

05

OPERATIONAL SAFETY

Lecture: 02 Lectures



LESSON OBJECTIVES

**Upon completion of this lesson,
you will be able to:**

1. List at least five dangers a rescuer faces in a CSSR operation.
2. Identify unsafe actions and unsafe conditions.
3. Identify the CSSR Course safety rules.
4. List at least three safety concerns for each phase of a CSSR operation.
5. Describe the function and importance of having a Safety Officer in a CSSR squad.
6. Identify the four parts of a CSSR safety plan and briefly describe each one.
7. Describe the purpose of the Safety Briefing and list its eight components.

1**Safety in a CSSR Operation**

CSSR operations are the most _____ and _____ activities that first responder teams face in the line of duty. There may be numerous factors affecting safety during a CSSR operation, as shown below.

Notes**Factors Affecting CSSR Operational Safety**

2

Operational Standards Follow established formats when working.

Notes

- The use of tools as they were designed to be used
- Let the tool do the work
- Train the way you will be expected to work
- Train with different tools in confined spaces

Safety Rules

- Rules are established to minimize injuries and death
- Rules must be followed
- There should be consequences if rules are broken

3

Safe and Unsafe Actions and Conditions

Safe actions and conditions

- Wearing PPE
- Working in pairs/teams
- Using tools correctly

Unsafe actions and conditions

- A wall beginning to lean
- Overhead structures showing signs of imminent collapse
- Weather conditions (high wind, rain, lighting)

Due to the risks associated with the use of tools and equipment and the environmental conditions under which the CSSR Course is conducted, all persons involved in any manner with the course **MUST** follow the safety rules outlined below.

4.1 Practice areas: No one is allowed to enter the practice areas without explicit prior authorisation from the instructor in charge or the Course Coordinator.

4.2 Personal protective equipment: Anyone entering the practice area must be wearing (in the correct manner) **all** required personal protective equipment described in Lesson 1 (Course Introduction).

4.3 Hygiene: To reduce as much as possible the possibility of contamination or contagion, **you must wash your hands** with soap and water before and after entering the work area; before and after eating; and before and after using the bathroom.

4.4 Safety officer: During the exercises and practicals, one individual from the Course personnel will be the designated safety officer and will be clearly and visibly identified. This person will be in charge of all safety-related matters throughout the entire course, and will have the authority to partially or completely halt all activities if needed.

CSSR Course

Safety Rules 4.5 Group safety: Each instructor and team leader will also be responsible for the safety of the people in their respective groups. Should you observe any unsafe action or condition, or an emergency, immediately alert the Safety Officer. For this purpose, everyone will receive an emergency whistle to use in an emergency.

4.6 Whistle signals: The Safety Officer will use the whistle to give alarm signals and alerts in the work area using the following signal system:

- **One long signal:** stop all work and listen for instructions.

- **One long, one short:** continue working.

- **Three short signals:** alarm signal, evacuate the area immediately to a previously designated safety zone.

4.7 Safety Zone: The Safety Officer will establish a safety zone near the work area. The safety zone will be used in case of any emergency requiring immediate evacuation of the work area.

CSSR Course**Safety Rules 4.8**

Emergency medical services: A medical first responder kit and a means of communications must be made available to ensure EMS arrival within 15 minutes, should the need ever arise.

Notes

4.9 Fire extinguisher: A portable 20-pound (9-kilo) dry-chemical fire extinguisher will be available in case of fire. You must be aware of its location during the course, especially when refuelling or lubricating equipment used in this course.

4.10 Drinking water: During all practical exercises you must carry a canteen or drinking bottle filled with drinking water, to prevent dehydration. A water container for all participants will be available near the work area.

4.11 Maintenance: You are responsible for maintaining all tools, equipment and accessories. Instructions and standards for maintenance are described in their respective manuals. Additionally, the instructor in charge of each particular exercise or practical session may provide instructions for maintenance.

**CSSR Course 4.12 Rotations:
Safety Rules
(Cont.)**

Each work group must complete personnel rotations as directed by the Safety Officer. Under normal conditions, rotations will be every 15 minutes, but weather may be a factor.

Notes

4.13 Trash: All trash must be placed into designated trashcans or waste containers. No littering is permitted.

4.14 Smoking and drinking: No smoking or drinking is allowed in the active work area.

4.15 Weather conditions: The Safety Officer will decide whether exercises can continue in the work area during adverse or threatening weather.

4.16 Safety markings: All objects or areas in the work area that may pose a hazard to anyone must be marked with scene tape or safety cones.

CSSR Course 4.17 Team safety:
Safety Rules
(Cont.)

All operations involving the use of tools and equipment must be conducted in pairs, so that one person can use the tool or equipment while the other acts as a safety lookout. The safety lookout will use a signal system in which one tap on the shoulder means to stop working, and two taps means to continue.

Notes

4.18 Safety violations: Any participant, who repeatedly violates or disregards the safety rules of this course, endangering him/herself or others, **may be expelled from the course** at the discretion of the Course Coordinator. No certificate or letter of attendance will be issued in this case.

4.19 Miscellaneous: The Course Coordinator will resolve any other safety issue not specifically covered in the CSSR Course Safety Rules

Additional notes on safety

Safety Considerations during Mission Phases

Notes

- The CSSR _____ is responsible for the safety of his team members.



- Because there is no one person in a CSSR team designated as a Safety Officer, every team member must remain acutely aware of safety at all times and look out for each other.

- All CSSR team members are responsible for giving warning about and preventing unsafe actions and/or conditions during all phases of a CSSR operation.

5.1 Preparation Phase

- 5.1.1 Cultivate a positive attitude toward safety in your team members during class time and practical exercises. Understand safety as a vital component of ensuring we stay alive.
- 5.1.2 Safe procedures and protocols. Ensure the safety and well being of our team mates as well as of those we seek to help (there is nothing worse than a rescuer needing rescue).
- 5.1.3 Equipment maintained proper operation, cleaning and packing. Equipment should be exercised every three to four months.

**Safety
Considerations
during Mission
Phases**
(Cont.)

5.1.4 Personnel should be well trained, knowledgeable and experienced. They should be prepared physically and mentally. Personnel should maintain current health records and keep shots up to date.

5.1.5 Trained and skilled in the equipment and techniques that they will be using.

5.1.6 Information well informed of administrative procedures, functions and problems that may arise. Also kept up to date on what is happening at the disaster site if possible.

Notes

5.2 Activation and Mobilisation Phase

5.2.1 Establish safety procedures and practices from the start of mission.

5.2.2 Emphasise safety during briefings.

5.2.3 Make sure all CSSR team members have complete PPE and are in good mental and physical condition. Everyone must remove rings and all other jewellery to reduce risks.

5.2.4 Ensure safety when boarding or disembarking air transport.

5.3.1 Correctly identify the risks in the following:

- Base of Operations

- Work Area

5.3.2 Include the following in _____:

- Alert and alarm signals

- Escape routes and meeting places

- Designate safety officer, if appropriate.

- Use of identification vests

- Medical facility location and transportation method in case of accident or injury.

5.3.3 Safety guidelines while working on-site:

- Include safety standards in the work plan.

5

Safety Considerations during Mission Phases

(Cont.)

Notes

- Monitor operations and logistical activities for compliance with safety standards.

- Emphasise accounting for personnel.

- Emphasise personnel rotations.

- Monitor personnel for fatigue and stress.

5.3.4

Team leaders must ensure all personnel follow hygiene rules, especially before and after eating.



Washing your hands will help prevent you from contaminating yourself and others

5.3.5

Report and investigate all injuries and accidents.

5.4 Deactivation and Demobilisation Phase

Similar to the Activation and Mobilisation Phase. Emphasise fatigue, stress and post-traumatic stress disorder (PTSD).

Notes

5.5 Post-Mission Activities

As soon as possible, document strong and weak safety points of mission.

5.5.1 Include all info in mission report, including

_____.

5.5.2 Hold post-mission evaluation session with all CSSR team members to evaluate all aspects of mission.

5.5.3 Document how to _____ specific safety procedures.

5.5.4 Provide treatment for PTSD.

5.5.5 Replace all worn or deteriorated PPE and safety equipment.

Definition:

A person in charge of all safety-related matters and has the authority to partially or completely halt all activities, if needed. Responsible in maintaining a safe atmosphere for the CSSR operation.

Function:

- Monitors actions and conditions during all phases of the operation.
- Watch over the entire rescue scene catching potentially dangerous situations and addressing them before they become disastrous.

The person tasked with this responsibility must resist the temptation to become involved in the tactical operations him/herself. This requires extreme self-discipline. Keep in mind that the success of the mission depends directly upon the ability to counteract hazards before they become problems.

- The Safety Officer or Lookout works from a position of safe and _____ just outside of the direct work area.
- This person _____ become involved with the actual "hands-on" portion of the operation. To do so would possibly limit his/her ability to continue being an objective observer capable of identifying _____.
- They should be readily identifiable to all, by their radio designation and by wearing a "Safety Officer" vest or, in a small group, identified during the safety briefing.

6.1 Categories of Safety Officer

- **Overall** Safety Officer for the entire CSSR operation.
- **Site-Specific** Safety Officer is responsible for a working rescue.
- **Special Hazards** Safety Officer is a person or a team assigned to a specific location to monitor a special hazard. This could be one person designated to stand guard over an electrical box while rescue workers operate in a confined space, or a two-person team assigned to hike up-slope to serve as early warning for rescuers working below a dam during earthquake aftershocks.

The multi-hazard safety plan is a guide to the basic elements of safety for a variety of incidents. The acronym used is **LCES**, which stands for **Lookouts, Communications, Escape Routes, and Safe Zones**. In any operations scenario these areas must be addressed to ensure the safety and accountability of all response team members.

7.1 Lookouts

This is normally the function of the dedicated Safety Officer. That person is the objective observer not involved in the _____ portion of the operation. They are dedicated to watching over the entire operation identifying potentially dangerous situations and addressing them before they become disastrous.

7.2 Communications

The Communications Specialist develops the formal communications plan. This plan will identify the Command, tactical and special radio channels. These are the operations personnel's _____ to the outside for resources, support, and safety. This plan will be provided as part of the Response Team Action Plan.

Remember the Emergency Alert System is to be used in the event of problems at the work site:

| | | |
|-------|-------------------|-------------------------------------|
| — | Cease Operations | 1 long blast (3 second duration) |
| — • | Resume Operations | 1 long and 1 short blast |
| • • • | Evacuate | 3 short blasts (1 second each) |

The method of delivery may vary depending upon the device available. Some examples:

- Placing two radios together, speaker to microphone, and depressing the transmit buttons a loud tone is heard on all other radios tuned to that frequency.

- Air horns, car horns, whistles, the Personal Alert Safety System device and clear text over the radio are all excellent methods for signalling. It is important that during the _____, _____ starting work, identify the specific methods of signalling that will be used at the work site should a problem arise during that operational period.

7.3 Escape Routes

An escape route is a _____ path to an area of safe refuge. The safest method of exiting an area may not be the most direct route.

Some examples:

- After an earthquake, structural columns may still be standing but subject to collapse during an aftershock.

- The most direct route to safe refuge may lie directly in the collapse path of the column. The route giving the column a _____ distance will be the safest.

- Another option is to _____. If the working area has been shored and leaving this area exposes you to a variety of hazards, stay put.

The rescue situation is often dynamic, constantly changing. This can occur because of external forces or because of the rescuer's action. The escape plan should be constantly updated to reflect changes in situation.

- As a new plan is developed, each team member must be made aware of the change in operation. An acknowledgement of understanding must also be received from each team member.

- If the order is not repeated, the new plan is probably not clear to each member of the team. The result can be injury or death.

7.4 Safe Zones

Safe zones, also referred to as "safe havens" are the pre-established _____ of safe refuge, meaning they are safe from hazards. This could be a designated area outside the hot zone or a safe area agreed upon within the hot zone. If the safe zone is within the hot area, rescuers may have to construct that area around the victims and themselves.

Notes

An example of this would be a victim trapped inside a collapsed structure while rescuers crib and shore the immediate area. In this case, the proper response for rescuers would be to hold their position during an aftershock.

Part of the Safety Plan should provide for a designated Safe Zone where a team "head count" is taken. This count should be immediately communicated to the next in the chain of command to provide for _____ % accountability in the event of an emergency.

Components of the Safety Briefing

- Chain of Command
- Identifying the Safety Officer
- Safety Plan (LCES)
- Communication plan
- Medical plan
- Rehabilitation plan
- Special hazards
- General safety messages

POST-TEST | LESSON 5

Operational Safety

ID #

1. List five dangers a rescue specialist faces in a CSSR operation.

2. List one example of an unsafe condition and one example of an unsafe act in a CSSR operation.

Unsafe act: _____

Unsafe condition: _____

3. Name three safety rules to be followed in a CSSR operation.

4. Name the two areas in which safety concerns should be identified during the Operations Phase of a CSSR operation.

5. What is the primary function of the Safety Officer?

6. Identify the four parts of a CSSR safety plan.

7. When should the safety briefing be given? List eight components of the safety briefing.

Collapsed Structure Search and Rescue (CSSR)

CSSR LESSON 5 EVALUATION

Course Location: _____ Dates: _____

Do not write your name on this form. Please complete a copy of this form at the end of every lesson. Your evaluations are very valuable towards improving the course. Please use the ratings below.

| | | | | |
|----------------|-----------|--------------|-----------|----------------|
| 1 VERY POOR | 2 POOR | 3 AVERAGE | 4 GOOD | 5 EXCELLENT |
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|---|---|------------------------------------|--------------------------------------|---------------------------------------|
| Please fill in the required information. | Lesson Number : | Lesson Name : | | |
| | Instructor's Name | | | |
| Use a scale from 1 to 5 as described above to rate the various lesson components. | Lesson Rating (rate 1 to 5) | | | |
| | Content | Instructor | Method | |
| | Workbook | Interaction | | |
| Mark your selection with an "X" | Instruction Level | <input type="checkbox"/> Too basic | <input type="checkbox"/> Appropriate | <input type="checkbox"/> Too advanced |
| | Duration | <input type="checkbox"/> Too short | <input type="checkbox"/> Appropriate | <input type="checkbox"/> Too long |
| | Usefulness | Was this lesson useful to you? | | |
| | <input type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| Rate from 1 to 5 | Overall Lesson Rating Taking all the above into consideration, I rate this lesson: _____ | | | |
| If you need additional space, please use the back of the sheet. | Comments and Observations | | | |

Thank you for your help. Your input is valuable.
Please turn in this completed form to the instructor.

