

DAMAGE SURVEY

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Phase 1 - Initial Response (At Your Home)

CERT Field GuideBook Phase 1, Section 1. Initial Response



1. Drop, Cover and Hold On.



BASIC Life Saving of
Family / Coworkers.



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



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



Triage, Injury Evaluation
and Treatment.



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

Action Plan

Phase 1- Your Individual Response at Your Home or Business.

First 4 Min.	Save people Burning, Buried, Bleeding, Not Breathing.	A. Your Home and Family. B. Mass Casualty Incident.
10 Min.	Secure your home.	

Phase 2 - Team Response in neighborhood/workplace

		Damage Survey Team	Search & Rescue Team	Medical & Transport Teams
First 4 Hours	Death from Slow Bleeding, Shock.	Major Damage Survey 1. My Block → 2. Areas →	Find and extract non-mobile victims from Moderately Damaged buildings. →	Triage. Evaluate. Treat. Transport.
First 24 Hours	Death of mobility impaired & trapped from injuries and exposure.	Light Damage Investigation →	Extract casualties requiring transport from Lightly Damaged buildings. →	Triage. Evaluate. Treat. Transport.
First 4 Days	Death of mobility Impaired & trapped from Dehydration.			Triage. Evaluate. Treat. Transport.

Damage Surveys

Types:

- 1. Major Damage Survey.**
- 2. Lightly-Damage-Building Investigation.**
- 3. Re-Survey.**

Major Damage Survey

- ❑ Quick “windshield” survey.
- ❑ Looking for:
 - ◀ **Fires.**
 - ◀ **Downed Power Lines**
 - ◀ **Ruptured Gas and Water Main Pipelines.**
 - ◀ **Hazardous Material Leaks.**
 - ◀ Heavily Damaged buildings (tilting, collapse).
 - ◀ Moderately Damaged buildings (major cracks).

Major Damage Survey done in two parts.

1. Your "Block" Survey

- Done by each Response Team member on their way to Command Center.**

2. "Area" Survey

- Done by 2-person **Damage Survey Teams**.**
 - One Driving, watching the road.**
 - One Looking for incidents.**
- Done on Blocks not yet surveyed.**
- Assigned at Command Center.**

Lightly-Damage-Building Investigation

- ❑ **Done by:**
 - **Damage Survey Teams, or**
 - **Spontaneous volunteers trained by Damage Survey Team.**
- ❑ **Door-to-door investigation of Light and non-damaged buildings.**
- ❑ **Determine if occupants are injured & need help.**

Re-survey

- ❑ **Repeat Major Damage Survey after each major secondary event (e.g., major aftershock).**
- ❑ **Looking for:**
 - New major incidents.**
 - + Previously surveyed Lightly damaged buildings now Moderate or Heavily damaged.**

Damage Survey Summary

	Major Damage Survey. Re-Survey.	Light Damage Investigation
What:	Find <u>Life-threatening incidents</u> . - Downed Power Lines. - Fires. - Ruptured Gas/Water Mains. - Unsafe Roads. - Heavily Damaged Buildings. - Moderately Damaged Buildings	Find <u>people</u> injured in Light or non-damaged buildings.
How:	Drive through, looking.	Walk through, knocking.
Where:	Streets assigned at C.C.	Blocks assigned at C.C
Get info from:	Neighbors.	Occupants.
Post Marker:	Yes. (Moderate and Heavily damaged buildings only.)	Yes. (Lightly damaged buildings.)
Cordon off:	Yes.	No.

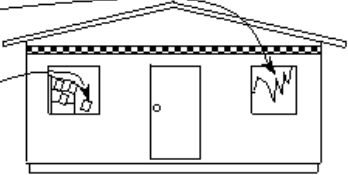
Damage Survey Team in Action

(Use **CERT GuideBook** or Clipboard as your Field Desk.)

Structure Damage Levels

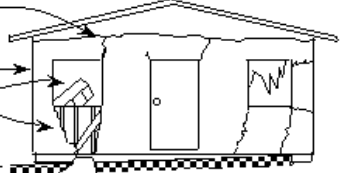
Light Damage

Broken Window(s).
(No apparent damage to exterior walls visible from street distance.)
(Damage mostly to interior contents.)



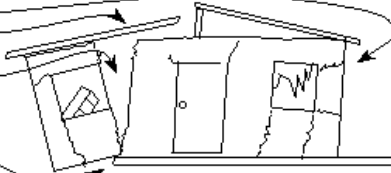
Moderate Damage

Broken Wall(s) visible from a distance (eg, from the street), but:
No Tilting (All walls are vertical.)
No Collapse of walls, floors or roof.
Major Internal Debris, (e.g., Toppled Furniture)
Fallen Decorative Work.



Heavy Damage (Any of the Following):

Tilting
Any Collapse of roof, wall(s) or floor(s).
Obvious Structural Instability.
Off Foundation.
Non Structure Hazards:
Heavy Smoke or Fire.
Leaking Gas.
Hazardous Materials.
Rising or moving water

[illegible]

Damage Assessment Officer

**First Damage Survey Team member
reaching Command Center becomes
Damage Assessment Officer.**

Give "Block" Damage Report to Damage Assessment



Get "Area" Major Damage Survey assignment and Teammate.

Damage Assessment records Incident(s).

- Record Incident:
 - Time found.
 - Location.
 - Type.
 - Occupants involved (if known).

- Mark Incident number on Map.

- Mark areas surveyed thus far on the Map. Request assignment to complete the survey.

Incident Log

Date: Saturday, July 4	Area Map / Diagram
Time: 1600	
Person Reporting: Hilltop CERT Damage Assessment	

TIME	INCIDENT ADDRESS/LOCATION	Struc Type		FIRES	HAZARDS	ROADS	STRUCTURE DAMAGE	OCCUPANTS	C.P. Use
	For Residential, enter: Street Name Address Address For Workplace, enter: Building/Floor/Corridor	Ap't Business House School BRidge Bus Car TRain Truck	OK to Force Entry? (Y/N)	Small (Lo heat @ 10') Large (Too hot @ to stop)	Power Line Down Haz. Materials (704 > 1) Gas - Main or Line Water - Main or Line	Accessible Blocked / No Access	Heavy (Tilting, Moved, Collapse/ UMB) Moderate, No 'We're OK' (Broken Walls, maj. int. debris) Light, but No 'We're OK' (Broken Windows / Int. debris)	√ = Suspected Number = Known I = Injured. T = Trapped. D = Dead.	Incident ID Number. (X - Completed.)
1620	Venice Bl. at Grand View	C		X	X			2 Dead	1
1625	3277 City View Drive	H	X					√	2

Damage Report

Date:	Area Map / Diagram
Time:	<i>Blocks or area to survey.</i>
Person Reporting:	

[illegible]

Conduct Major Damage Survey



Major Damage Survey - Procedure

For each Incident found:

(Fire, Power Line, Gas/Water Main, Road, Building)

1. Record incident in Damage Report.

2. If instructed and safe to do so, Cordon off:

- Downed Power Lines.
- Ruptured Gas/Water Mains.
- Unsafe Roads.
- Hazardous Material Areas, up wind, upstream, uphill.
- Heavily Damaged Buildings.

3. Check & Post (via *Building Survey Sub-Procedure* on next page):

- Moderately damaged building Occupants status.
- Heavily damaged building Occupancy status.

4. Report incident to Command Center via radio or runner.

Major Incidents

Fires



Power Line down across street/road.



Stay 30' (50' if wet) away from ground contact point or swing radius.

Ruptured Gas Main



Ruptured Water Main



Stay away from edge.

Unsafe Roads



Stay away from edge.

Radio

Hold radio vertical (antennae straight up)

3 inches from and to side of mouth.

Verify channel is clear by listening before talking.

(On FRS, hold MON. If just hissing, channel is clear.)

Press and hold Push-to-Talk Button.

(Release ½ second after your finish speaking.)



Wait ½ second. Then speak slowly and clearly *across* (not into) radio:

"name-of-function-you-are-calling THIS IS your-function-name, OVER."

" Hilltop Damage Assessment THIS IS Survey 1, OVER."

When call is answered, say:

"your-function-name

AT location,

HAS type-incident /casualty

WITH injury-type.

NEED _____. OVER"

EXAMPLES

Survey 1

3299 Inglewood

Moderate damage

SAR to shutoff gas

SAR 1

12300 Stanwood

60 YO female

hip injury

Transport

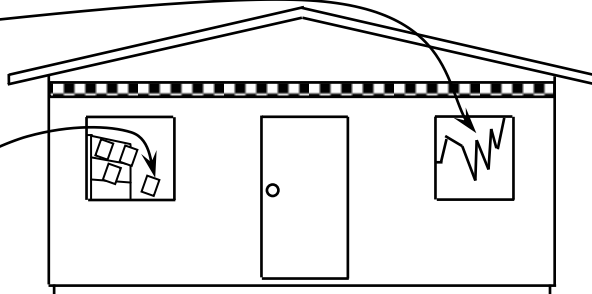
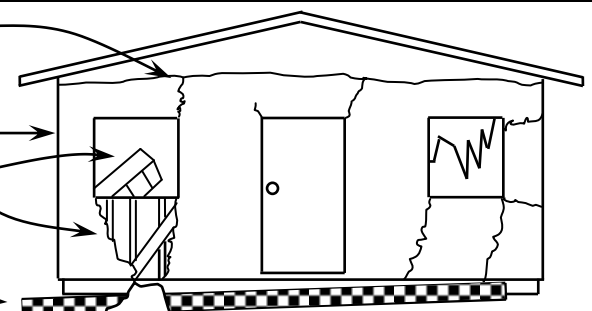
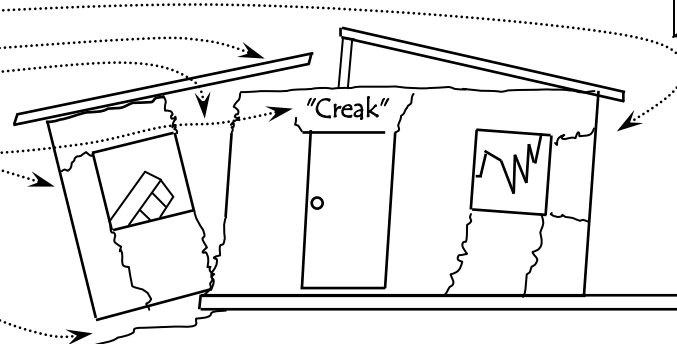
If given an order, write it down, then read it back.

When finished with communication, say "your-function-name CLEAR."

Damaged Buildings.

Building Damage Levels

"Structure Triage"

Structure Damage Levels	
<u>Light Damage</u> Cracked Window(s). (No apparent damage to exterior walls visible from street distance.) (Damage mostly to interior contents.)	
<u>Moderate Damage</u> Cracked Wall(s) visible from a distance (e.g., from the street), <u>but</u>: <u>Not Racked.</u> (Walls square with floor.) <u>No Collapse</u> of walls, floors or roof. Major Internal Debris, (e.g., Toppled Furniture) Fallen Decorative Work.	
<u>Heavy Damage</u> (any of the following:) Tilting or Racked Walls. Collapse of any roof, wall(s) or floor(s). Broken Wall(s). Structural Instability visual or audible. Off Foundation / Ground Failure. Non Structural Hazards: Heavy Smoke or Fire. Leaking Gas. Hazardous Materials. Flooded, Moving or Rising Water.	

Major Damage Survey - Procedure

For each Incident found:

(Fire, Power Line, Gas/Water Main, Road, Building)

1. Record incident in Damage Report.

2. If instructed and safe to do so, Cordon off:

- Downed Power Lines.
- Ruptured Gas/Water Mains.
- Unsafe Roads.
- Hazardous Material Areas, up wind, upstream, uphill.
- Heavily Damaged Buildings.

3. Check & Post (via *Building Survey Sub-Procedure* on next page):

- Moderately damaged building Occupants status.
- Heavily damaged building Occupancy status.

4. Report incident to Command Center via radio or runner.

Building Survey Sub-Procedures

(Moderate and Heavily Damage Buildings)

1) At a Moderately Damaged building, Check Occupants.

Knock & shout,

"This is your Emergency Response Team. Are you OK?"

Listen for tapping or cries of "Help". If heard, goto 3.

If answered, ask if all OK. If help requested, goto 3.

If not answered,

2) At Heavy/unanswered-Moderate Damaged Bldg, Check Occupancy.

Inquire of occupants whereabouts at neighbors.

If occupants known to be away, record in Damage Report, goto 4.

3) Record incident in Damage Report and report it to CC.

4) Record damage level & findings on Building Marker & post.

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. Moderately Damaged - One slash. Heavily Damaged - Both slashes.

Search & Rescue Marker

Team 1

Date: _____ Time: _____

Usual occupants: _____

Suspected now: _____

HHA Signed? _____

Team 2

Hazards:

Dog: Yes No

Hazmat: Yes No

Power line: Yes No

Electricity: On Off

Nat.Gas: On Off

Water: On Off

Team 3

Community
Emergency
Response
Team

Left In

Team 4

OK: _____

Injured: _____

Trapped: _____

Dead: _____

Not Searched: _____

Building Marker

At Moderate and Heavily Damage Buildings, fill in:

Structure Damage section

Mark damage level: "X" for Heavy. "I" for Moderate.

Search & Rescue Marker section

1. Fill in:

- *Name of CERT* investigating.
- *Date. Time.*

2. If contact made with neighbor,

- Fill-in number of *Usual Occupants*, and *Suspected Now*.

3. If building is un-occupied, (neighbor knows occupants were away)

- Mark both *S&R slashes*, indicating "No Search required".

4. Cordon off property to warn against entry.

Post Building Marker



Post on Left side of Driveway Apron (Ramp).

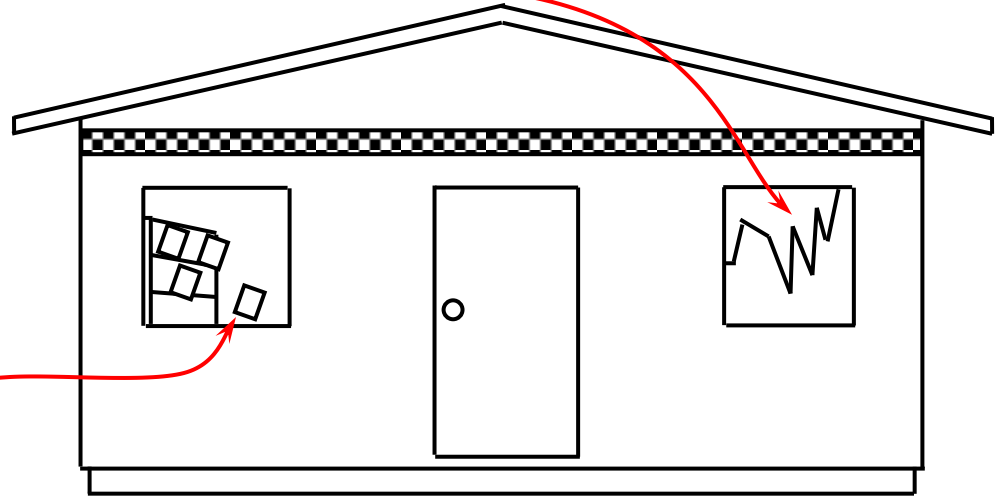
Damaged Building Examples

Lightly Damaged Building

Cracked Window(s).

(No apparent damage to exterior walls visible from street distance.)

(Damage mostly to interior contents.)



**Normally not reported during
Major Damage Survey
with two exceptions.**

Lightly Damaged Building

Broken Windows.



Lightly Damaged Building

Damage mostly to interior contents.



Lightly Damaged with Special Conditions

Special Condition - Many Broken Windows.



Report as "Moderately Damaged".

Lightly Damaged with Special Conditions

(Can you see the Special Condition?)



Lightly Damaged with Special Conditions

Special Condition = Chimney Fell into house.



Report as "Moderately Damaged".

Moderately Damaged Building

Cracked Wall(s)

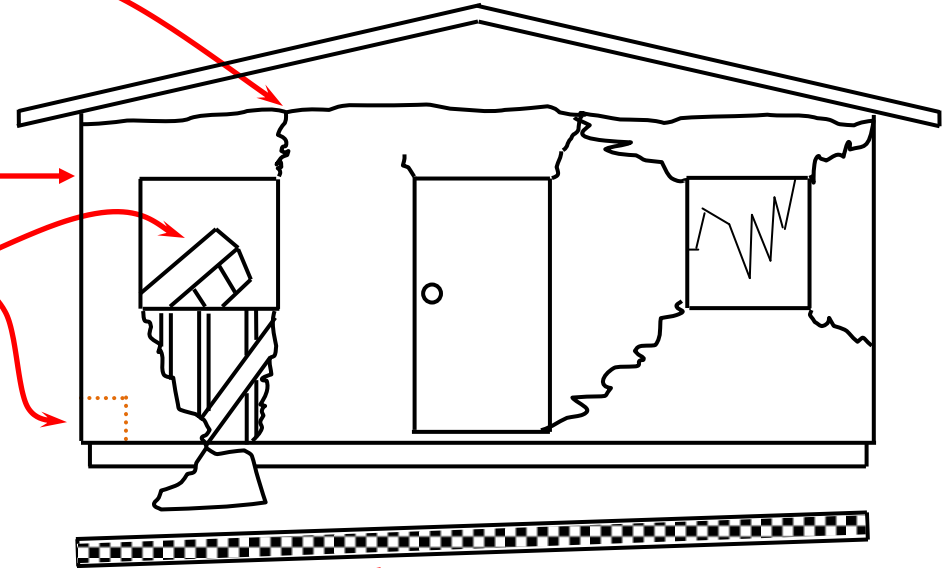
visible from a distance (the street), but:

No Collapse of walls, floors or roof.

Not Racked. (Walls square w floors.)

Major Internal Debris,
(e.g., Toppled Furniture, fallen plaster.)

Fallen Decorative Work.



Moderately Damaged Building

Broken Walls.



Fallen Decorative Work.



(Building is actually a Searchable Heavy;
- Off foundation, but not Racked.)

Moderately Damaged Building



Moderate (or Heavy).



Heavily Damage Building/Section

Obvious Structural Instability.

Any of the Following:

Un-Reinforced Masonry Building [brick w king rows, arched openings, recessed windows & doors]

Racked (Walls not square w floor.)

Any Collapse

Roof, wall(s) or floor(s).

Broken Wall(s)

Out of Column

Tilting.

Unstable footing.

Shear panel loss > 20%.

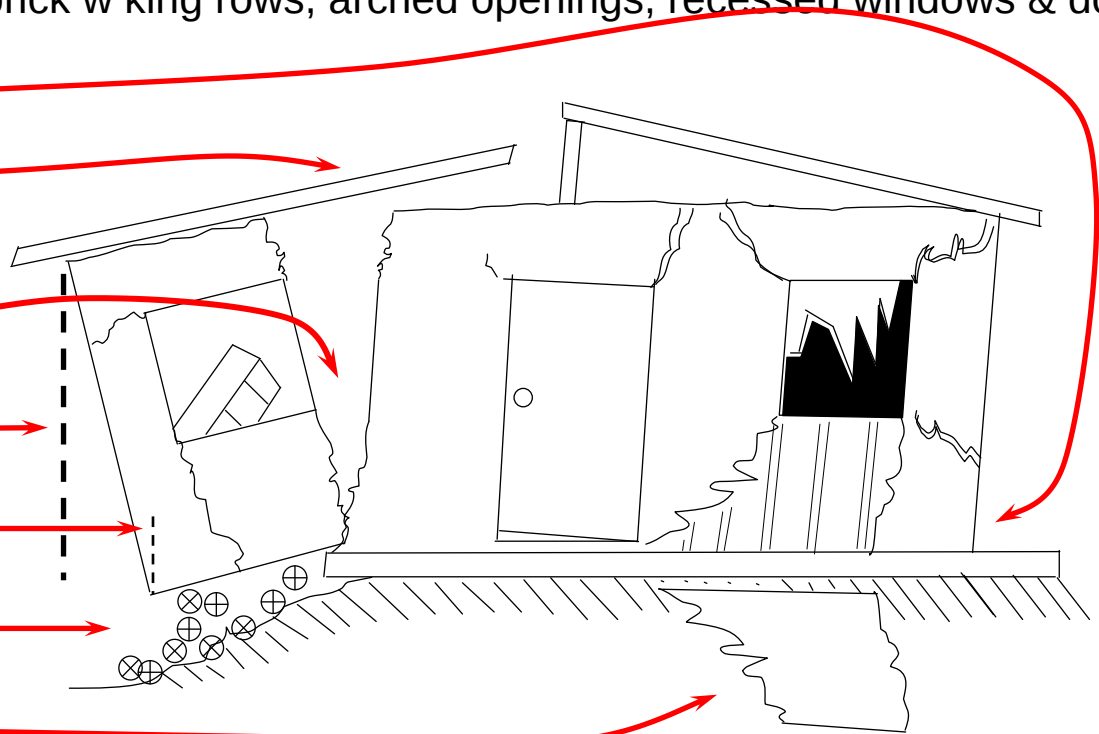
Non Structure Hazards:

Heavy Smoke or Fire.

Leaking Gas.

Hazardous Materials.

Flooded, Rising or Moving water



Un-Reinforced Masonry Building (UMB)



Heavily Damage Building



Heavily Damage Building



Searchable Section of Heavily Damage



Searchable Section of Heavily Damaged



Heavily Damage Building

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

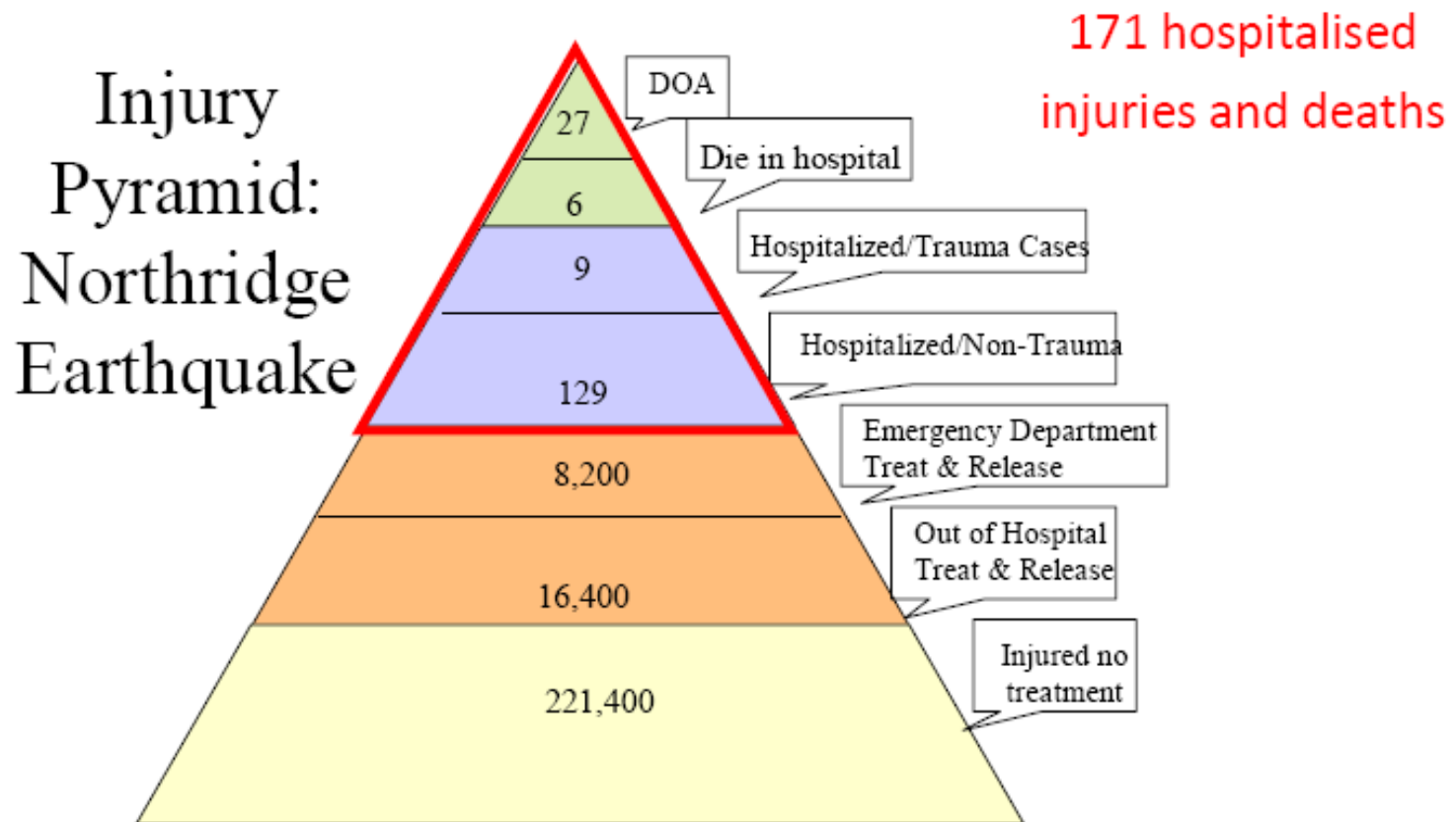


Light Damage Investigation

Light Damage Investigation

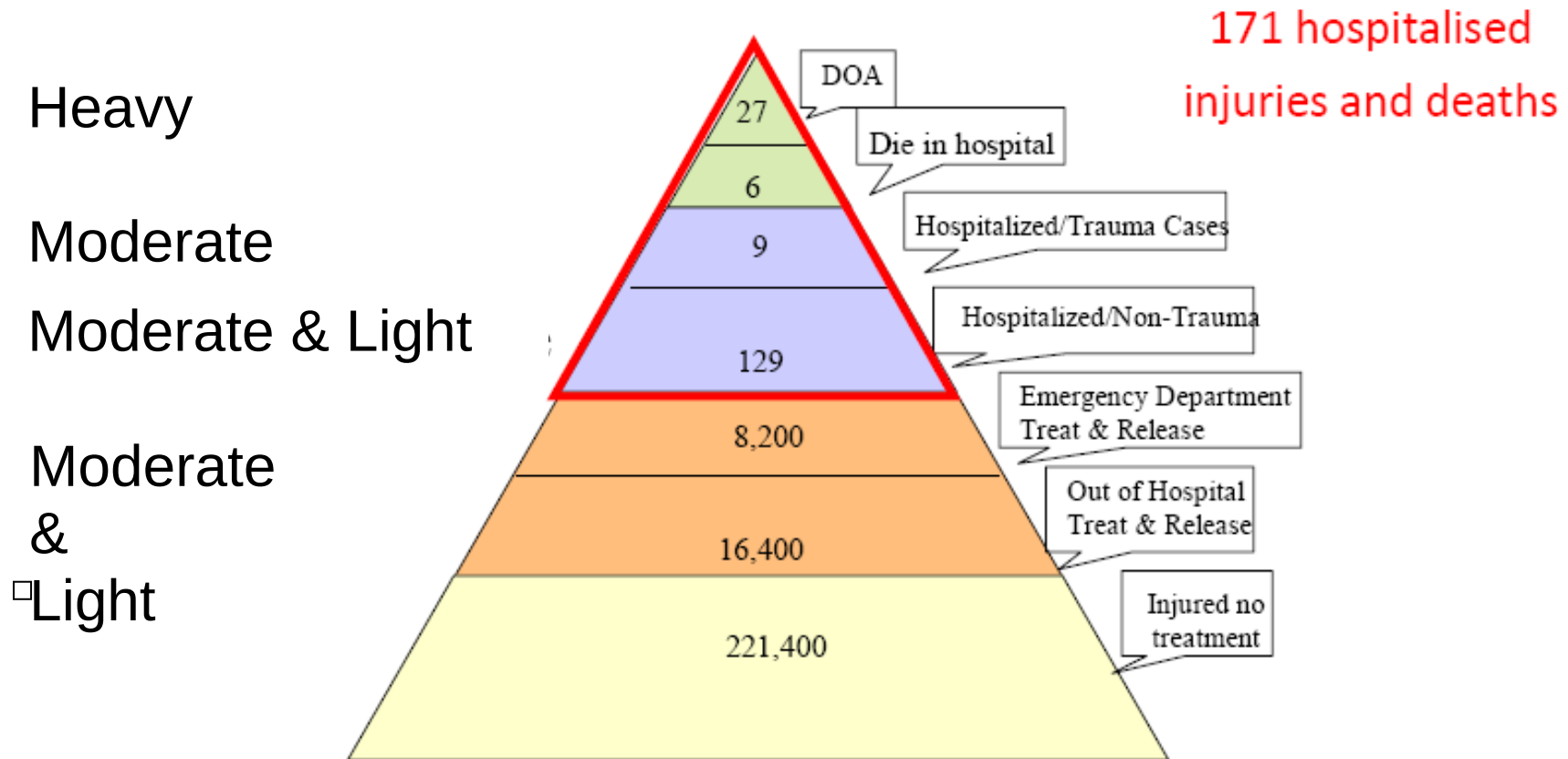
- What:** Door-to-door investigation
Looking for injured or trapped
in Light and Non-damage buildings
not displaying “We’re OK” sign or White Flag.
- Where:** Assigned Streets or Blocks.
- When:** After Major Damage Survey.
- Why:** Because earthquakes injury people in buildings
which may not look damaged.

Epidemiology of Earthquakes.



Injury by Type Structure Damage

Injury Pyramid: Northridge Earthquake

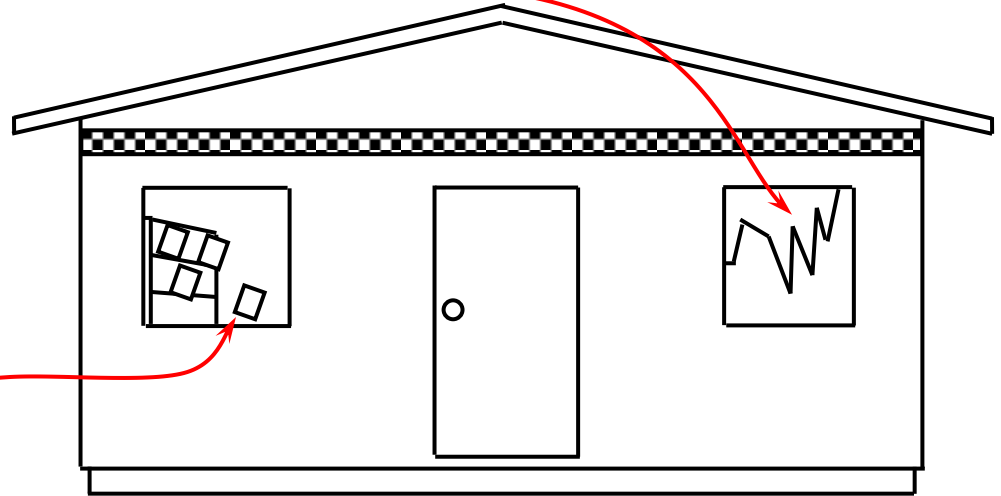


Lightly Damaged Building

Broken Window(s).

(No apparent damage to exterior walls visible from street distance.)

(Damage mostly to interior contents.)



Lightly Damaged Building

Broken Windows.



Lightly Damaged Building

Damage mostly to interior contents.



Light Damage Investigation



Damage Survey Procedure

(Lightly Damage Buildings)

1) Check Occupants for injuries.

Knock & shout,

"This is your Emergency Response Team. Are you OK?"

Listen for tapping or cries of "Help". If heard,

If answered, ask if all OK. If help requested,

If not answered, 

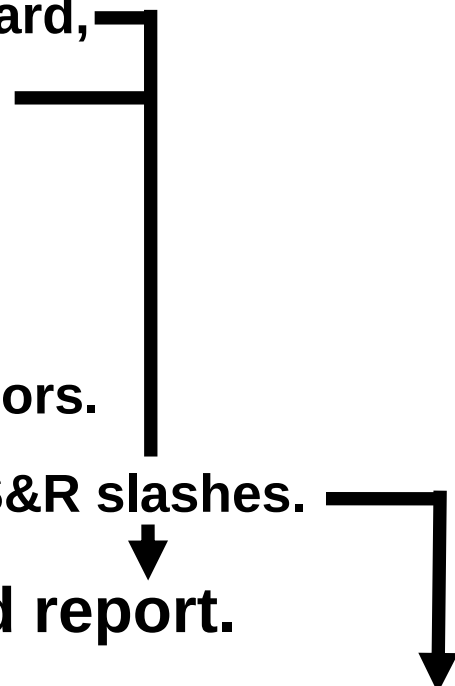
2. Check Occupancy.

Inquire of occupants whereabouts at neighbors.

If occupants known to be away, mark both S&R slashes.

3. Record incident on Damage Report and report.

4. Record damage level & findings on Building Marker & post.



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. Moderately Damaged - One slash. Heavily Damaged - Both slashes.

Search & Rescue Marker

Team 1

Date: _____ Time: _____

Usual occupants: _____

Suspected now: _____

HHA Signed? _____

Team 2

Hazards:

Dog: Yes No

Hazmat: Yes No

Power line: Yes No

Electricity: On Off

Nat.Gas: On Off

Water: On Off

Team 3

Community
Emergency
Response
Team

Left In

Team 4

OK: _____

Injured: _____

Trapped: _____

Dead: _____

Not Searched: _____

Building Marker

Structure Damage section

Leave blank indicating "Light Damage".

Search & Rescue Marker section

1. Fill in: *Name of CERT* investigating. *Date*. *Time*.
- 2.a. If contact made with occupant(s),
fill-in number of occupants *Left In: OK, Injured, Trapped, Dead*.
- 2.b. If contact made with neighbor (no response from occupants),
fill-in number of *Usual Occupants*, & *Suspected Now* (if known).
3. If building is un-occupied, (neighbor knows occupants were away)
or no occupant needs help,
mark both *S&R slashes*, indicating "No Search required".

CERT Field GuideBook

is your Field Desk

The diagram shows an open book with two pages. The left page is titled 'Task Guide Checklist' and the right page is titled 'Form to Use'. The left page has a section for 'X. Manage' with 'Input' and 'Output' columns, and a 'Procedure' section with three checkboxes. The right page has a section for 'INCIDENT No. ___ Location' with a 'Map' column, and an 'Assignment' section with a table for 'Incident Mgmt Task' and 'Procedures'. Below this is a table with three columns: 'Resources', 'Assignment Status', and 'Casualties'.

Task Guide Checklist	
X. Manage	
Input	Output
Responsibilities:	
Procedure:	
☐	
☐	
☐	

Form to Use		
INCIDENT No. ___ Location	Map	
Assignment.		
☒ Incident Mgmt Task	Procedures	
Resources	Assignment Status	Casualties

Next Step

1. Review CERT Field GuideBook.

- Preface
- Phase 1. Initial Response
 - Task 1. Individual Response at Home or Business.
 - Task 2. Block Damage Survey.
- Section 3. Response Team Procedures.
 - Task a. Area Damage Surveys.
(Covers Major and Light Damage Surveys.)

2. Prepare your **Ready Bag**.

- CERT Field GuideBook (or Damage Survey Team Guide below).
- Clipboard.
- Damage Report Forms (extra copies).
- Pen (preferably lighted).
- High-power Flashlight.
- Extra batteries.
- Water, Energy bars.
- Helmet & Vest

Damage Survey Team Guide starts on next page.

Damage Survey Team Guide

(Make extra copies of forms.)

2. Block Damage Survey.

Input:

- Personal Gear (helmet, vest, goggles, mask, gloves, boots, ID).
- Damage Report form (next page and page **Error! Bookmark not defined.**).
- Your **CERT Field GuideBook**.

Output:

- Incidents on your block noted in Damage Report.
- Damage Report(s) given to Damage Assessment Officer at Command Center.

Procedure:

- ☐ **Get your Personal Gear.**
- ☐ **Drive or walk through your block (or assigned area)** on your way to the pre-designated Command Center.
- ☐ **List obvious major incidents** (all but Lightly Damage Buildings) in the Damage Report form (next page). Enter Address, Structure Type involved. Check (✓) type of incident, For Gas or Water pipe breaks, if large and in the street, enter "M" for Main. Else enter "L" for Line to a building.
- ☐ **At Moderate or Heavily Damaged buildings** (see *Structure Damage Levels* below), indicate number of Occupants likely inside now if known based on your knowledge of your neighbors' work or vacation schedules.
DO NOT ENTER BUILDINGS. DO NOT STOP TO TALK. Injured, Trapped & Dead are not determined now.
- ☐ **When finished surveying your block go to Command Center.**
- ☐ If you are one of the first five CERT members to arrive at the Command Center, Perform task **Error! Reference source not found.** on page **Error! Bookmark not defined.**

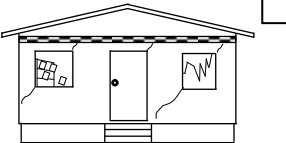
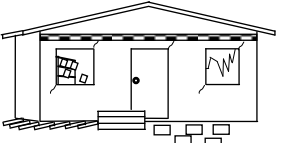
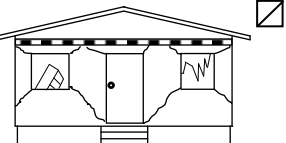
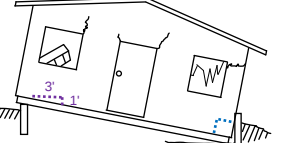
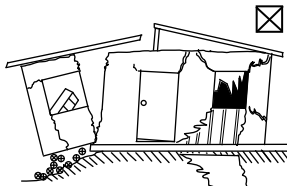
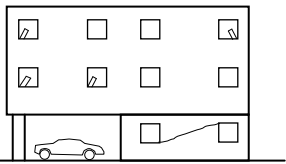
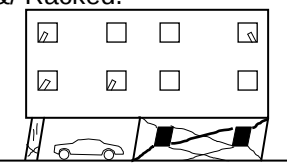
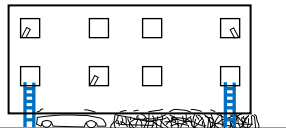
Otherwise,

- ☐ **Give Damage Reports to Damage Assessment.** (Check posted Command Center Roster to see who this is.)

If you do not need to go home to care for family members,

- ☐ **Log in for duty and report your Skills to Planning or to Staging Officer** as directed by Damage Assessment.
- ☐ **Go to the Staging Area** to await assignment. **Review Procedures for your Skill(s)** in **GuideBook** Sections 2 or 3.

Structure Damage Levels

Damage Level:	Light	Moderate	Heavy	Collapsed
Type Building	Damage			
- Stucco on Wood Frame:	Broken Windows. (Any wall cracks are unidirectional & <1/8".)  Cripple wall /masonry Foundation failure. (Pre1940) 	Broken Walls. (Cracks are bidirectional &/ wider &/ offset ≥ 1/8".)  Tilting <20° (<1' drop in 3') but walls are still square. 	Shearing fallen/detached. Racked. "Creaking". Floor/wall/roof separation. Any collapse. Fire. Flood. Ground failure. HazMats. Heavy Gas or Smoke. In the Collapse Zone of a collapsing building. 	
- Un-retrofitted Soft-1 st Story Building: (Assume un-retrofitted unless known.)	No Low-Risk state. After-shocks could be closer, therefore stronger. Evacuate at least the "soft" story via bullhorn. Suggest that all occupants evacuate.	Any exterior wall damage. 	Cracks wider/offset ≥ 1/8" &/ Racked. 	Facilitate evacuation via ladders. 
Sources:	Post-Disaster Safety Assessment program (SAP) Evaluator Training; 2014; California Office of Emergency Services (Cal OES) Case Studies in Rapid Postearthquake Safety Evaluation of Buildings; Applied Technology Council ATC-20-3. Northridge Earthquake Summary Report - Residential Buildings; EQE International Classifications of structural types and damage patterns of buildings for earthquake field investigation; Journal of Structural Engineering			

* Conditions shown are the maximum allowed for a Damage Level. Any one higher condition qualifies for the higher Level. Different sections/wings may incur different damage.

Damage Report

Date:	Area Map / Diagram
Time:	
Person Reporting:	

[illegible]

Damage Report

Date:	Area Map / Diagram
Time:	
Person Reporting:	

[illegible]

a. Area Damage Surveys

Input:

- Vests, Helmets, comfortable closed-toe walking shoes.
- Damage Report form(s) listing assigned blocks/area.
- Building Markers (p.61) for no. of buildings assigned.
- Felt-tip marker, pen and pencil. Tape (e.g. painters tape).
- FRS or GMRS Radio, if available.
- Gas shutoff wrench.
- Flashlight, high power.

Output:

1. Assigned blocks/areas checked for incidents.
 2. Lightly damaged buildings checked for casualties.
- Damage Report(s) to Damage Assessment, or to Damage Survey Leader if assigned.
 - Incidents found, occupants needing assistance, if any.
 - Building Marker posted at each building investigated so Fire Department can see Marker from the street.

Survey Procedures:

Major-Damage Survey. Windshield survey, recording on Damage Report (p.15) & reporting to Command Center any: Fires, Power Lines down across streets/roads, HazMat Leaks, Gas/Water Main ruptures, Unsafe Roads, and at - Heavy damaged buildings*: **Check Occupancy**, report findings, post Building Marker (p.61), continue survey.
- Moderate damaged buildings*: **Check Occupants**, report findings to CC, post Building Marker (p.61), continue survey.

Light-Damage Investigation. Building-by-building sweep. **Check Occupants** at each Light*/non-damaged building not displaying a "We're OK" sign or white flag. If casualties, record in Damage Report, post Building Marker, report to CC.

Re-survey. Redo Major Damage Survey after each damaging secondary event (major aftershock) looking for new major incidents, including previously-posted Lightly damaged buildings with occupants now Moderate/Heavy.

- * **Light Damage** = Cracked windows. (No exterior wall cracks visible from street or 30', i.e. no cracks < 1/8").
- Moderate Damage** = Cracked walls. Many wall cracks visible from a distance (e.g. wider and/or offset ≥ 1/4").
Or Light damage with most windows broken, chimney fell inside building or elderly residents.
- Heavy Damage** = Everything else (tilting, partial or total collapse, off foundation, heavy smoke or gas fumes.)
(See **Error! Reference source not found.**, page **Error! Bookmark not defined.**, for illustrations.)

Building Sub Procedures:

Check Occupants of a Moderate or Lightly damaged building.

- **Go to front door, checking for hazards** before and as you approach, especially loose overhead glass and plaster.
- **If gas smelled**, shut gas off or request a S&R Team to do. Go to **Check Occupancy** below.
- **Knock and callout**, "This is your Emergency Response Team. If you can walk, come to me. If not, yell or make noise."
(Call occupant by name if you know it, or call "Occupants of __address__".)
- **If no answer**, go to **Check Occupancy** below.
- **If answered**, ask if all occupants are accounted for and OK.
 - **If casualties**, enter number Injured, Trapped &/ Dead on Building Marker and in Damage Report by age category.
Ask if help from CERT, "a non-labile volunteer organization", is wanted and accepted. Record in Damage Report.
Report all information to Command Center via cell phone/radio/runner, or send an occupant.
 - **If all "OK"**, mark both **S & R slashes** ("X") on Building Marker and enter number of occupants **Left In OK**.
 - **Enter CERT name, Date and Time** in S & R section of Building Marker and **circle any Hazards** discovered.
 - **Post** or chalk-draw Building-S&R Marker near street. (Return to assigned Survey procedure above.)

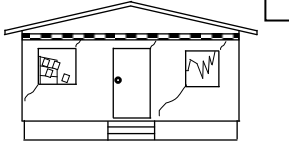
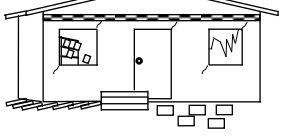
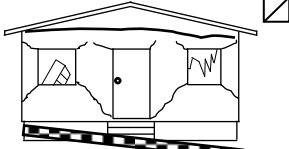
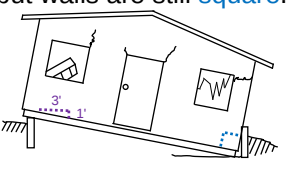
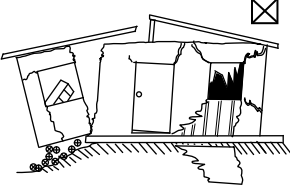
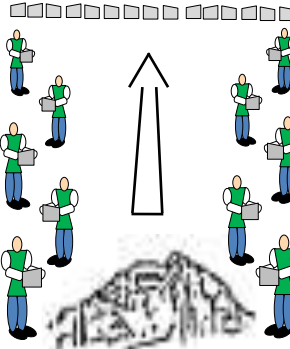
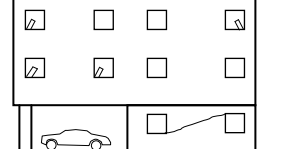
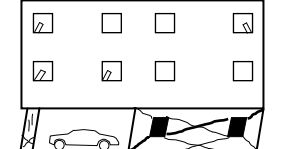
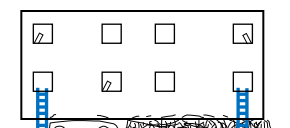
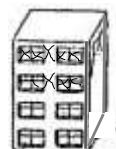
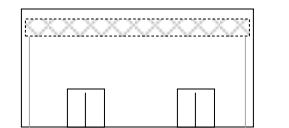
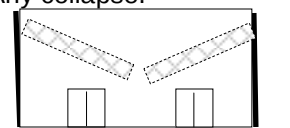
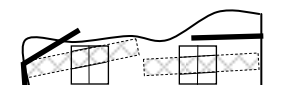
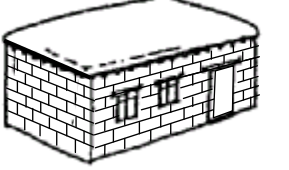
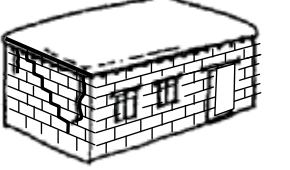
Check Occupancy status of a Heavy or non-responding Light or Moderately damaged, or gas-filled building.

- **Check** with up to 3 nearest neighbors re. **whereabouts** of building's usual occupant(s).
- **If occupant(s) are known to be away**, enter "0" in each **OCCUPANTS** (type) sub-field in Damage Report.
 - Enter "0" in *Suspected now* field of Building Marker. Mark both **Search & Rescue** slashes.
- **If occupant(s)' whereabouts are unknown/undeterminable** (assume they could be inside the damaged building),
 - Enter number of *Usual occupants* & *Suspected now* on Building Marker, and by type (adult, child, elderly) in Damage Report.
 - If a neighbor has a key, note on Building Marker as "See man/woman at __address__".
 - Report incident to Command Center, giving number & type of occupant(s) (adult, child, elderly) possibly inside.
- **Mark 1 slash for Moderate damage, both for Heavy damage** in **Structure Damage** section of Building Marker.
- **Enter CERT name, Date and Time** in S & R section of Building Marker.
- **Post** or chalk-draw Building-S&R Marker near street. (Return to assigned Survey Procedure above.)

Survey Wrap Up.

- ☐ Return to Command Center when all buildings/units assigned for this survey phase have been surveyed.
- ☐ Give Damage Reports to Damage Survey Leader, if one, or to Damage Assessment Officer.
- ☐ Return to Staging Area.

Building Damage Levels

Damage Level:	Light	Moderate	Heavy	Collapsed
Rescuer Risk:	Low	Medium	High	Medium
Will Likely be Tagged:	Inspected (Habitable)	Restricted (Possession retrieval only)	Unsafe (No entry)	Unsafe Area (Caution)
Objectives: (See Caution below.)	Triage victims. Evaluate & Treat casualties inside.	Search & extract victims if <u>you</u> think it safe to do so. Triage, evaluate & treat.	Evacuate via bullhorn. (Provide escape ladders.) Cordon off.	Extricate live victims by removing debris. Triage, evaluate & treat.
Conditions by Building Type:	Conditions below are those observable from the exterior and are the maximum allowed for a Damage Level. Any one higher condition qualifies for the higher Level. Different sections/wings may incur different damage.			
- Stucco on Wood Frame:	Cracked Windows. (Any wall cracks are unidirectional & <1/4".)   Cripple wall /masonry Foundation failure. (Pre1940)	Cracked Walls. (Cracks are bidirectional & wider &/ offset $\geq 1/4$ ".)   Tilting <20° (<1' drop in 3') but walls are still square.	Broken (Shear) Walls. Racked. "Creaking". Floor/wall/roof separation. Any collapse. Fire. Flood. Ground failure. HazMats. Heavy Gas or Smoke. In Collapse Zone of a collapsing building. 	Wood frame buildings rarely collapse. Use the following for <u>completely</u> collapsed buildings. 
- Un-retrofitted Soft-1 st Story Building: (Assume un-retrofitted unless known.)	No Low-Risk state. After-shocks could be closer, therefore stronger. Evacuate at least the "soft" story via bullhorn. Suggest that all occupants evacuate.	Any exterior wall damage. 	Cracks wider/offset $\geq 1/4$ " &/ Racked. 	Facilitate evacuation via ladders. 
- Reinforced Concrete Post & Beam or Slab:	Damage only to contents. 	Hairline cracks in infill walls/glass between posts 	Fallen infill walls. R-Bar exposed (Spalling). 	Avoid! Posts may fall. Search by removing debris from edge of pile 
- Concrete Tilt-up: (Big-box warehouse stores. Playa Vista office bldgs.	No Low-Risk state. After-shocks could be closer, therefore stronger. Evacuate via bullhorn.	No cracks. Damage only to contents. 	Any cracks, especially near corners and roof. Any collapse. 	Avoid any standing walls! They may fall outward & throw debris 1.5 times the remaining wall height. 
- Masonry: (Must assume unreinforced as R-Bar would not be visible.)	(No-Low Risk state. Aftershocks could be closer and stronger.)	Damage only to contents. 	Any cracks. 	Extricate by uncovering. Do not crawl under! 
Caution:	While Aftershocks on the originating fault are generally weaker than Main shocks, Moderately damaged buildings have collapsed when a Aftershock occurred on a fault closer to the building than the Main shock. Therefore you may want to also avoid Moderately damaged buildings following Major or Great quakes.			
Sources:	Post-Disaster Safety Assessment program (SAP) Evaluator Training; 2014; California Office of Emergency Services (Cal OES) Case Studies in Rapid Postearthquake Safety Evaluation of Buildings; Applied Technology Council ATC-20-3. Northridge Earthquake Summary Report - Residential Buildings; EQE International Classifications of structural types and damage patterns of buildings for earthquake field investigation; Journal of Structural Engineering			

Damage Report

Date:	Area Map / Diagram
Time:	
Person Reporting:	

[illegible]

Damage Report

Date:	Area Map / Diagram
Time:	
Person Reporting:	

[illegible]

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. Moderately Damaged - One slash. Heavily Damaged - Both slashes.

Search & Rescue Marker

Team 1

Date: _____ Time: _____

Usual occupants: _____

Suspected now: _____

HHA Signed? _____

Team 2

Hazards:

Dog: Yes No

Hazmat: Yes No

Power line: Yes No

Electricity: On Off

Nat.Gas: On Off

Water: On Off

Team 3

Community
Emergency
Response
Team

Left In

Team 4

OK: _____

Injured: _____

Trapped: _____

Dead: _____

Not Searched: _____