

LESSON

07

TOOLS, EQUIPMENT AND ACCESSORIES

Lecture: 02 Periods, Practical: 34 Periods

Total : 36 Periods

LESSON OBJECTIVES

**Upon completing this lesson,
you should be able to:**

1. Define tools, equipment and accessories (TEA).
2. List four categories of TEA according to their use.
3. List five power sources for equipment and tools.
4. List the general steps for use and maintenance of tools and equipment (before, during and after their use).
5. Demonstrate in four practical exercises the correct use of TEA.

1

Definitions 1.1. Tools

A tool is a device that is used to perform or facilitate manual or mechanical work, using only the strength of the operator.

Examples:

tin snips, adjustable wrench, sledge hammer

Figure 1 ▶
*Brick hammer
and adjustable
wrench*



Notes

Definitions (Cont.)

1.2 Equipment

A piece of **equipment** is a machine or device that performs a physical task, whose operation depends on an _____ in order to increase work capacity.

Examples:

circular saw, hammer drill, rotary rescue saw

Figure 2 ▶
Chainsaw
and rotary
hammer drill



1.3 Accessories

An **accessory** is a component that _____ or _____ a tool or piece of equipment, and which increases the operator's ability to perform a task.

Examples:

tool belt, drill bits, rotary saw, blade, extension cord

Figure 3 ▶
Carpenter's
apron and
chipping
hammer bit



Notes

Classifying Tools, Equipment and Accessories According to their use

Notes

2.1 Search TEA

Search tools, equipment and accessories are used in _____ for potentially trapped victims and locating them in collapsed structures. They can be used individually or in conjunction with each other.

2.2 Rescue TEA

Rescue tools, equipment and accessories are those used to _____ a structure and gain access to a victim in a CSSR operation (Figure 4).

Figure 4 ►
Rotary rescue saw (K-12) and reciprocating saw



2.3 Operations Support Equipment and Accessories

This category includes all items and devices used to _____ in conducting a CSSR operation and which _____ rescue activities (Figure 5).

Figure 5 ►
Generator and hand-held two-way radios



2.4 Personal Protective Equipment

Personal protective equipment (PPE) is required in order to _____ while working on a CSSR operation. Some basic PPE items are shown below:

Figure 6 ▼

PPE items: work gloves, eye protection and safety helmet



Ear Plug



Dust Mask



Elbow Pad



Knee Pad

Notes



Hard Toe boot

3

Classifying Tools and Equipment According to Power Source

3.1 Electrically-powered

Electric tools and equipment are used to cut, penetrate and break materials.

Examples: circular saws, hammer drills.

*Figure 7 ►
Electric drill and
circular saw*



3.2. Pneumatic (Air-Powered)

Pneumatic tools and equipment use pressurised air to cut, hammer and lift. They can be powered by a motor-driven compressor or pressurised air cylinders.

Examples: pneumatic cutters, breaker hammer and air bag

*Figure 8 ►
Pneumatic
(air) chisel*



3.3 Internal Combustion

These tools use fuel-burning, 2-cycle or 4-cycle motors. These are most commonly cutting tools.

Examples: chainsaw, rotary rescue saw.



Figure 9 ▶
Generator

3.4 Hydraulic

These tools use the same principle as pneumatic tools, using pressurised hydraulic fluids instead of air.



Figure 10 ▶
Hydraulic
bottle jacks

3.5. Other Types

Some tools do not fall into any of the four categories mentioned above. Examples of these include the acetylene torch, come-along, and winch.



Figure 11 ▶
Hoist
(come-along)

Notes

Classifying Tools, Equipment and Accessories

ACCORDING TO USE	
Search	Examples:
Rescue	Examples:
Operational Support	Examples:
ACCORDING TO POWER SOURCE	
Electrical	Examples:
Air Powered	Examples:
Internal Combustion	Examples:
Hydraulic	Examples:
Other	Examples:

General Steps for Use and Maintenance

There are seven general steps you should follow when using any tool or piece of equipment in a CSSR operation. These steps are in addition to the specific instructions for each particular tool or piece of equipment.

Before

1. Put on all required PPE.

2. Verify availability of fuel and power sources.

3. Verify proper operation of tool.

4. Check required accessories for each tool or piece of equipment.

5. Follow all safety rule (course rules and manufacturer's rules).

During

6. Use proper technique when using a tool or piece of equipment.

After

7. Follow proper cleaning and maintenance procedures for each tool or piece of equipment.

Notes

4.1 Tips for Using Equipment

Notes

Follow these important guidelines when using various pieces of equipment:

- Always use the proper bit or blade for the material to be penetrated and make sure that it is firmly installed in the equipment before operating.

- Do not operate a drill until it is in contact with the material to be penetrated.

- Conversely, when operating a rotary saw, bring it up to full speed **before** making contact with the material to be penetrated.

- When drilling, do not stop the drill while the bit is inside the material – doing so may cause the bit to jam in the material. Likewise, do not allow the blade of a rotary saw to come to a stop while cutting material – remove it fully first.

- If a drill bit becomes jammed in the material and you are unable to remove it with normal drill action, **do not** use the whole drill as a lever on the bit – remove the drill from the bit and try to loosen it with hand tools.

4.2 Equipment Monitoring Form

The Equipment Monitoring Form on the following page is as a sample for tracking all activity and usage for a piece of equipment. The Maintenance Log and Use Log portions can be broken out onto separate pages, as those portions can become lengthy. Because the form records maintenance, it is essential from the safety standpoint.

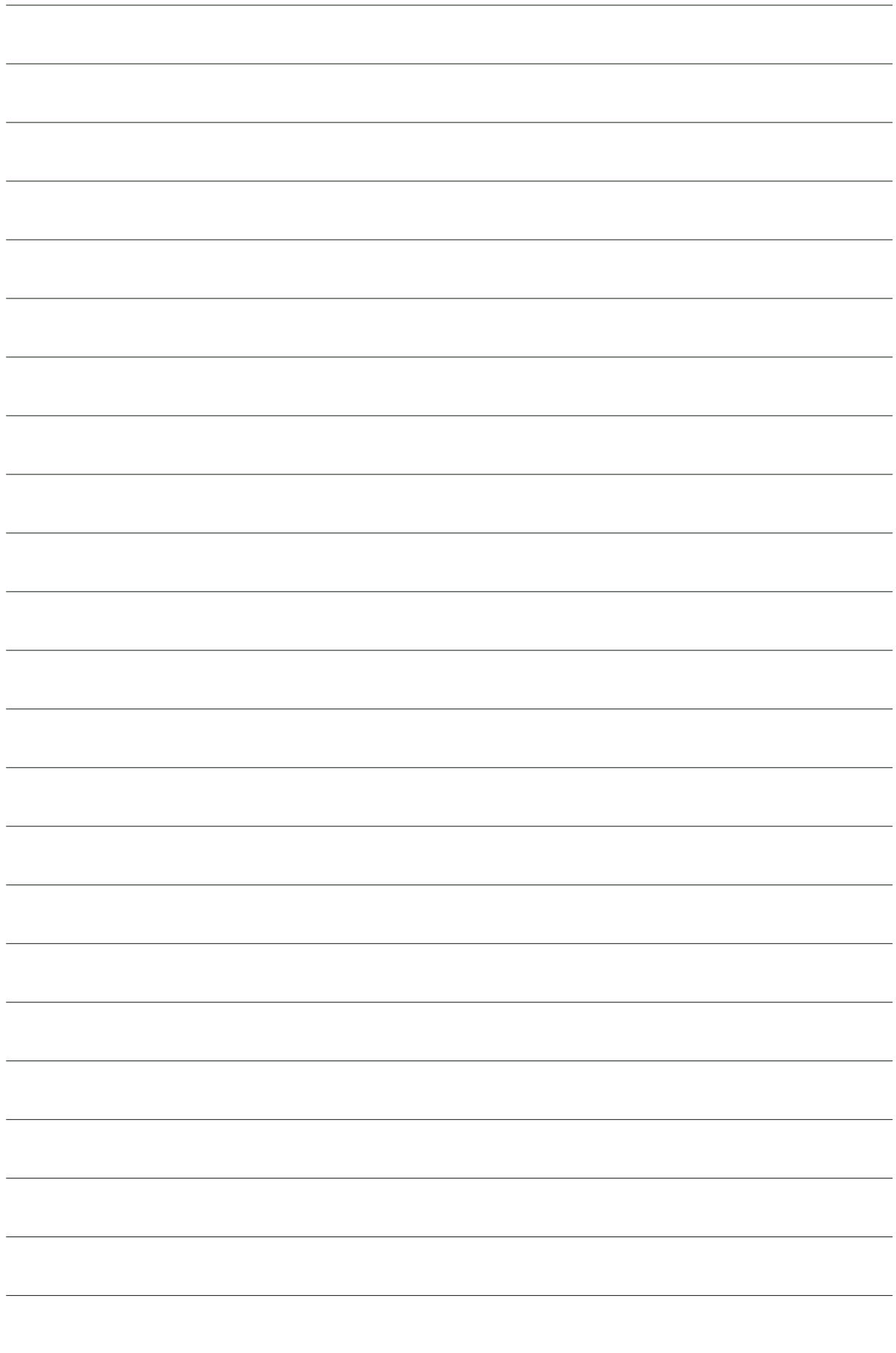
EQUIPMENT MONITORING FORM

Description:			
Model:		Brand:	
Serial #:		ID Tag:	
Cost:		Date of Purchase:	
Repair Company:		Warranty Expiration Date:	
Additional Specifications:			
Accessories:			
MAINTENANCE LOG			
Date	Description of Work Performed	Technician	Labour Warranty Expiration Date
USE LOG			
Date	Amount of Time Used	Operator	Comments

EQUIPMENT MONITORING FORM

(FORM TO BE USED IN THE PRACTICAL EXERCISES)

Description:			
Model:		Brand:	
Serial #:		ID Tag:	
Cost:		Date of Purchase:	
Repair Company:		Warranty Expiration Date:	
Additional Specifications:			
Accessories:			
USE LOG			
Date	Amount of Time Used	Operator	Comments



POST-TEST | LESSON 7

Tools, Equipment and Accessories

ID #

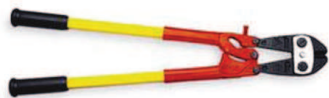




1. Below you will find three definitions for tools, equipment and accessories. Match the correct definition for each term by writing the correct answer in the space provided: (T) for tools, (E) for equipment and (A) for accessories.
- (____)

A device that is used to perform or facilitate manual or mechanical work, using only the strength of the operator.
- (____)

A machine or device that performs a physical task, whose operation depends on an outside power source in order to increase work capacity.
- (____)

A component that supplements or completes a tool or piece of equipment, and which increases the operator’s ability to perform a task.
2. Identify each item pictured below and on the following page, using the name it has been given in this course. In addition, identify it as a tool, piece of equipment, or accessory, by writing ‘T,’ ‘E’ or ‘A’ in the “T/E/A” column.

	Name	T/E/A
		
		
		

	Name	T/E/A
		
		
		
		
		

3. List and describe the steps you should take before starting the item pictured below.



CSSR LESSON 7 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
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? <div style="text-align: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No</div>				
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.

[illegible]

EXERCISE EVALUATION LESSON 7

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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Lesson 7 Tools, Equipment and Accessories Use a scale from 1 to 5 as described above to rate the various lesson components.	Station 1	Station Name: Exercise with Concrete, Block and Brick
	Instructor: _____	
	Station Rating (rate 1 to 5) Instructor ____ Materials ____ Method ____ Location ____	
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	
	Comments and Observations 	
Use a scale from 1 to 5 as described above to rate the various lesson components.	Station 2	Station Name: Exercise with Wood
	Instructor: _____	
	Station Rating (rate 1 to 5) Instructor ____ Materials ____ Method ____ Location ____	
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	
	Comments and Observations 	

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

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