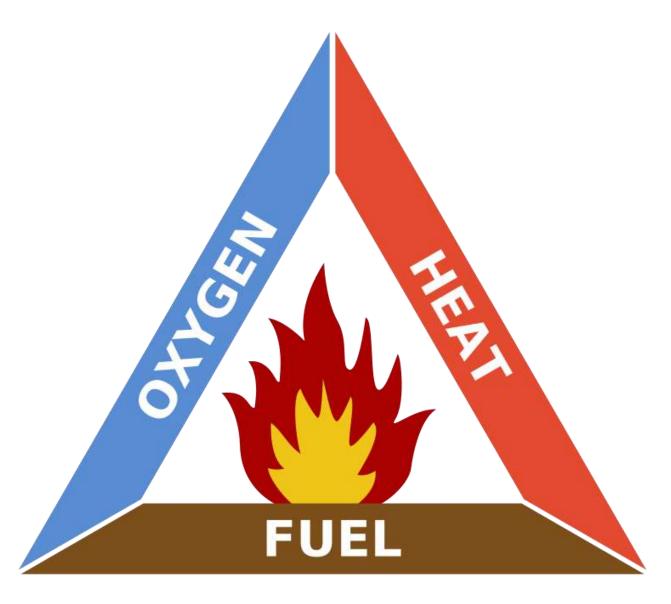
- 1. Cordon-off:
 - Downed Power Line &
 - Unsafe Roads.
 - Hazardous Material leaks & spills.
- 2. Suppress small fires. Contain large fires.
- 3. Shut-off Utility at damaged buildings.
- 4. Search for and Rescue casualties from Moderately damaged buildings.
- 5. Help Medical Team move casualties in or transport casualties from Lightly damaged buildings.

Requires strong, physically fit, clear-thinking people.

Fire

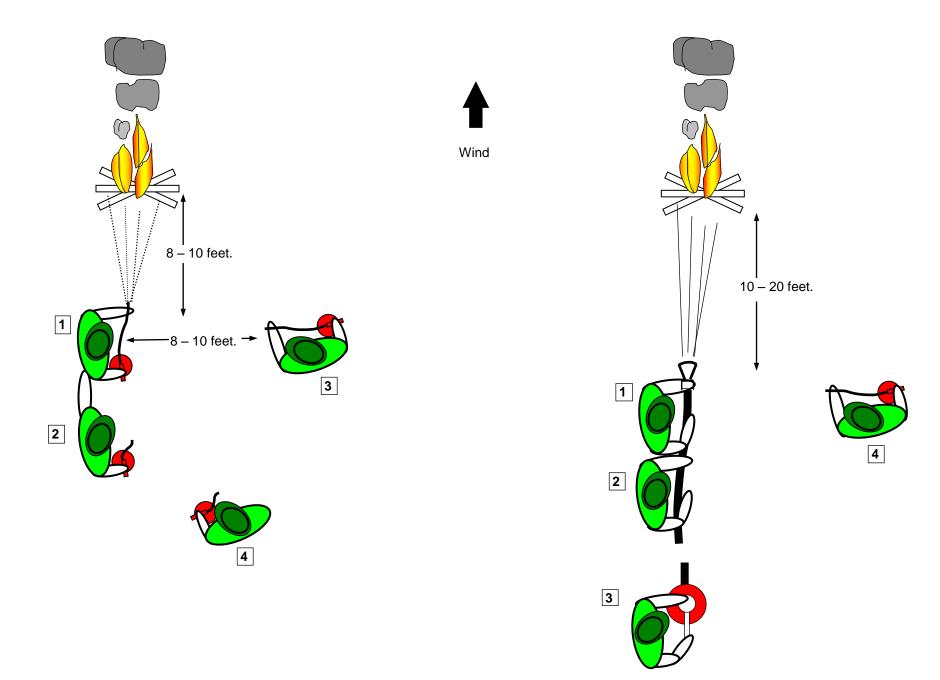
Suppression

3 Things Required for Fire



Remove any one to stop the fire.

Team approach to Fire Suppression.



Fire Facts

Fire grows very quickly.

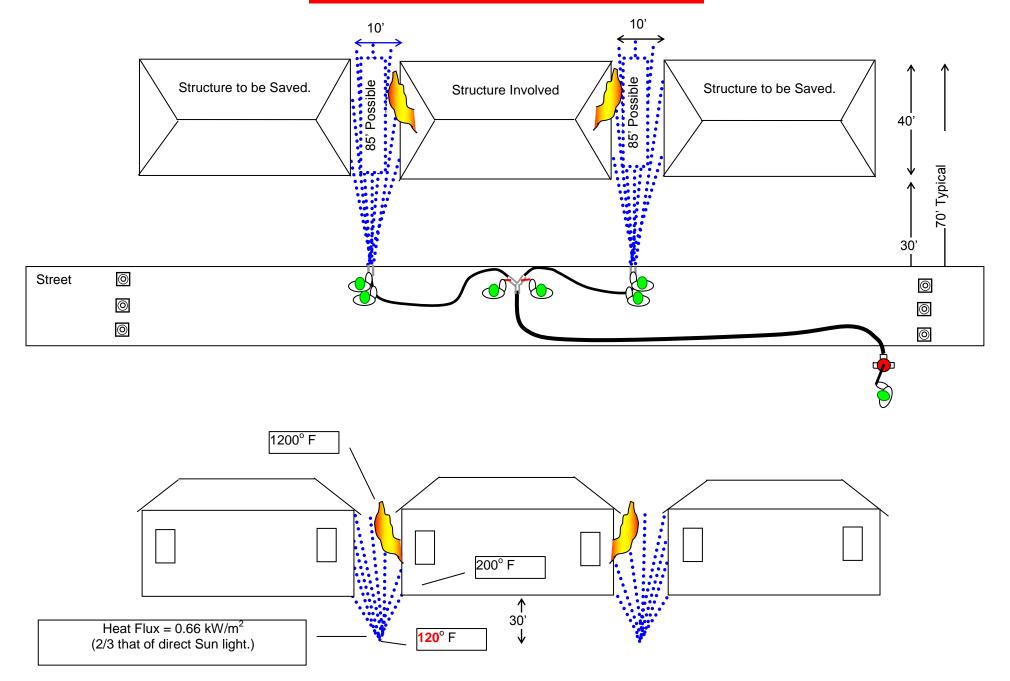
(See Christmas Tree Fire movie.)

Fire Suppression Team may not get to scene in time to stop it.

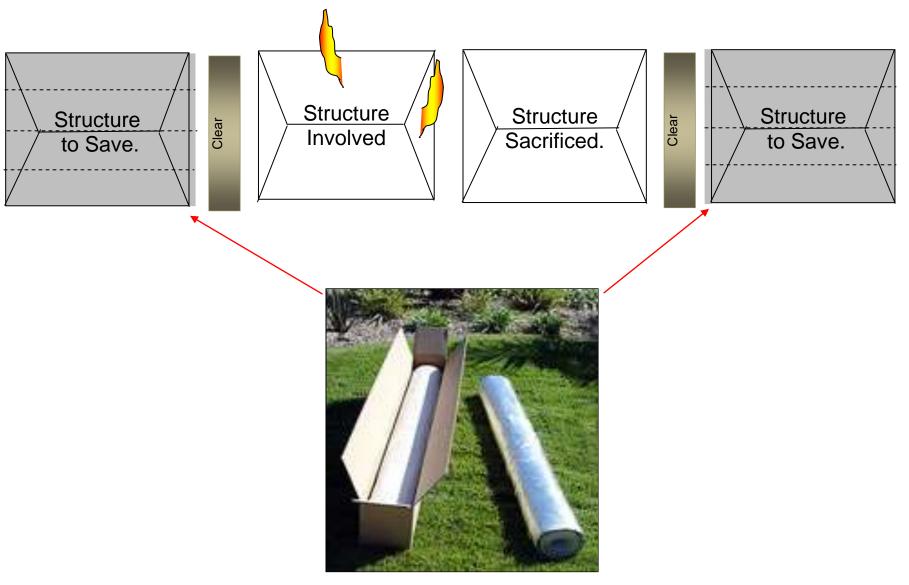
Best defense is for every residence to have two 3A:40B:C or larger extinguishers.

If suppression not possible, containment may be.

Fire Containment

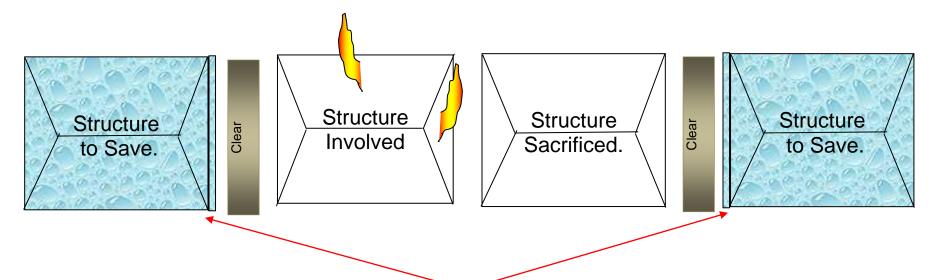


Fire Containment with Breaks & Shields



Firezat heat shield fabric, 12' x 60' roll. 4 rolls x \$750/roll = \$3000 (plus sand bags).

Fire Containment with Breaks & Foam





Or



BURNER CAFS 30-C

30 Gallon <u>trailer-able</u> Compressed Air Foam System.

Foam produced: 300 Gal.

Refills to cover two 3000 SF areas:

Discharge distance: 75 Feet.

\$8500

FOAMSAFE Bakpak™

5 Gallon backback Compressed Air Foam System.

Foam produced: 50 Gal.

Refills to cover two 3000 SF areas:

Discharge distance: 40 Feet.

\$

Hazardous Material Fires

Don't fight a Hazardous Materials Fire.

$$\frac{2}{3}$$
 = STOP

If your CERT performed Community/Workplace Preparation Task ii. *Identify and Map Hazards* (GuideBook, page 19),

- 1. Evacuate the Isolation Area. (GuideBook, page 76).
- 2. Warm those in downwind Protect Area to Shelter-in-Place.

Otherwise, leave the area.

Best Practices.

Prevent fires from starting.

Install automatic gas shutoff valve.

If your home is damaged, shut off Electricity then Gas. (Shut off water is leaking.)

Stop small fires before they become large fires.

A home fire can go from spark to fully-involved in under 10 minutes.

Everyone should have at least two 3-A:40-B:C extinguishers at home.

Place outside front door for CERT used if not needed.

If you can't stand the heat at 10 feet, the fire is too large to fight with extinguishers. Leave.

Utility Management

Utility Shut-off

Shut-off Utilities, in alphabetic order, under the following conditions:

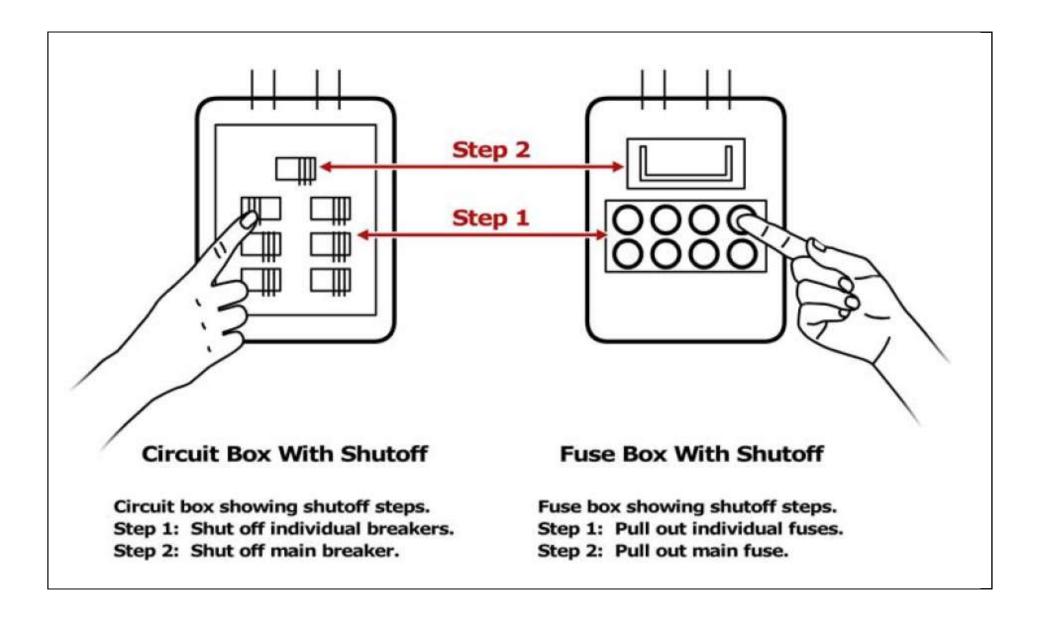
Damage:	Light ¹			Moderate ² or Heavy ³
Condition:	Fire	Gas Leak (smelled or meter spinning)	Water Leak (seen, heard or felt.)	•
Shut-off:	1. Electric. 2. Gas,	1.Electric. 2.Gas. 3. Vent Building.	1.Electric. 2.Water.	1. Electric. 2. Gas. 3. Water.

¹ **Light –** Broken Windows. Damage mostly cosmetic and to contents. Treat inward-falling chimney as Moderate. Building habitable.

² Moderate – Broken exterior walls &/ tilting but not raked. Major damage to interior contents which may shift. Building Not habitable.

³ **Heavy** – Raked, partial/total collapse of wall(s), floor(s) or roof, masonry bldg off foundation, or pre-1933 brick. Building Not habitable.

Electricity Shut-off



Gas Leaks

Gas leaks: - Probable at Heavily Damaged building.

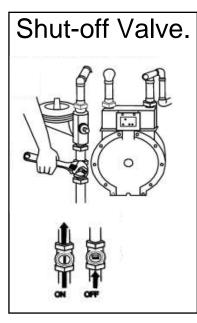
- Likely at Moderately Damaged building.
- Possible at Lightly Damaged Building.

Explosions unlikely at Heavy & Moderates because gas is venting.

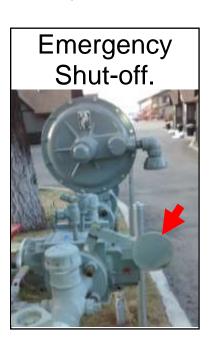
Leaks at intact buildings are more dangerous to both residents and rescuers.

Shut off if safe to reach (outside Collapse-Danger Zone).









Gas Leak Shut-off Steps

- 1. If at night, do not raise residents until electric & gas shut off.
- 2. Shut off electric, then gas.
- 3. Attempt to raise residents or get key from neighbors.
- 4. If building believed occupied and no response, vent building.

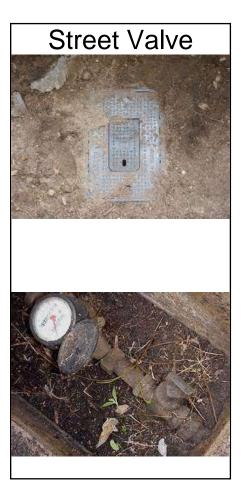
Water Shut-off

Do Not enter a flooded building.
Can't see sharps on or holes in floor.
Everything wet could be energized.

Shut-off 1) Electric, then 2) Water.









Search

&

Rescue

S & R varies based on Building Damage

Levels of Building Damage:

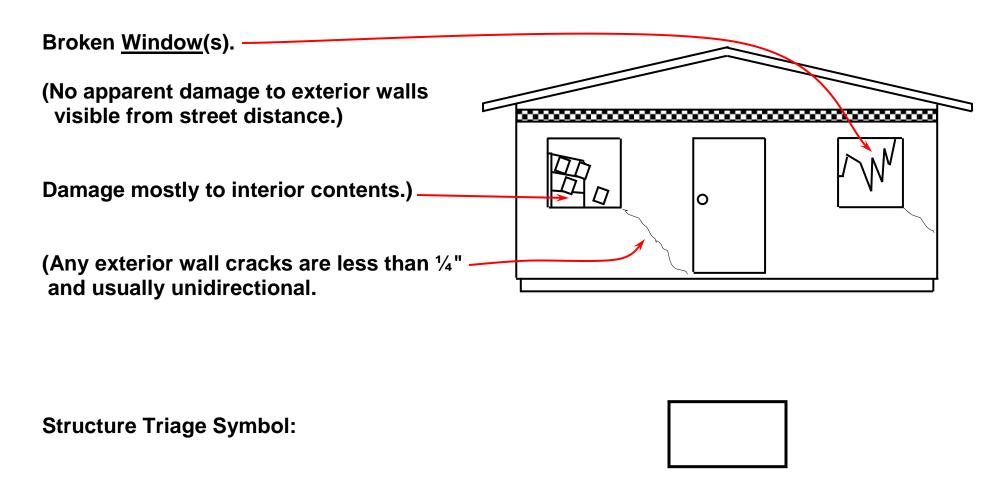
- Lightly Damaged
- Moderately Damaged
- Heavily Damaged

Determined by "Structure Triage" Classify level of building damage.

Structure Triage, done by:

- Damage Survey Team during Area Damage Survey
- S&R Team at each incident to which you are assigned.

Lightly Damaged Building



Lightly Damaged Building

Broken Windows.



Lightly Damaged Building

Damage mostly to interior contents.





Lightly with Special Conditions

Special Condition - Many Broken Windows.



Light Damage with Special Conditions

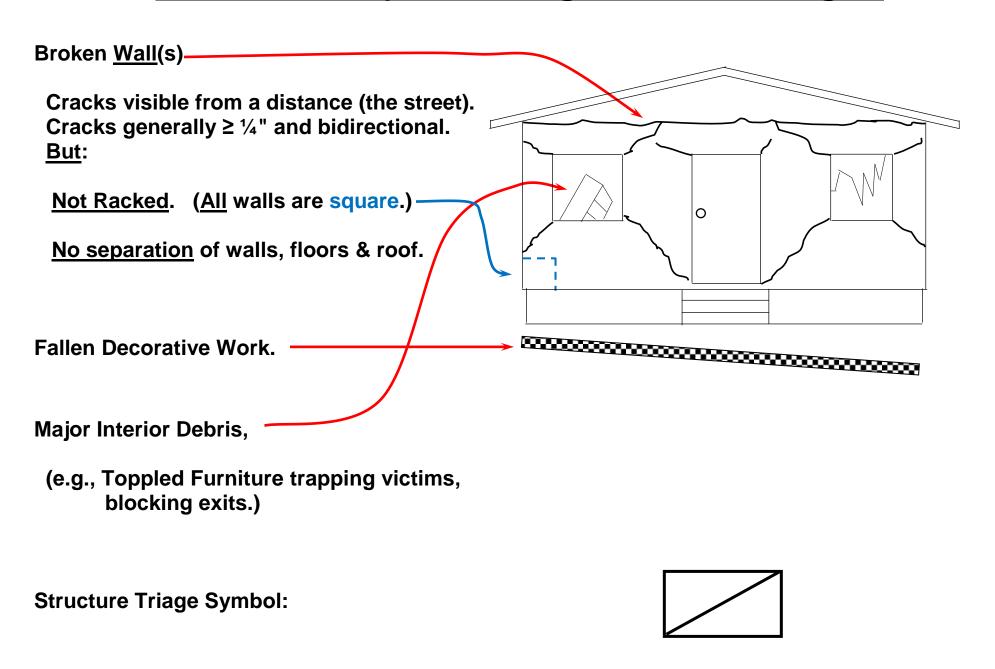


(Can you see the Special Condition?)

Lightly with Special Conditions



Special Condition = Chimney Fell into house.

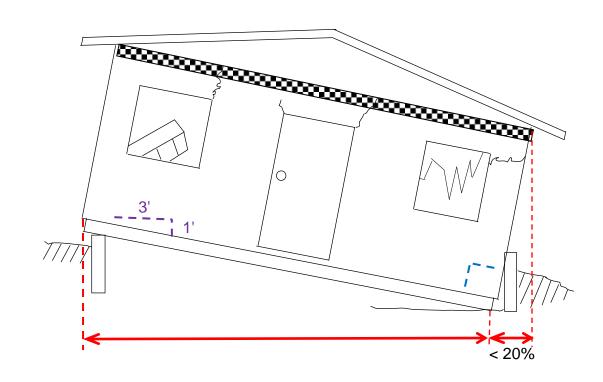


Detached from:

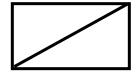
- Raised Foundation, but:
 - Tilt is < 20° [< 1' drop in 3'}
 - Out of Column < 20%.
- Slab Foundation.

(Probably not tilting.)

But all Walls still square.



Structure Triage Symbol:

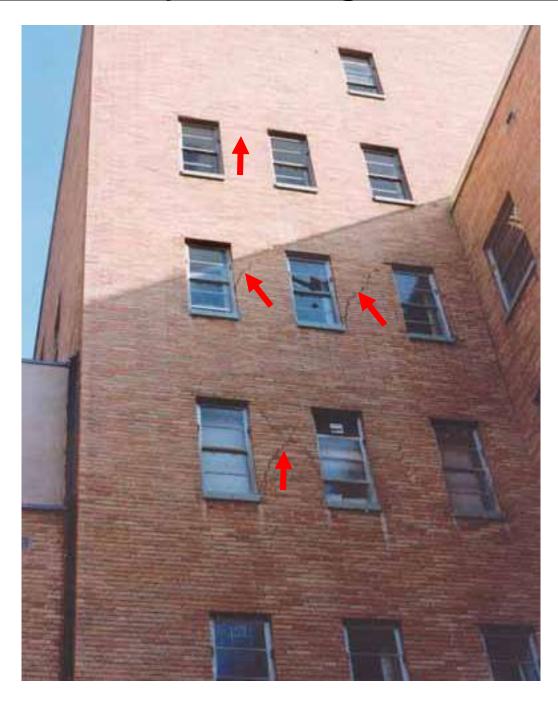


Broken Walls.









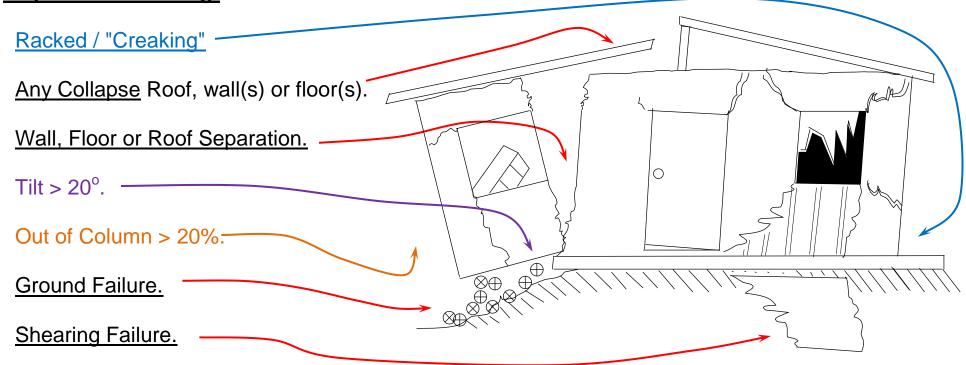
Moderate (w/ this room classified Heavy).



S&R Objectives in Moderately Damaged Buildings

- 1. Evacuate the Mobile Minor and non injured.
- 2. Find, stabilize, extract each remaining living victim as found.
- 3. Find and free the Trapped and Buried.

Any of the Following:



Non-Structural Hazards:

Heavy Smoke or Fire.

Leaking Gas.

Hazardous Materials.

Rising or moving water

Structure Triage Symbol:







(Soft First Story building (open parking in place of a shear wall). First story collapsed.)



(Searchable Debris Field)



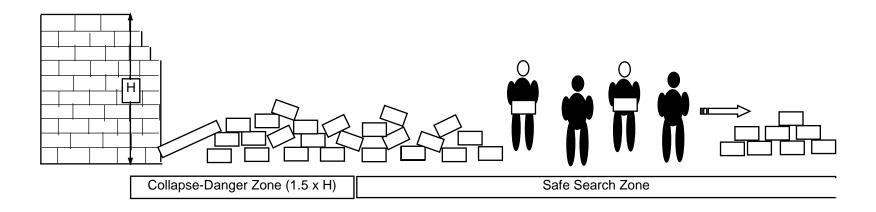
(Searchable Debris Field)

S&R Objectives for Heavily Damaged Buildings.

Cordon off. Warm others.

If safe, Search debris field outside of Collapse-Danger Zone.

(Collapse-Danger Zone = 1.5 times Height of the portion left standing.)



S&R Objectives by Type Building Damage

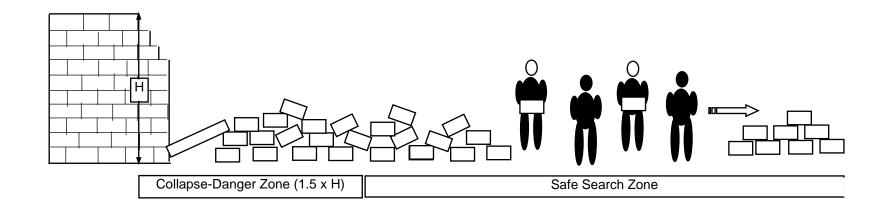
Light: Find, Stabilize, RPMs-Triage (prioritize) & Treat inside.

Moderate: Find, Stabilize, & Extract. (RPMs-Triage & Treat outside.)

Heavy: Cordon off. Warm others.

If safe, Search debris field outside of Collapse-Danger Zone.

(Collapse-Danger Zone = 1.5 times Height of the portion left standing.)



Search & Rescue Overview

S&R Teams work under an *Incident Commander*.

- Serves as Safety Officer.
- Follows a safety checklist for each type incident. (Checklists are in the CERT Field GuideBook, Section 2.)

S&R Teams dispatched when:

- b) Damage Survey Team has determined that a damaged building was probably occupied when disaster struck but residents are not responding.
- a) Property owner has pre-authorized HERO to check on them following a disaster by pre-signing a <u>Search Request and Hold Harmless Agreement</u> (HHA).

Building Marker

(Post on Light & Moderately damaged buildings or outside collapse zones where it can be seen from the street.)

	Structure	e Damage	
If Lightly Dan	naged - No slashes. Moderately Dan	naged - One slash. Heavily Damaged -	Both slashes.

	Se	arch & Rescue Ma	arker_		
Team 1		Time: al occupants:		e OK of away:	>
Team 2	1//0	spected now: _ HHA Signed? _		zards: Yes 1	
Team 3	Community Emergency Response Team	Left In	Hazmat: Power line: Electricity: Nat.Gas:	Yes Mes I	No No Off
Team 4	garen ga	OK: ured: pped:	Water:	On C	Off
	The state of the s	Dead:		_	>

Search & Rescue Procedure

1. Size-Up.

2. Search.

3. Rescue.

Structural Stability?

nterior Scan.

haZards.

Entry Points.

_

Utilities.

Post Building-S&R Marker.

(Survey Residents/Neighbors.)

Suit-Up

Structural Stability?

Interior Scan.

haZards.

Entry Points.

-

Utilities.

Post Building-S&R Marker.

If no Building Marker (Damage Survey Team has not investigated this building),

Survey Residents for their needs.
Knock and Yell,
"This is your Emergency Response
Team. Are you OK."
If you can walk come to ____.
If you can't walk, make noise."

If answered, Ask if help is needed.

If not answered, Survey Neighbors each side &/ across street to determine:

- 1. Was building occupied.
- 2. Is a key available.

Suit-Up.

Structural Stability?

Interior Scan.

haZards.

Entry Points.

Utilities.

Post Building-S&R Marker.

```
Long-sleeve shirt and pants.
```

Helmet.

Helmet lamp.

Goggles.

N95 Particulate Mask. (2)

Leather Gloves.

Nitrile Gloves. (3 pair)

Knee pads.

Boots.

Vest.

Notepad and pen.

Building Markers. (1 yellow & 1 red.)

People Marker.

Door Stops. (2)

Glow Sticks. (4)

Penlight.

Extra helmet lamp batteries.

GuideBook/S&R Procedures/Pocket Ref.

S.W.A.T. Tourniquet or pressure bandage.

Tape (1")

Whistle.

Suit-Up.

Structural Stability?

Interior Scan.

haZards.

Entry Points.

_

Utilities.

Post Building-S&R Marker.

Lightly Damaged.

GO

Broken Windows.

Moderately Damaged. GO

- Broken Walls.
- Tilting but not raked.
- Fallen decorative work.

Heavily Damaged. STOP!

- Racked. (Walls not square.)
- Total or partial collapse.
- Unstable ground or surface.
- Obvious structural instability.
- Heavy gas, smoke or fire.
- Flooded.
- Unreinforced Masonry (UMB).

Suit-Up.

Structural Stability?

Interior Scan.

haZards.

Entry Points.

-

Post Bu v

"Good Samaritan" law is our Liability protection insurance.

Applies only at,

"the scene of an emergency."

Must see or hear a victim before forced entry is covered.

Locating victims before entry also important at Moderately Damaged buildings to reduce time required inside for search.

(A ladder or a pole-mounted cell-phone camera in "video" mode may be helpful.)

Draw a "Bubble Map".

Suit-Up.

Structural Stability?

Interior Scan.

haZards.

Entry Points.

Utilities.

Post Building-S&R Marker.

Pet(s)?

Power line(s)?

Lose Overheads.

Heavy Gas, Smoke, Fire, Toxic Fumes?

Hazardous Materials?

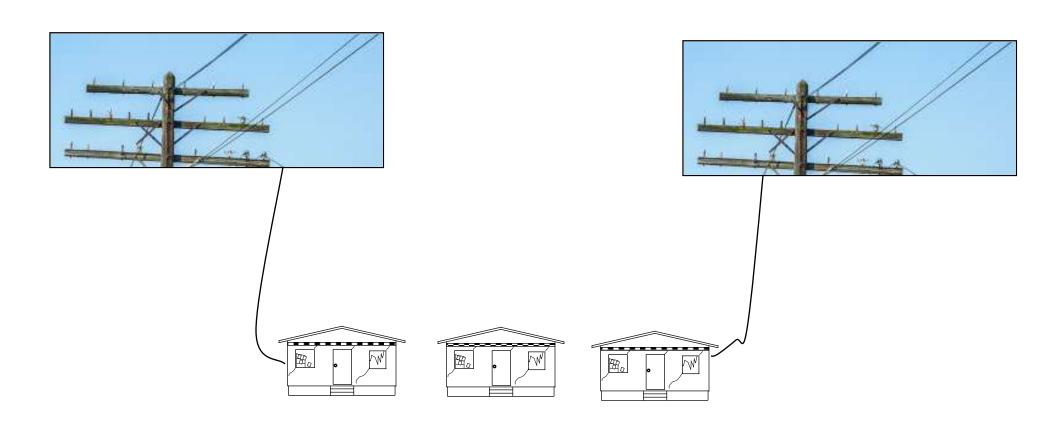
Heavy damage.

Sharps. (Nails, broken glass, etc.)



Power Lines.

Before getting within 50 feet of a power line easement, visually check poles either side of assigned building for drooping wires. If present, avoid all building between poles.





Suit-up.

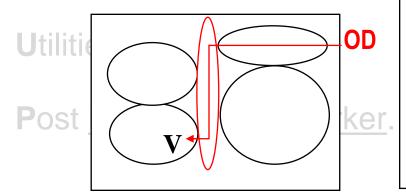
Structural Stability?

Interior Scan.

haZards.

Entry Points.

_



If building locked and no key, search for:

- 1. open door,
- 2. open window,
- 3. broken window,
- 4. small door/window pane in rear within arm's reach of an inside lock (break),
- 5. exterior-swinging door (remove hinge pins),
- 6. sliding door (pry open at latch).

Moderately Damage Building

"Bubble Map" as much of the interior as you can see for exterior, including best route/path to victim(s) to reduce time required inside for searching.

Suit-up

Structural Stability?

Interior Scan.

haZards.

Entry Points.

Utilities.

Post Building-S&R Marke

Depends on conditions found.

Lightly Damaged Building.			Moderately Damaged Building	Heavily Damaged Bldg.	
If:	Fire	Gas smell	Flooding	Shut off	Shut off
		or meter		All	All
		spinning		before	if safe to
shut	1. Electric.	1. Electric.	1. Electric.	entering	reach.
off*:	2. Gas.	2. Gas.	2. Water.	building*.	
		3. Vent		(Force gate if	
		building.		necessary.)	

^{*} If you cannot shut off the indicated utilities (dogs, powerlines, etc.), do not enter building.

Shut off utilities in alphabetic order.

- 1. Electricity.
- 2. Gas.
- 3. Water.



Suit-up.

Structural Stability?

Interior Scan.

haZards.

Entry Points.

Utilities.

Post Building-S&R Marker.

For <u>Moderately damaged buildings</u>, make a diagonal slash on the wall before entry to each building, corridor and room.

Cross it, making an X, on exit after all victims are removed. This tells FD this building has been cleared.

For <u>Lightly damaged buildings</u>, tape the Building - Search & Rescue Marker to the building and record your findings there when finished. This tells FD this building has been checked.

Damage Survey Teams will post these on buildings they investigate. Slash that.

Building Marker

(Post on Light & Moderately damaged buildings or outside collapse zones where it can be seen from the street.)

	Structure Damage	
If Lightly Damaged - No slashes., Mo	oderately Damaged - One slas	sh, Heavily Damaged - Both slashes.

Search & Rescue

Team 1	Date:	Time:		NSA.
	Usual r	nax. occupants:	nts OK of s	
		pected now:	— ads occupan	
Team 2	Mos och HI	HA Signed?	# Or DA fills	
	A SUBSIDIE	Self.	Actions	s:
	Community	Orana Markon	Elec Off?	
_	Emergency		Gas Off?	
Team 3	Response		H ² O Off?	
	Team	1 -4 1	Treated:	
		Left In	Trans:	
Team 4	and the second s	OK:		
	De	ad:	_	
	Trappe	ed:		
	Hazards: _			***********
	Not Searched	•		

Proceed to SEARCH if either:

- a) Victim(s) are seen or heard inside during Size-Up.
- b) "OK to Force Entry" ✓ (a <u>Search Request and Hold Harmless Agreement</u> was pre-signed).
- c) Neighbor knows victim(s) are inside and assumes responsibility for damages. (Have them sign Request & Hold Harmless Agreement.)

Search Tasks:

Shout out the Mobile (the "Minor" injured).

Entry. Find or Force. Clear & Mark...

Alert yourself & victims.

Right-to-Rescue, Left-to-Leave.

Check, Chock, Close.

Halt on Heavy.

When a victim is found, give them **SPACE**.

Size-up victim.

Permission to help? If no response, check if ...

Alive? Check ABCs of live.

Check for Critical bleeding, C-spine injury, Cracked bones?

Emergency care. Stop bleeding. Stabilize C-spine, fractures.

Shout out Mobile Minors.

Entry. Find or Force, Clear & Mark.

Alert - To hazards. - Victims.

Right-to-Rescue, Left-to-Leave.

Check, Chock, Close.

Halt on Heavy.

"This is your Emergency Response Team. If you can walk come to me. If you can't, call out or make noise."

(Those who can walk are assumed at this point to have no or only minor injuries.)

This accomplishes several things:

- 1. Announces who you are.
- 2. May get you entry without forcing.
- 3.a Gets the mobile casualties out of Moderately damaged buildings.
- 3.b Gets people to guide you in Lightly damage buildings.

Shout out Mobile Minors.

Entry. Find or Force. Clear & Mark.

Alert - To hazards. - Victims.

Right-to-Rescue, Left-to-Leave.

Check, Chock, Close.

Halt on Heavy.

- 1. Open door?
- 2. Key? Damage Survey Team? Neighbors?
- 3. Open window?
- 4. Broken window?
- 5. Small door/window pane (in rear) within arm's reach from an inside lock.

 Break. Cover edge before reaching in.
- 6. Sliding door.Will the non-sliding side slide?Pry away from jam stripping latch plate.
- 7. Exterior-swinging door (commercial),
 Pry jam away from door at latch.
 Remove hinge pins. (Rare.)
 Saw off hinges (if no gas leak).
- 8. Store-front swinging door.
 Pry door up, pulling lock pin out of sill.
- 9. Interior-swinging door.
 Halligan tool, axe, sludge, kick.

Shout out Mobile Minors.

Entry. Find or Force Clear & Mark.

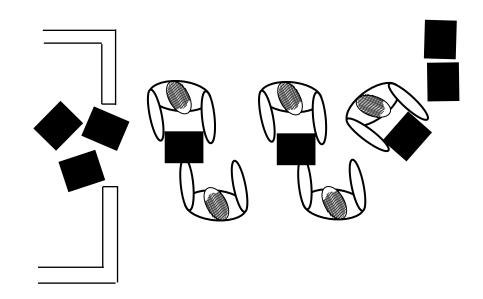
Alert - To hazards. - Victims.

Right-to-Rescue, Left-to-Leave.

Check, Chock, Close.

Halt on Heavy.

1. Clear an Exit path.



2. Mark with light (flashlight, glow-stick, etc.) illuminating exit point ceiling.

Shout out Mobile Minors.

Entry. Find or Force. Clear & Mark.

Alert - To hazards.

- Victims.

Right-to-Rescue, Left-to-Leave.

Check, Chock, Close.

Halt on Heavy.

Before entering a corridor or room,

Stop, Look, Listen and Think,

"What can harm me?"

Loose overheads. - Wear helmet. Avoid.

Broken glass. - Wear leather gloves.

Fallen plaster (nails). - Wear sturdy shoes/boots.

Unstable floor. - Test each step.

Exposed wiring. - Is electricity off? Avoid.

Flooding. - Is electricity & water off?

Gas, heavy smoke. - Leave.

Hazmat fumes (Bleach + Ammonia). Hold breath. Leave.

Any collapse/racking. - Leave.

"Is anyone in here?"

Shout out Mobile Minors.

Entry. Find or Force. Clear & Mark.

Alert - To hazards.

- Victims. <

Right-to-Rescue, Left-to-Leave. Alert victims to your presence as you go.

Then listen.

Check, Chock, Close.

Halt on Heavy.

Shout out Mobile Minors.

Entry. Find or Force. Clear & Mark.

Alert - To hazards. - Victims.

Right-to-Rescue, Left-to-Leave.

Check, Chock, Close.

Halt on Heavy.

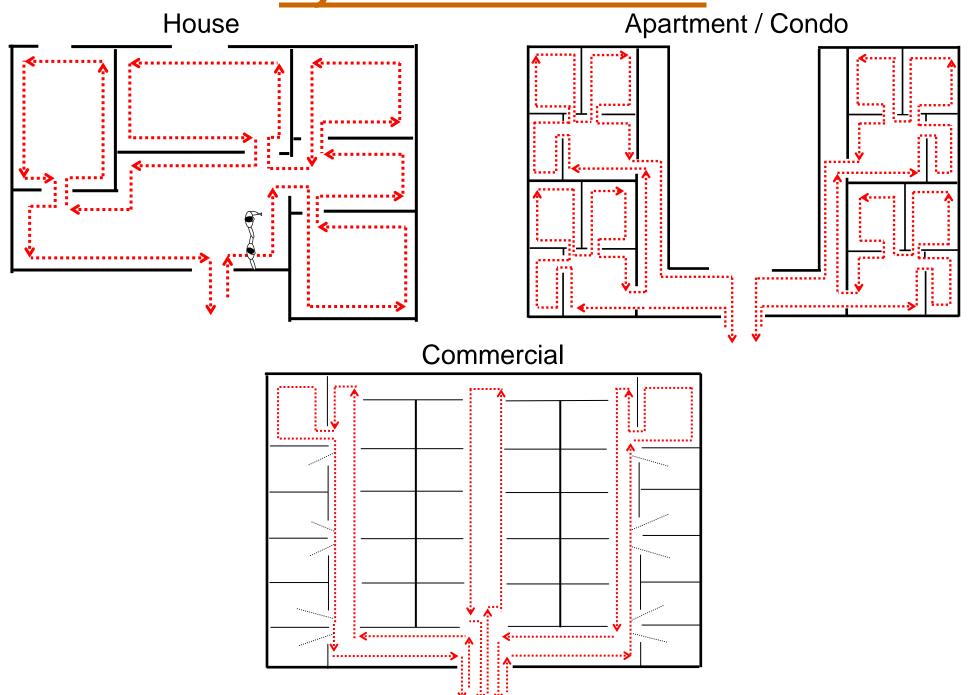
2. Do a Systematic Search.

Follow the Right-hand walls going in to Rescue. If lost, reverse direction, follow the (now) Left-hand wall out.

"Right-hand on wall to Rescue, Left-hand on wall to Leave.

In Moderately damaged buildings,
Mark a slash (/) on wall before entering
each corridor and room.
Cross it (X) after all living victims removed.

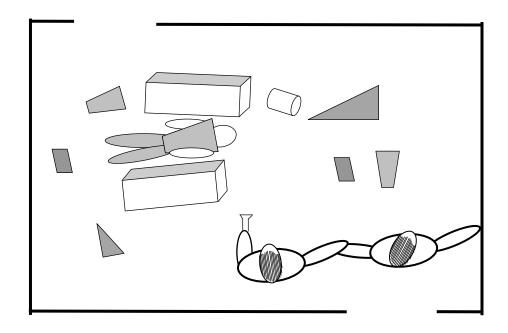
Systematic Search

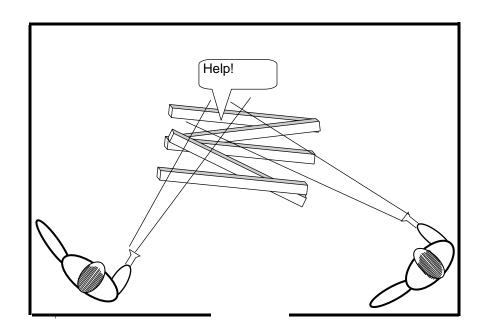


Systematic Search

Maintain orientation by maintaining contact with Walls.

Find hidden victims via Triangulation.





SEARCH

Shout out Mobile Minors.

Entry. Find or Force. Clear & Mark.

Alert - To hazards. - Victims.

Right-to-Rescue, Left-to-Leave.

Check, Chock, Close.

Halt on Heavy.

Check closed doors for heat (using the back of your hand) before opening.

If hot, leave them closed.

Chock doors open on enter. (Prevents being trapped in aftershocks.)

Close doors on exit.

(Increases building's structural strength.)

SEARCH

Shout out Mobile Minors.

Entry. Find or Force. Clear & Mark.

Alert - To hazards. - Victims.

Right-to-Rescue, Left-to-Leave.

Check, Chock, Close.

Halt on Heavy.

Terminate search and exit section on discovery of Heavy Damage:

- Racked walls.
- Any Collapse.
- Structural Instability ("Creaking").
- Instability (e.g. floor movement).
- Heavy Smoke or Fire.
- Leaking Gas.
- Hazardous Materials.
- Flooding.

Size-up victim.

Permission/LOC?
If responsive, check Level Of Consciousness.
If un-responsive, check if ...

Alive? Check ABCs of Life.

Critical C's Check. C-spine injury, Cracked bones? Critical bleeding.

Emergency care. Airway. Bleeding. C-spine, bone fractures.

Size-up victim.

Permission/LOC?

Alive?

Critical C's. Check

Emergency care.

Before approaching a victim look for hazards to you:

- Loose overheads.
- Sharps (glass, nails etc.)
- Furniture that can shift.

- If possible, approach so victim can see you approaching.

Size-up victim.

Permission/LOC?

Alive?

Critical C's. Check

Emergency care.

(Video tape this with you cell phone/pole-cam.)

"Hi. What's your name? What happened?"

If patient is Alert (LOC = A),

"We're Good Samaritan volunteers, but not medical professionals. Do you want our help?"

If "What do you mean?",

"It means you can't sue us if we hurt you."

If "Yes", go to Critical C's Check-1.

If "No", go to next victim or leave.

If no response, tap shoulder & shout.

If response, LOC = V, Response to Voice.
Go to *Critical C's Check*-2

If no response, pinch finger-nail bed.

If response, LOC = P, Response to Pain. Go to *Critical C's Check-2*

If no response, LOC = U, Unresponsive. Go to *Alive?*

Size-up victim.

Permission/LOC?

Alive?

Critical C's. Check

- 1. C-Spine
- 2. Cracked Bone, Critical Bleeding

Emergency care.

Check ABC's of Life. (Done only on Unresponsive victims.)

Airway. Open mouth. (finger scissor)

Finger swipe out any debris.

Breathing. Look, Listen & Feel for breathing.

Circulation. Check Carotid pulse.

IF pulse & breathing, assume Head & Spinal injury. Go to *Critical C's Check-2*.

If pulse but not breathing,
Open Airway via **Jaw-Thrust.**

If still no breathing,
Open Airway via **Head-Tilt-Chin-Lift.**(Give a child 2 rescue breaths.)

If still not breathing, mark "**DEAD**". Continue search.

If no pulse and no breathing, mark "**DEAD**". Continue search.

Size-up victim.

Permission/LOC?

Alive?

Critical C's. Check

Emergency care.

Do before moving a patient.

Tell patient what you are going to do.

Have Partner manually stabilize head.

1. C-Spine injury?

If LOC not Alert (V,P,U), assume possible injury. Ask patient to move each hand & foot. Touch each hand & foot and ask which is touched. Motor & Sensation deficit any extremity = injury.

2. Cracked Bones?

Do Rapid Trauma Check for:

Deformity

Open Wounds (Bleeding)

Tenderness

Swelling.

Critical Bleeding?

Check your gloves for blood as you go.

Size-up victim.

Permission/LOC?

Alive?

Critical C's. Check

Emergency care.

1. Stop any rapid bleeding:

Direct pressure via gloved-hand. Add 4x4 gauze sponge, or several 4X4 pads.

If bleeding stops, secure w pressure bandage:

- a. WoundStop / Israeli Bandage,
- b. Gauze sponge & ACE bandage, or
- b. SWAT-T as pressure bandage. *video*

If not, then if wound is on:

Limb,

Apply SWAT-T as a tourniquet.

Write time applied on patient.

Torso,

Pack with Z-Pak / Combat gauze, Add pressure bandage. *video*



Size-up victim.

Permission/LOC?

Alive?

Critical C's. Check

Emergency care.

2. Spinal Motion Restriction.

If Head Mid-lined, use Rigid C-Collar.



If Head is rotated, use Soft C-Collar.



(If stabilizing fractures requires equipment you don't have, do during RESCUE.)

Size-up victim.

Permission?

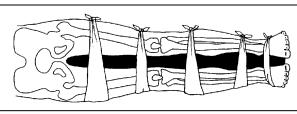
Alert? Alive?

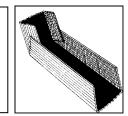
Critical C's. Check

Emergency care.

3. Immobilize major fractures. Leg via Vacuum-Splint, Body-Splint, Cardboard-splint.







Pelvis via SAM Pelvic Sling (or SWAT as a sling).







Arm(s) via swathe, BB strap, pt. holds.







Spine, Hip, Femur via Fasplint Full-Body.



Size-up victim.

Permission/LOC?

Alive?

Critical C's. Check

Emergency care.

3. If LOC = V, P, or U, Maintain an Airway.

If you must leave the victim, roll them into High Arm In Neck Exposed Spine (HAINES) position. (Breathing trumps risk of paralysis.)

Demo



SPACE based on LOC.

Level Of Consciousness:	Alert & Oriented	Responds to Voice	Responds to Pain	Unresponsive
PRIMARY ASSESSMENT - S&R	Offerited	to voice	to i aiii	
Check ABC's for Signs of Life?	No	N	0	Yes
- Check Airway	No	Ν	0	Clear mouth.
				Open Airway.
- Check for Breathing	No	Ν	0	Yes,
- Check for Circulation	No	No N		Yes
Critical C's Checks?				
C-Spine Check?	Yes	No, patient	's answers	No, patient can't
Test peripheral Motor, Sensation.		are unr	eliable.	respond.
(Deficit = spinal injury.)				
Crack Bones Check?	Yes	Yes		Yes
Critical Bleeding Check.	Yes	Yes		Yes
Emergency Care?				
Use oro- or naso- adjunct to	No.	No.		Yes if required to
maintain airway?				maintain Airway.
Spinal Motion Restriction:	Yes if	Yes, pt. unr	eliable due	Yes, can't clear.
-Manually during Critical Checks.	peripheral		•	
- via soft C-Collar if head rotated(?)	Motor,	injury/co	ondition.	
 via rigid C-collar if head midlined. 	Sensation			
 via BB pads & tape if no collar. 	deficit.			
Logroll prone pt. supine?	Yes	Ye	es	Yes
Stop Critical Bleeding?	Yes	Ye	es	Yes
Stabilize Cracked Bones?	Yes	Ye	es	Yes



Size-up victim.

Permission/LOC? If Unresponsive, check if ...

Alive?

Check 3 C's., 1. C-spine? 2. Cracked bones, Critical bleeding?

Emergency care: 1. Stop bleeding. 2. Stabilize C-spine & fractures.

Rehearse

Extraction.

Stabilize fractures, dislocations.

Collect Pt's essentials.

Upload Patient.

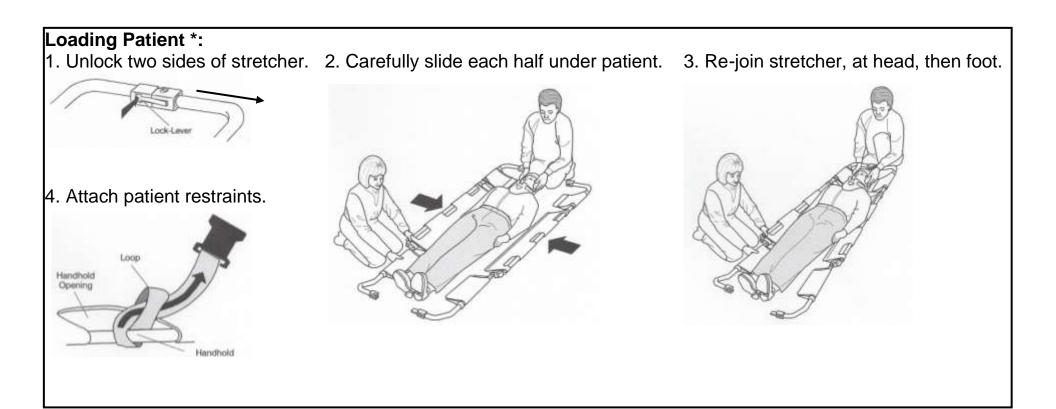
Extract.

Special Situation

lf

- 1) building is Moderately damaged, and
- 2) you have a Scoop Stretcher, and
- 3) victim is in supine position (on their back) in a debris-free area,

scoop victim, secure and extract now!



Rehearse

Extraction.

Stabilize fracture

Collect Pt's esse

Upload Patient.

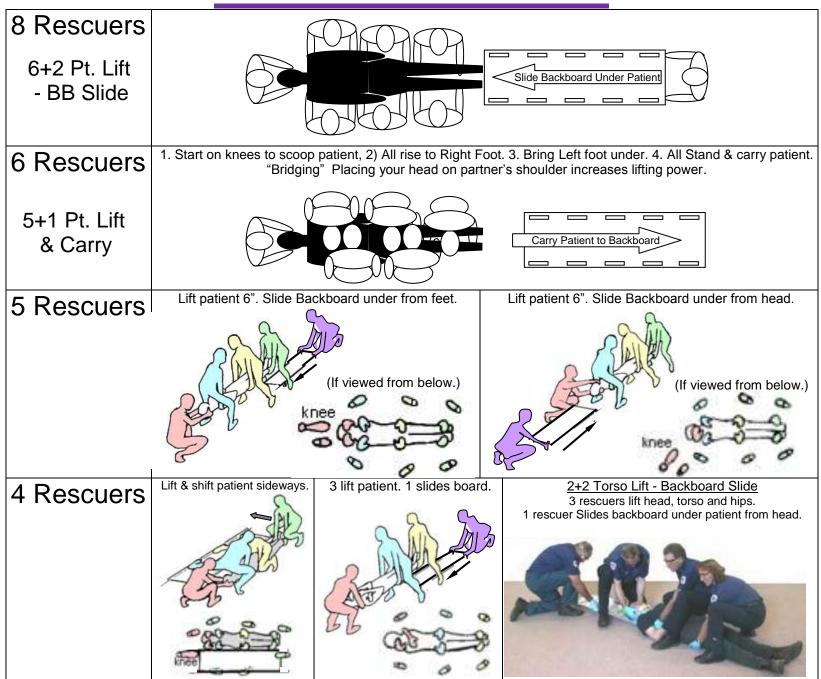
Extract.

Plan your rescue (outside of Moderately Damaged buildings) based on patient's injuries, equipment, personnel and space available.

Extraction Methods:

الــ	Method:	Scoop	<u>Lift to</u>	Logroll to	<u>Chair</u>	<u>Direct</u>
		<u>Stretcher</u>	Backboard	Backboard	<u>Carry</u>	Carry.
		(2-3 people)	(4-8 people)	(4 people)	(2 people)	(2 people)
			(High Debris)	(High Debris)	or	Strap
		1 holds head	1 holds head 3 lift Torso, or	1 holds head 3 roll pt. up	· · · · · · · · · · · · · · · · · · ·	_
	Injury:	2 scoop pt.	6 lift Body.	1 pos'n bkbd	Crutch	Street Carry
			1 slides bkbd.	2 roll pt. down.	kboard people) or Debris) or Human or Georgia-Street Control of the deside.	
16	Head Neck					
	C-Spine	1	2	3		
	Unconscious					
	Shoulder,	2	3	4 to	4	
	Chest, Rib	2	3	good side.	I	
	Arm,	2			1	
	Hand	2			I	
	Pelvis, Hip,	1	2	3 to		
	Upper Leg	I		good side.		
	Lower Leg	1			2	
	Foot	I			_	
	Other or					1
	Emergency					

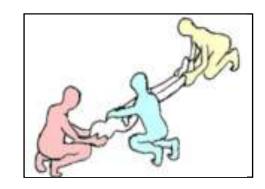
Lift to Backboard

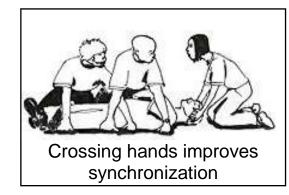


Easiest on Patient. Greatest resource and working space.

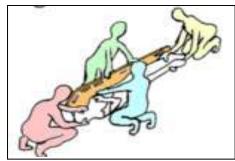
Logroll to Backboard

- 1. Manually stabilize head.
- 2. Roll patient up 90 degrees

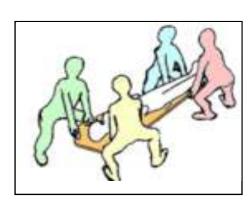




3. Position Backboard.



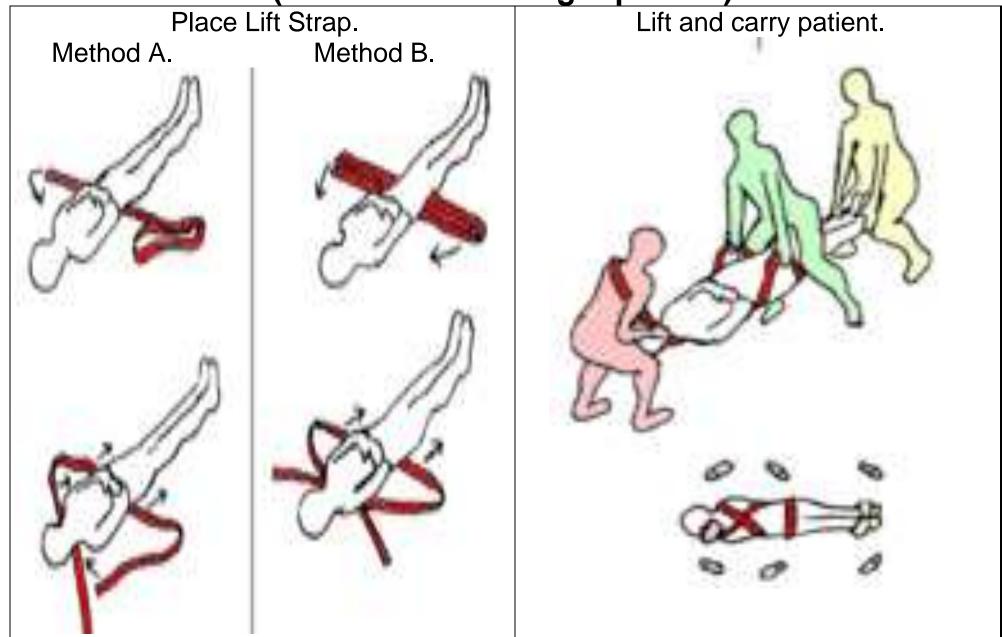
- 4. Roll patient down onto Backboard.
- 5. Add "Head Blocks" (rolled towels, tape, etc.)



Harder on Patient. Easiest on Rescuer. Less working space.

Strap Lift & Carry

(Extrication from tight places.)



Easy on Patient. Hardest on Rescuer. Least working space.

Rehearse

Extraction.

Stabilize fractures.

Collect Pt's essentials.

Upload Patient.

Extract.

Wear mask, goggles, Nitrile or latex gloves.

C-Spine.

If victim can't move <u>and</u> feel both hands <u>and</u> feet, has posterior neck midline tenderness, or is unconscious, assume spinal injury. In:

- Lightly Damage Structure, do not move pt.
- Moderately Damage Structure,

Keep head in position found relative to body, manually first, then with Head Blocks or rolled towels and tape across forehead & chin preventing head rotation & lifting. (Do not X tape. This would prevent head from sliding with body if backboard tilts, causing neck extension.)

Use 6-person Body Lift to Full-body Vacuum Splint. Otherwise, apply C-Collar for Logroll.

Major Fractures. Immobilize:

Angulated limb - Vacuum splint.

Arm - swathe, strap, pt. holds or waist band.

Leg - pad & strap bad leg to good leg.

Pelvis - SAM Pelvic Sling Splint, or ...

or Hip: - 6-person Body Lift to Full-body Vacuum Splint.

- or backboard.

Rehearse

Extraction.

Stabilize fractures.

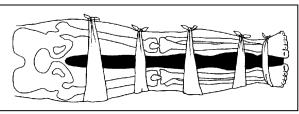
Collect Pt's essentials.

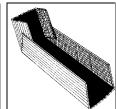
Upload Patient.

Extract.

3. Immobilize major fractures. Leg via Vacuum-Splint, Body-Splint, Cardboard-splint.







Pelvis via SAM Pelvic Sling (or SWAT as a sling).







Arm(s) via swathe, BB strap, pt. holds.







Spine, Hip, Femur via Fasplint Full-Body.



Rehearse

Extraction.

Stabilize fractures.

Collect Pt's essentials.

Upload Patient.

Extract.

If patient or companion is conscious, ask if patient needs meds or medical equipment. If so, where are they?

Retrieve and bag.

If patient is unconscious, check for Medical ID tag. Look around and try to find:

- Medicines. Check:
 - Bathroom medicine cabinets, counters.
 - Bedroom night stands.
 - Kitchen counters.
- Medical equipment, (e.g. Oxygen tank.)
- Bottle water. (Bring up to 3 gallons.)
- Canned food (Bring up to 9 cans).

Rehearse

Extraction.

Stabilize fractures.

Collect Pt's essentials.

Upload Patient.

Extract.

Use the Lift or Roll Rehearsed Earlier.

- a. 6-person Full-Body Lift BB Slide (8 total).
- b. 2-person Torso Lift BB Slide (4 total).
- c. Logroll (4 total).
- d. Strap Lift and Carry.
- e. Chair Carry.
- f. Human Crutch.
- g. Georgia Street (2-person Extremity Carry.)

Strap Patient.

For Extraction, strap patient under arms at waist and below knees to prevent sliding toward feet while going down stairs.

(For transport, restrain patient across shoulders to prevent sliding toward head during braking and stopping.)

Backboard Setup

Extraction Setup.

Place upper restraint high under armpits to prevent patient sliding down when being carried down stairs or slopes.

Waist Restraint.

For hip / leg fractures, secure good leg to backboard. Tie bad leg to good leg.

Lower restraint just below knees.



Transport Setup.

Run upper restraints over shoulders, cross at chest, to prevent patient sliding forward on braking.

Ensure chest Restraint does not inhibit breathing.

For Spinal injury, hip or leg fractures, place vacuum-splint mattress on backboard before placing patient. Form to most comfortable position before pumping out air.

Rehearse

Extraction.

Stabilize fracture limbs.

Collect Pt's essentials.

Upload Patient.

Extract.

Extract Patient.

Moderately Damaged Building

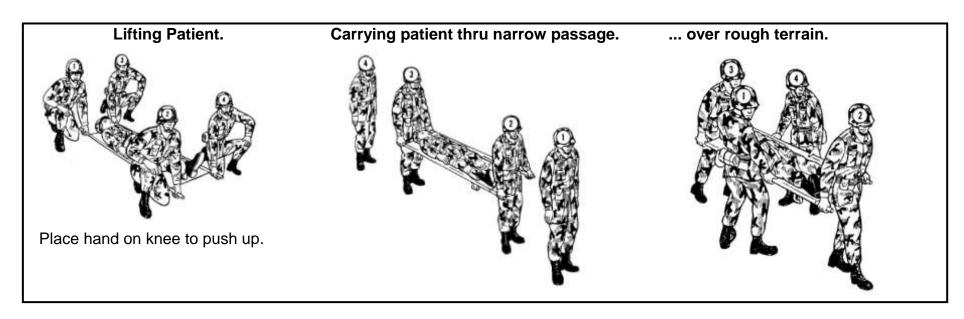
Extract ALL occupants.

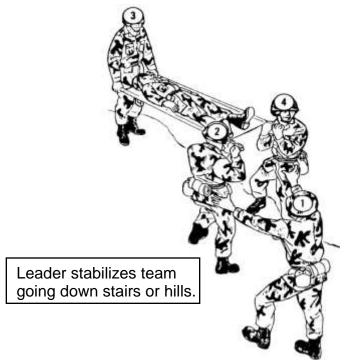
Lightly Damage Building

Extract those requiring transport to hospital (when a hospital opens or become accessible).

Bend at your hips, not your waist. Lift with your legs, not your back.

Lifting & Carrying Stretchers and Backboards.





Rehearse Extraction.

Stabilize any fractures.

Collect Pt's essentials.

Upload Patient.

Extract.

Report.

Repeat. (for all non-trapped)

Release the Trapped.

Report to IC on each exit:

- Areas searched, remaining.
- Victims found, removed, remaining.
- Pets seen.
- Hazards.

Rehearse Extraction.

Stabilize any fractures.

Collect Pt's essentials.

Upload Patient.

Extract.

Report.

Repeat. (for all non-trapped)

Release the Trapped.

Rehearse Extraction.

Stabilize any fractures.

Collect Pt's essentials.

Upload Patient.

Extract.

Report.

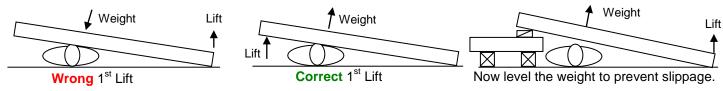
Repeat. (for all non-trapped)

Release the Trapped.

Release the Trapped. GuideBook procedure d. Cribbing and Shoring

Cribbing is the process of stabilizing, then lifting, and shoring up an object too heavy to be lifted by hand, in order to free a trapped victim. Follow these steps:

- 1. Determine if safe to approach. Determine if victim is still alive by checking radial pulse. (Victim may be unable to breath.)
- 2. Plan the lift. Although you may have to lift from more than one side before freeing the victim, the first lift must take weight off victim's chest to free breathing capability.

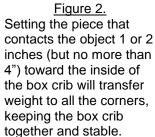


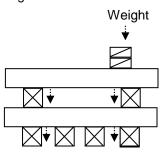
- 3. Secure the side NOT TO BE LIFTED with wedges. (See Step numbers inside Figure 1 and 3 below.)
- 4. If the side to be lifted is already off the ground, build two box cribs under that side. Two corners of each box should be

under the object to be lifted. Use 4x4's for bottom layer(s), if possibly, and 2x4's for the top layer(s) if 4x4's won't fit. Stack the object-contact member 1" toward inside of box. (See Figure 2.) Max. height allowed equals the width of the box crib's base.

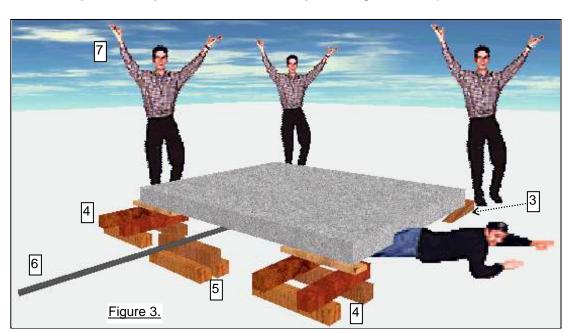
You can stack a <u>maximum of 2</u> members in the same directions to fill in a gap. The top member should be parallel with side to be lifted. If this arrangement can not be achieved with current crib arrangement, rotate the crib ¼ turn (90°) so it can.

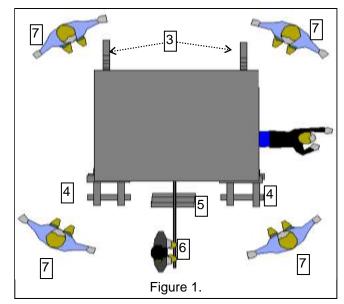
- 5. Build a solid "pyramid" fulcrum.
- 6. Keeping hands and fingers on top of bar, lift the object enough to add one <u>2</u>x4 to the box cribs on that side.
- 7. When all four corner cribbers raise their hands indicating that their box crib is in place and their hands are clear, lower object.
- 8. Repeat Steps 6 & 7. On the third lift, replace 2x4's with one 4x4.
- 9. If victim is not yet free, repeat Steps 6, 7 & 8 on the other side.
- 10. If victim is not yet free, repeat Steps 6, 7 & 8 on the original side.
- 11. When the victim is freed, lower the object for safety and for material reuse by reversing the above process.





Use a solid base on dirt or soft asphalt. **Max. height** = width of base.





S&R Standard Tasks.

SIZE-UP

Structural Stability?

Interior Scan.

haZards.

Entry Points.

Utilities.

Post Building-S&R Marker.

SEARCH

Shout out the Mobile Minor-injured.

Entry. Find or Force. Mark & Clear.

Alert to hazards and victims.

Right-to-Rescue, Left-to-Leave systematic search.

Check & Chock doors.

Halt on Heavy damage.

When a victim is found, give them **SPACE**.

Size-up victim.

Permission to help?

Alive? Check ABC if not response.

Check C-spine, Critical bleeding, Cracked bones?

Emergency care. Stop bleeding. Maintain Airway.

RESCUE

Rehearse Extraction.

Stabilize any fractures.

Collect Pt's essentials.

Upload Patient.

Extract.

Report & Repeat. (if more victims)

Release the Trapped.

RPMS Triage.

Package & Transport "Immediates".

Evaluate & Treat "Delayeds" & "Minors".

Package & Transport "Delayeds".

RPMS Triage.

(Medical Team/S&R)

Prioritize the Injured.

First Red condition determines status.

Package & Transport "Immediates".

Evaluate & Treat "Delayeds" & "Minc

Respira	Respiration Rate F		Perfusion/Pulse		S tand	Urgency	
Adult	Child	Capillary	Radial	Status.	up & walk	Status	
		Refill	Pulse	Cognizant?	on owe?		
< 10, < 15, > 2 N		No	No		Immediate		
> 30	> 45	Sec's				*	
>10,	>15,	< 2	Yes	Yes	No	Delayed	
< 30	<45	Sec's					

[&]quot;Delayeds" & "Mino * Treat for Shock - feet above chest (if no spinal injury or head swelling), keep warm.

Package & Transport "Delayeds".

RPMS Triage.

Package & Transport "Immediates".

Evaluate & Treat "Delayeds" & "Minors".

Package & Transport "Delayeds".

Medical Team/S&R prepares transport device (our old heavy backboards) with vacuum splint mattress or blankets.

S&R Team assists with moving patient to transport device (our old heavy backboards)

Transport Teams (volunteers with vans, SUV's or trucks) carry patients to hospital, if open, or to C.P. Medical Area for care and observation until hospital opens.

RPMS Triage.

Package & Transport "Immediates".

Evaluate & Treat "Delayeds" & "Minors".

Package & Transport "Delayeds".

(Medical Team/S&R.)

Head-To-Toe Injury Evaluation in RPMs-Triaged order.

First Aid Treatment. Priorities:

- 1. Airway & Breathing (Left Lateral)
- Rapid Bleeding (Direct pressure, Elevation & Pressure Point, Hemostatic Agent, Pressure Bandage.
- 3. Shock (Feet up)
- 4. Head trauma (BackBoard head up)
- 5. Spine (BackBoard level)
- 6. Burns and Wounds
- 7. Fractured limbs (Pad & Splint)

RPMS Triage.

Package & Transport "Immediates".

Evaluate & Treat "Delayeds" & "Minors".

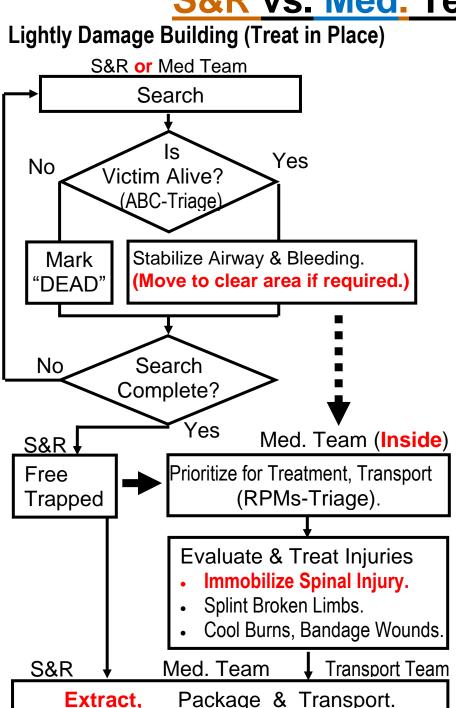
Package & Transport "Delayeds".

(Same as for "I"s.)

Standard Tasks by type Building Damage

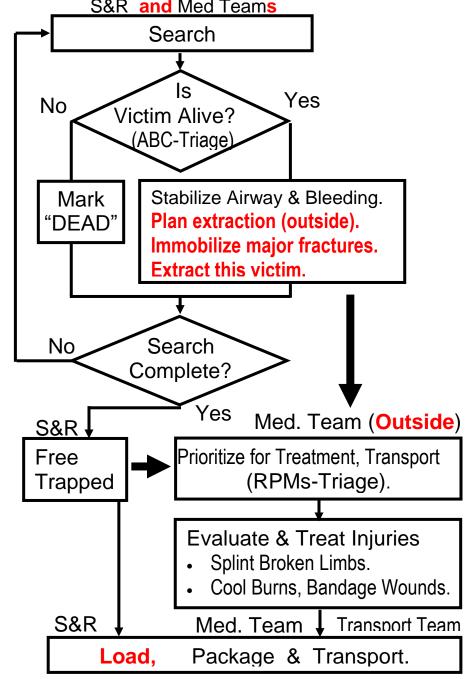
	Lightly	Moderately	Heavily	
	Damaged	Damaged	Damaged	
Size-Up Includes Structure Triage	Each building, room,	Each building, room	, Outside of the	
O120 OP melades offactare mage	& victim	& victim	Collapse-Danger Zone	
Shut off risky Utilities. In Lightly Damaged, it	If Fire, shutoff Gas & Ele If Gas, shutoff Electric &	Coo	Shut off All	
depends on conditions. If you don't know how to tell, shut all off.	If Water, shutoff Electric		if safe to reach.	
Evacuate Mobile Minors	Evacuate the	Evacuate	Call out any inside	
	"un-helpful"	All Mobile.	Collapse-Danger Zone.	
Find & Stabilize the Living.	ABC-Triage.	ABC-Triage.	ABC-Triage any found in	
	Maintain Airway.	Maintain Airway.	debris field outside the	
	Control bleeding.	Control bleeding.	Collapse-Danger Zone.	
Plan & Prep for extraction	(Rapid extraction not	Rapid Assessment.	Rapid Assessment.	
•	required. Therefore	Plan extraction outside.	Immobilize & move to a	
or movement.	fracture check done	Immobilize major fractures	safe area.	
	during Head-to-Toe.)	(Splint outside).	(Splint in safe area.)	
Extract the Non-mobile.	(Not done at this point.)	Extract each living victing		
		in order found.	victim in order found.	
Free the Trapped.	While Med. Team treats injured or after "Immediates"	After all others out &		
• 1	transported if no Med. Team	after an aftershock.	Collapse-Danger Zone.	
Prioritize to Treat &/ Transport.	RPMs-Triage	RPMs-Triage	RPMs-Triage	
Thomas to most of manaport.	Inside.(Med or S&R)	Outside. (Med. Team)	in a Safe Area	
Evaluate and Treat Injuries	Inside.	Outside	In a Safe Area	
= varaate arra rreat mjarree	(Med or S&R)	(Med. Team)		
Package for Transport.	Inside	Outside	In a Safe Area	
- 3.3.1.3.3 - 3.1.3.1.3 p 3.1.3	(Med or S&R)	(Med. Team)		
Transport Patient.	To Hospital, C.P.	To Hospital, C.P. or	<u>-</u>	
	or SavePlace Care.	SavePlace Care.	SavePlace Care.	

S&R vs. Med. Team Standard Tasks.

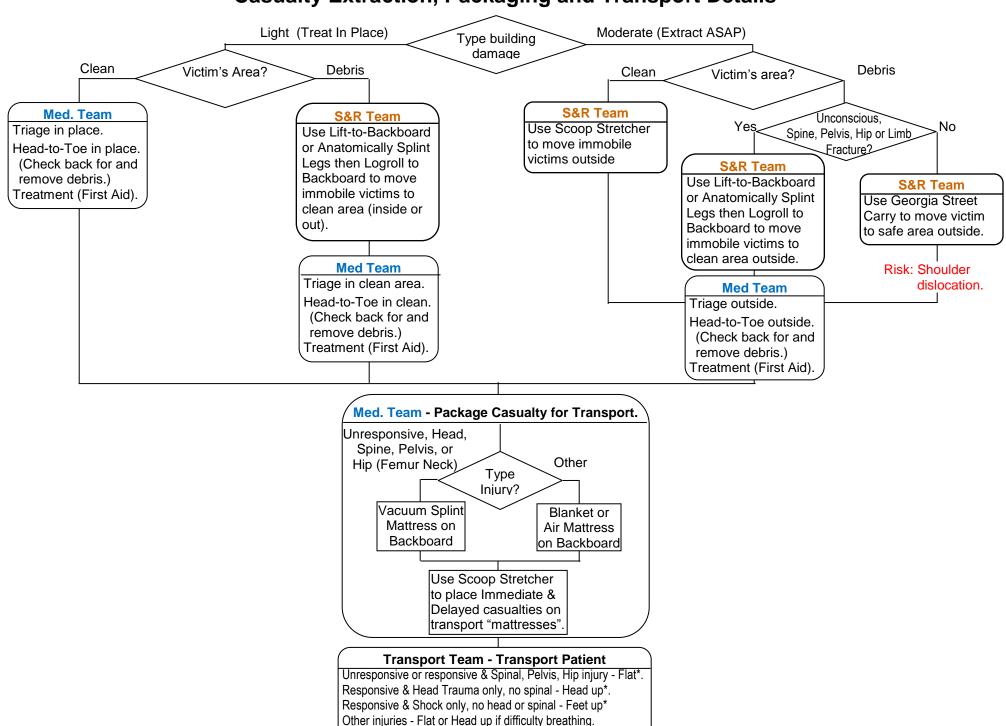


Moderately Damaged Building (Extract ASAP)

S&R and Med Teams



Casualty Extraction, Packaging and Transport Details



* Roll patient Left Lateral on any regurgitation.

Standard Tasks and Variations

The table below provides an overview of the standard Response Model upon which the Tasks in this GuideBook are based. (See **bold** headings on left.) Some Tasks are applicable only to the 4-Minute Life Saving Window. The methods and equipment used to accomplish some Tasks vary depending on whether you are performing them by yourself during your Initial Response at your home or business, or at a Mass Casualty Incident, or as a member of an Emergency Response Team during your Follow-on Response. In some Tasks the methods and equipment vary based on the type injuries sustained by the people you are rescuing and the structure they are in. These variations are summarized below.

TASKS	Initial Individual Response at:		Team Response to:						
During 4-min Life Saving Window.		Your Home		Mass Casualty Inc			Community or Workplace		
Verbal Triage.	"If y	ou can v	valk,	"If can	walk, sta	nd."= M		· · · · · · · · · · · · · · · · · · ·	
Use verbal commands to sort non or minor injured from the		me to m		"If can't	walk, w	ave."= D			
injured and to get the non-injured to help you.				Incogniz	zant Inca	pable = I			
Basic Life Saving of those:		By you		M's	Care f	or I's			
- Burning. Extinguish.		X			Х				
- Buried. Uncover.		Х			Х				
- Bleeding. Stop via Direct Pressure & Elevate, Press Pt., Tourniquet.		Х			Х				
- Not Breathing. Check ABCs. If not breathing,		CPR		Op	en airv	vay.			
Evacuate.		Blanket drag.		Multi-person					
If Heavy Smoke, Gas or HazMat, carry immobile out via:	Firer	nan's C	Crawl.	Hu	man ca	arry.			
After 4-Minute Life Saving Window									
Size-Up Structure Damage. Type Damage Found?	Light	Mod.	Heavy	Light	Mod.	Heavy	Light	Mod.	Heavy
Turn Off Utilities	if gas/fire	Χ	Χ	-	-	-	if gas or fire	before entry.	if accessible
If Fire, attempt to	supp		-	-	-	-	suppress or contain, as possible.		ossible.
Call for the Mobile (the "Walking Wounded" M inor's) to	(Do	one earl	ier)	(D	one ear	lier)	help you.	exit.	exit.
Find the Living:	Inside.	Inside.	Inside.	In MC	l's open	space.	Inside.	Inside.	ISafe zone
- Size-up each Room before entering.	X	X	X		(n/a)		X	X	n/a
- Callout for the Trapped. Find. Free easiest first.	Х	X	Χ	Х	X	-	Х	Χ	Х
- Hunt for the Buried Missing. Uncover and free.	Х	X	Χ	Х	Χ	-	Χ	Χ	Х
- Size-up each Victim before approaching.	Х	X	Χ	X	Χ	-	Х	X	Х
ABC Triage Check ABC's to find the living. If pulse but not breathing	Start R	escue Br	eathing.	Open Ai	way/Marl	k "DEAD".	Open Air	way, Recheck. Ta	g "DEAD".
Stabilize Casualties.									
- Stop severe bleeding.	(Sto	pped ea	rlier)		pped ea		Use ten	np. tourniquet till e	xtracted.
- Immobilize head, neck and torso if spinal injury suspected.	Wait for		o board.	Wait for	for Casualty holds.			Scoop St C-collar	
- Immobilize broken limbs to prevent further injury.	FD or CERT	Tie to	body.	FD	Casual	ty holds.	Splint	Straps Body Spli	Splint
Extract Casualties. Methods vary by injury and equipment a	available	е.							
- Broken arm or shoulder:	Location		alk	Wait	W	alk		Walk	
- Broken leg or hip:	is safe,	Arm / Bla	nket Drag	for	3-perso	on carry	2p Scoop S	Stretcher / 6p-Lift to	Litter or ↓
- Head, neck, C-Spinal injury, or unconscious:	keep in place.	Pope's	s Crawl	Fire	3-perso				
- Other non-mobile casualties:	iii piace.	Blank	et Drag	Dept.	2-perso	on carry.	2p Scoop S	Stretcher / 2p carry	
RPMs Triage. Sort for injury evaluation, treatment and transp	ort).								
Injury Evaluation and Treatment. Where done?	Inside	Outside	Outside	Inside	Outside	Outside	Inside	Outside	Outside
- Stop any continuing bleeding. Flush & cover wounds.		1st Aid K			ing / 1st /			P, QuikClot, pressu	ire bandag
- Cool and cover burns.		ool water. Aloe when cool.		Cool water (not ice)		Cool water, WaterJel Burn Dressing			
- Ice swelling from fracture, dislocation, Closed Head Trauma		Ice		Ice, C	Cold Con	npress		Cold compress	
- Splint fractured or dislocated limbs.	Pillow/c	ardboard	d & tape	body	splint w c	clothing	Cardboa	ard, SAM or vacuu	m splint.
Package Casualties for Transport. Method depends on t									
- Broken or dislocated shoulder or arm:	Private vehicle		Fire Department		Private vehicle				
- Spinal injury:	Fire De	Fire Department / CERT		Fire Department		Padded backboard / Vac. splint mattress on a backboard in a truck or van.			
- Other non-mobile:	Fire Department / CERT		Fire Department			fabric stretcher in			
Transport Immediates, then Delayeds (if FD ETA > 30 n	nin.) to	:							
a. Medical Facility, if open and reachable.		ct 911 o		Wait	for Fire	Dept.		911 or OEC via	
b. C.P Treatment Area till Med Fac. opens, FD arrives/Airlifts.	for info on open Medical				info on open Medical Facilities.				
- Treat Immediates for Shock. Monitor airway, stomach discharge.		Facilities	s. you can						
- Clean & bandage wounds. Hydrate burn victims. Keep warm & dry.			vehicle.						
- Ice swelling from sprains, strains, burses.									
c. Friend/neighbor's home, if bad weather, till hospital opens.								monitoring inst	
Leave spinal and hip-injured patients at hospital on:	(Family, won't leave.)		n/a		Full-body Vacuum splint mattress.				
Leave others on:	(rannly, won t leave.) n/a			Blanket Padding or air mattress.					

Legend: Red = Caution required. T.L. = Torso Lift so backboard can be slid under patient

Next Step

- 1. Review **CERT Field GuideBook**.
 - Preface
 - In Phase 1. Initial Response
 - Task 1. Initial Response at Your Home or Business.
 - Task 1.b Initial Response at a Mass Casualty Incident.
 - In Phase 2, Section 2. Incident Management.
 - Task F. Manage Heavily Damaged Building.
 - Task G. Manage Moderately Damaged Building.
 - Task H. Manage Lightly Damaged Building.
 - In Phase 2. Section 3. Incident Response Team Procedures.
 - Task b. Size-Up
 - Task d. Fire Suppression
 - Task e. Search and Rescue.
 - Task f. Cribbing.
 - Task i. Patient Packaging and Transport.