

Summary Report for Individual Task
052-195-1050
Employ Hand Tools in Support of General Construction Labor Tasks
Status: Approved

Distribution Restriction: Approved for public release; distribution is unlimited.

Destruction Notice: None

Foreign Disclosure: FD1 - This training product has been reviewed by the training developers in coordination with the MSCoE, Ft. Leonard Wood foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

Condition: In a field environment, given all platoon and squad sets kits and outfits (SKO) and a construction project. Some iterations of this task should be performed in MOPP 4.

Standard: Employ hand tools in support of general construction labor tasks, selecting the tools to complete each task safely without damaging equipment or personnel until the construction project is complete.

Special Condition: None

Safety Risk: Low

MOPP 4: Sometimes

Task Statements

Cue: None

DANGER

None

WARNING

Eye protection must be worn to prevent injuries.

Do not etch fiberglass handles as this may weaken the handle.

Never use damaged tools.

Ensure work area is clear before using tools.

CAUTION

Only use tool for their designed task. Failure to do so may damage the tool or equipment.

Remarks: None

Notes: None

Performance Steps

1. Observe safety guidelines throughout construction tasks.
 - a. Wear eye protection at all times.
 - b. Wear hearing protection when operating power tools or when working in high noise environment.

CAUTION

Gloves must not be worn around rotating machinery unless sharp or rough material is being handled. If such is the case, extreme care should be used to prevent the gloves from being caught in the machinery.

- c. Wear gloves when handling rough, scaly or splintery objects.

Note: Personnel working with electricity are usually required to wear insulating rubber gloves.

- d. Wear a dust mask or a respirator while sawing, grinding, sanding or drilling.
 - e. Keep hands away from the work area.
 - f. Support your local safety program and take an active part in safety meetings.

- g. Inspect tools and equipment for safe conditions before starting work.

Note: Never use damaged tools. This may damage equipment or cause injury. Notify supervisor so tool can be fixed or replaced.

Only use each tool for the job it was designed to do. Using the wrong tool will often result in a damaged tool or piece of equipment.

- h. Keep tools in a safe place.

Note: Never carry tools in pockets or leave them lying around. Clean up the work area when the job is complete.

- i. Advise supervisor promptly of any unsafe conditions or practices.
 - j. Learn your local safety program before you start.
 - k. Operate only the equipment you are authorized to use.

- l. Ensure power switch is in the "OFF" position before connecting a power tool to a power source.

- m. Keep power tools in hand until it has completely stopped.

2. Identify hand tools in the Squad's Carpenter's Kit.

WARNING

Use care in using the combination bar to avoid slippage and personal injury.

CAUTION

When grinding, take care to cool the end being ground by dipping it in water frequently, so tempering is not lost.

- a. Identify the Combination Pry Bar as used to pry, pull, cut, scrape, lift and pound nails.

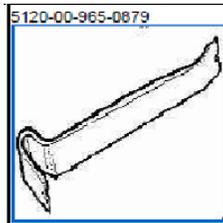


Figure 1
Bar, Combination Pry

- b. Identify the Chalk Line as used to mark a straight line.

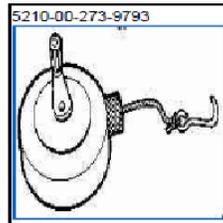


Figure 2
Chalk Line Reel

WARNING

Never cut toward yourself with a chisel.

CAUTION

Use short, rapid mallet blows to control depth and length of cut.

- c. Identify the Chisel Set as used to cut and shape different materials.

Note: Soldier must be able to distinguish woodworker's chisels from machinist's chisels.

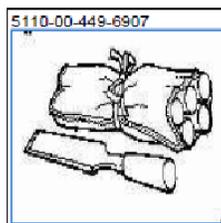


Figure 3
Chisel Set

CAUTION

Never use a claw hammer on a steel punch or on hardened steel-cut masonry nails. The face is too soft and could chip.

Be sure to check for a loose head or a cracked handle before use.

d. Identify the Carpenter's Hammer as used for driving and pulling nails and tapping wood chisels.

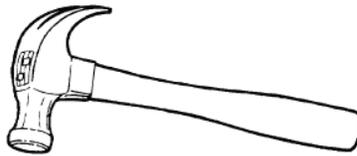


Figure 4

Hammer, Carpenter's Nailing curved claw

e. Identify the Engineer's Cross-Peen Hammer as used to strike punches and chisels as well as removing rivet heads and for stretching or bending metal.

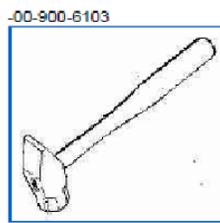


Figure 5

Engineer Cross-Peen Hammer

f. Identify the Screw-in Face Type Hammer as a soft-faced hammer capable of heavy blows without damaging the surface with variable heads.

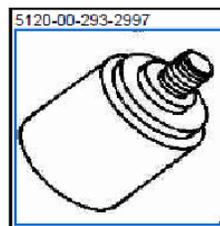
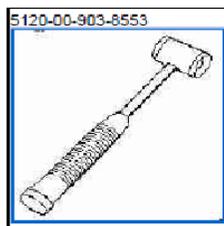


Figure 6

Inserted Soft-Faced Hammer

USE THIS CONVERSION CHART FOR FACE SELECTION

Type	Soft	Medium	Tough	Medium Hard	Hard	Extra Hard
Soft Rubber	S					
Wood	S	M		N		
Rubber		M				
Hard Wood			T			
Lead			T	N		
Plastic			T		H	
Rawhide		M	T	N	H	XH
Micarta					H	XH
Fibre					H	XH
Copper						XH

Hardness	Symbol	Color
Soft	S	Brown
Medium	M	Red
Tough	T	Green
Medium Hard	N	Cream
Hard	H	Black
Extra Hard	XH	Yellow

Figure 7

Inserted Soft-Faced Hammer Face Selection Chart

g. Identify the Hand Hacksaw as used to cut a metal object.



Figure 8
Hacksaw

h. Identify the Hawkbill Style Knife as used to cut.



Figure 9
Hawkbill Knife

i. Identify the Level and Plumb as used to establish a true vertical transfer and line-up reference points.



Figure 10
Level and Plumb

j. Identify the Line Level as used to check whether two points are level.

5210-00-223-9606

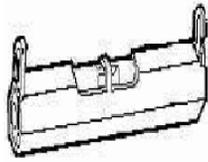


Figure 11
Line Level

k. Identify the Smoothing Plane as used to finish wood.

5110-00-242-3057

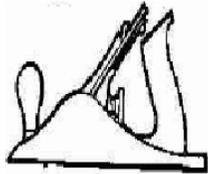


Figure 12
Bench Plane Smoothing

l. Identify the Lineman's Pliers as used to bend sheet metal, twist electrical wires, hold and bend small rods, cut wires and shear larger wires.

5120-00-239-8251

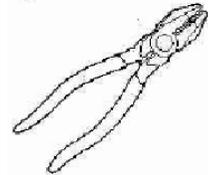


Figure 13
Lineman's Pliers

m. Identify the Slip-Joint Combination Pliers as used to cut soft wire and hold large or small objects.

5120-00-223-7397



Figure 14
Slip Joint, Straight-nose Pliers

n. Identify the Hand Rasp as used to rapidly remove wood from curved surfaces.



Figure 15
Hand Rasp

o. Identify the Hand Saw as used to cut wood.

Note: There are two categories of handsaws: the rip saw (1) and the crosscut (2). The rip saw is designed to cut with the grain of wood and the crosscut is designed to cut against the grain.

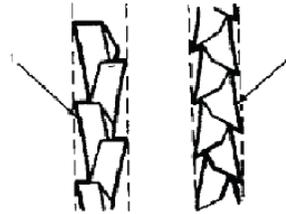


Figure 16
Hand Saw

WARNING

A Greasy handle could cause an accident.

Do not use screwdriver for prying, punching, chiseling, scoring or scraping.

Do not use a screwdriver near a live wire, to check a storage battery or to determine if an electrical circuit is live.

p. Identify the Screwdriver as used to drive or remove screws or bolts with slotted, recessed or special heads.

Note: The Proper way to select and use a screwdriver is to always match the size of the screwdriver to the job and always match the type of screwdriver to the head of the screw.

5120-00-542-3438



Figure 17
Cross Tip Screwdriver

5120-00-222-8852



Figure 18
Flat Tip Screwdriver

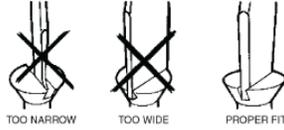


Figure 19
Screwdriver selection

q. Identify the Chisel Sharpener as used to sharpen chisels.

5110-00-524-8681

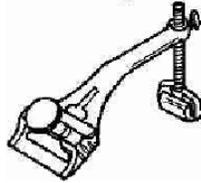


Figure 20
Chisel Sharpener

r. Identify Squares as uses to mark a square line, lay out steps and measure depth.

5210-00-273-1948

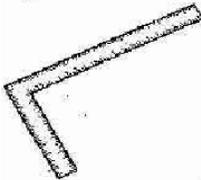


Figure 21
Carpenter's Square

5210-00-241-3599

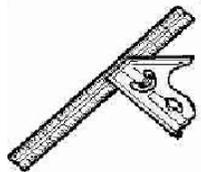


Figure 22
Combination Square

s. Identify the Tacker Gun as used to staple.

5120-00-889-1796

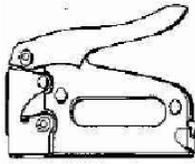


Figure 23
Tacker, Gun Type

t. Identify Measuring Tape as used to measure where accuracy is not critical.

5210-01-139-7444

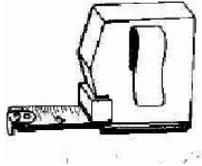


Figure 24
25ft Measuring Tape

5210-00-527-9429

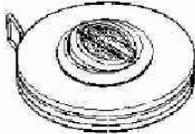


Figure 25
100ft Measuring Tape

CAUTION

If the wrench does not fit tightly, it will slip and round the corner of the nut.

u. Identify the Adjustable Wrench as used to remove and/or install nuts, bolts and studs when the correct size wrench or socket is not available.

5120-00-264-3796

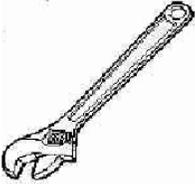


Figure 26
Adjustable Wrench

3. Identify hand tools in Squad's Pioneer Kit.

a. Identify the Single Bit Ax as used to cut down or prune trees, logs and heavy brush.

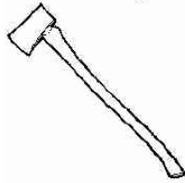


Figure 27
Single Bit Ax

WARNING

Use care in using the pinch bar to avoid slippage and personal injury.

CAUTION

When grinding, take care to cool the end being ground by dipping it in water frequently, so tempering is not lost.

Do not use bars for extra heavy work, since they will bend and may cause injury.

b. Identify the Pinch Crowbar as used for light ripping and prying jobs.



Figure 28
Crowbar, Pinch Bar

WARNING

Bolt cutters are considered security items. Always secure these tools when not in use.

CAUTION

Use extreme care when using cutter to avoid catching any part of the body or clothes between handles as pressure is applied to them.

Never attempt to cut spring wire or other tempered metal with bolt cutters. This will cause the jaws to be sprung or nicked.

c. Identify the Wirerope Cutter as used for general purpose cutting.

5110-00-595-8229

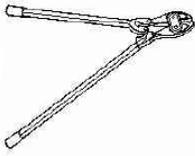


Figure 29
Wire rope Cutter

d. Identify the Posthole Digger as used to bore holes in the ground.

5120-00-223-8426

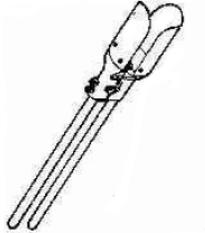


Figure 30
Posthole Digger

CAUTION

Never hammer a file into its handle.

e. Identify the Hand File as used for cutting, smoothing off, or removing small amounts of metal, wood, plastic or other material.

5110-00-595-8325



5110-00-242-5385



Figure 31
Hand File

f. Identify the Trip Wire Grapnel as used to trip wires designed to go off on contact, to find booby traps, or to detonate mines.

2040-00-378-8440

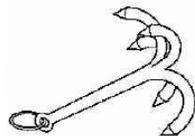
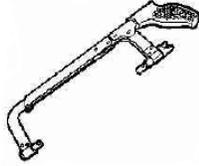


Figure 32
Trip Wire Grapnel

g. Identify the Hand Hacksaw as used to cut a metal object.

5110-00-289-9657



5110-00-277-4590



Figure 33
Hand Hacksaw

h. Identify the Sledge Hammer as used for striking punches and chisels, for breaking stones and concrete, and for setting timbers.

5120-00-251-4489

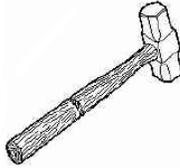
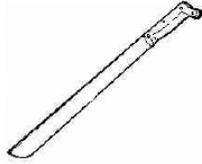


Figure 34
Sledge Hammer, 8lb

i. Identify the Machete as used to cut tall grass, vines, and small brush.

5110-00-813-1286



8465-00-926-4932

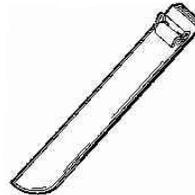


Figure 35
Machete and Sheath

CAUTION

Slight prying may be done with the mattock. However, this must be done cautiously to prevent breaking the wood handle.

j. Identify the Pick Mattock as used for digging and cutting operations.

5120-00-243-2395

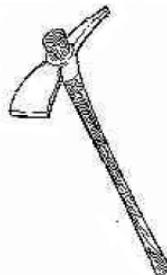


Figure 36

Pick Mattock

k. Identify the One Man Crosscut Saw as used for heavy work such as cutting down trees and sawing heavy timbers.

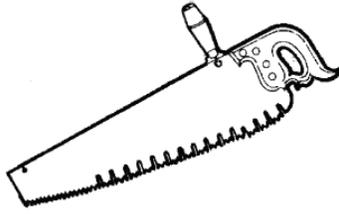


Figure 37
One Man Crosscut Saw

l. Identify Shovels as used for the breaking and digging of soil.

Note: The D-handled shovel is used for light work or for digging in cramped, tight places.

5120-00-293-3336



5120-00-188-8450



Figure 38
Shovels, D-Style and Long Style Handles

m. Identify the Brick Trowel as used to scoop and spread mortar.

5120-00-223-9482



Figure 39
Brick Trowel

n. Identify the Cement Trowel as used in concrete work for leveling, smoothing or pushing wet cement into place.

5120-00-224-4748



Figure 40
Cement Trowel

CAUTION

Do not use a timber wedge that has nicks or burrs, since the rough sections can scratch the hands or can cause chips to break off when struck by sledge.

- o. Identify the Timber Wedge as used with a sledge to split logs and timber.

5120-00-501-6010

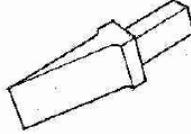


Figure 41
Timber Wedge

- p. Identify the Clamp Pliers Wrench as used to hold or clamp nuts and bolts that have been stripped.

5120-00-277-4244

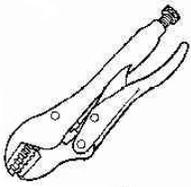


Figure 42
Locking Wrench Pliers

4. Identify power tools.

- a. Identify the Portable Electric Drill as used for drilling.

Note: By adding various accessories, the drill can be adapted for different jobs. Sanding, sawing, buffing and polishing are examples of possible uses.

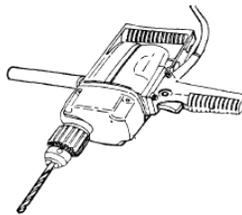


Figure 43
Portable Electric Drill

- b. Identify the Portable Electric Hammer as used for beveling, caulking, pounding, digging and breaking.

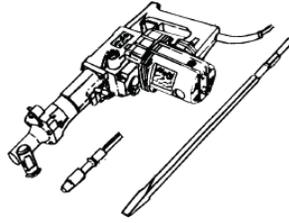


Figure 44
Portable Electric Hammer

c. Identify the Portable Electric Circular Saw as used for cutting.

Note: Saws vary in size and design depending on the nature of the task. Typical uses are cutting studding to length, cutting off end boards, preparing trim or ripping boards and planks.

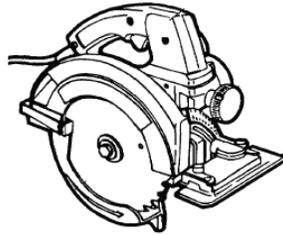


Figure 45
Portable Electric Circular Saw

d. Identify the Portable Chain Saw as used for tree trimming and cutting logs and timber.

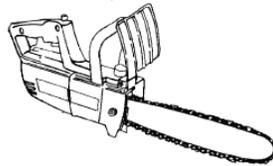


Figure 46
Portable Chain Saw

e. Identify the Portable Electric Disk Sander as used for heavy duty sanding, grinding, wire brushing, buffing and planning.

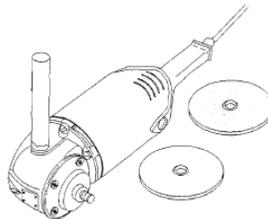


Figure 47
Portable Electric Disk Sander

5. Receive construction task.

6. Select appropriate tool to complete construction task.

7. Employ selected hand tool to complete construction task.

8. Repeat steps 5 through to 7 until construction mission is complete.

(Asterisks indicates a leader performance step.)

Evaluation Guidance: Assign Soldier tasks that support a construction project until project is completed. Score the Soldier GO if all measures are passed (P). Score the Soldier NO-GO if any measure is failed (F). If the Soldiers fails any measure, show them how to do it correctly.

Evaluation Preparation:

Setup: Provide the Soldier with all items listed in the conditions statement. Select a construction project that contains a variety of construction tasks that will force Soldier to use tools from all SKOs and use multiple tools during the evaluation. Ensure all the required equipment and components to conduct the evaluation are present and functional prior to initiating the evaluation.

Brief Soldier: Tell the Soldier what construction project they must complete, then assign them specific construction tasks to complete that project. Explain that as they complete each task they will be assigned further tasks. With each assigned task the Soldier will be evaluated on safety, selecting appropriate tool and employing tool appropriately as described in the performance measures.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Observed safety guidelines throughout the construction project.			
a. Wore eye protection at all times.			
b. Wore hearing protection when operating power tools or when working in high noise environment.			
c. Wore gloves when handling rough, scaly or splintery objects.			
d. Wore a dust mask or a respirator while sawing, grinding, sanding or drilling.			
e. Kept hands away from the work area.			
f. Supported your local safety program and took an active part in safety meetings.			
g. Inspected tools and equipment for safe conditions before starting work.			
h. Kept tools in a safe place.			
i. Advised supervisor promptly of any unsafe conditions or practices.			
j. Learned your local safety program before you start.			
k. Operated only the equipment you are authorized to use.			
l. Ensured power switch was in the "OFF" position before connecting a power tool to a power source.			
m. Kept power tools in hand until it had completely stopped.			
2. Identified hand tools in the Squad's Carpenter's Kit needed to support construction tasks.			
a. Identified the Combination Pry Bar as used to pry, pull, cut, scrape, lift and pound nails.			
b. Identified the Chalk Line as used to mark a straight line.			
c. Identified the Chisel Set as used to cut and shape different materials.			
d. Identified the Carpenter's Hammer as used for driving and pulling nails and tapping wood chisels.			
e. Identified the Engineer's Cross-Peen Hammer as used to strike punches and chisels as well as removing rivet heads and for stretching or bending metal.			
f. Identified the Screw-in Face Type Hammer as a soft-faced hammer capable of heavy blows without damaging the surface with variable heads.			
g. Identified the Hand Hacksaw as used to cut a metal object.			
h. Identified the Hawk Bill Style Knife as used to cut.			
i. Identified the Level and Plumb as used to establish a true vertical transfer and line-up reference points.			
j. Identified the Line Level as used to check whether two points are level.			
k. Identified the Smoothing Plane as used to finish wood.			
l. Identified the Lineman's Pliers as used to bend sheet metal, twist electrical wires, hold and bend small rods, cut wires and shear larger wires.			
m. Identified the Slip-Joint Combination Pliers as used to cut soft wire and hold large or small objects.			
n. Identified the Hand Rasp as used to rapidly remove wood from curved surfaces.			
o. Identified the Hand Saw as used to cut wood.			
p. Identified the Screwdriver as used to drive or remove screws or bolts with slotted, recessed or special heads.			
q. Identified the Chisel Sharpener as used to sharpen chisels.			
r. Identified Squares as uses to mark a square line, lay out steps and measure depth.			
s. Identified the Tacker Gun as used to staple.			
t. Identified Measuring Tape as used to measure where accuracy is not critical.			
u. Identified the Adjustable Wrench as used to remove and/or install nuts, bolts and studs when the correct size wrench or socket is not available.			
3. Identified hand tools in the Squad's Pioneer Kit needed to support construction tasks.			
a. Identified the Single Bit Ax as used to cut down or prune trees, logs and heavy brush.			
b. Identified the Pinch Crowbar as used for light ripping and prying jobs.			

c. Identified the Wire rope Cutter as used for general purpose cutting.			
d. Identified the Posthole Digger as used to bore holes in the ground.			
e. Identified the Hand File as used for cutting, smoothing off, or removing small amounts of metal, wood, plastic or other material.			
f. Identified the Trip Wire Grapnel as used to trip wires designed to go off on contact, to find booby traps, or to detonate mines.			
g. Identified the Hand Hacksaw as used to cut a metal object.			
h. Identified the Sledge Hammer as used for striking punches and chisels, for breaking stones and concrete, and for setting timbers.			
i. Identified the Machete as used to cut tall grass, vines, and small brush.			
j. Identified the Pick Mattock as used for digging and cutting operations.			
k. Identified the One Man Crosscut Saw as used for heavy work such as cutting down trees and sawing heavy timbers.			
l. Identified Shovels as used for the breaking and digging of soil.			
m. Identified the Brick Trowel as used to scoop and spread mortar.			
n. Identified the Cement Trowel as used in concrete work for leveling, smoothing or pushing wet cement into place.			
o. Identified the Timber Wedge as used with a sledge to split logs and timber.			
p. Identified the Clamp Pliers Wrench as used to hold or clamp nuts and bolts that have been stripped.			
4. Identified power tools needed to support construction tasks.			
a. Identified the Portable Electric Drill as used for drilling.			
b. Identified the Portable Electric Hammer as used for beveling, caulking, pounding, digging and breaking.			
c. Identified the Portable Electric Circular Saw as used for cutting.			
d. Identified the Portable Chain Saw as used for tree trimming and cutting logs and timber.			
e. Identified the Portable Electric Disk Sander as used for heavy duty sanding, grinding, wire brushing, buffing and planning.			
5. Received construction task.			
6. Selected appropriate tool to complete construction task.			
7. Employed selected hand tool to complete construction task.			
8. Repeated steps 5 through to 7 until construction mission is completed.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	TM 9-243	USE AND CARE OF HAND TOOLS AND MEASURING TOOLS (TO 32-1-101; M6290-AJ-MAN-1010; TM-10209-10/1) (REPRINTED W/BASIC INCL C1-2)	Yes	Yes

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT. Environmental protection is a continual process. Always be alert to ways to protect our environment and reduce waste.

Safety: In a training environment, leaders must perform a risk assessment in accordance with ATP 5-19, Risk Management. Leaders will complete the current Deliberate Risk Assessment Worksheet in accordance with the TRADOC Safety Officer during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological,

and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination. Everyone is responsible for safety. A thorough risk assessment must be completed prior to every mission or operation.

Prerequisite Individual Tasks : None

Supporting Individual Tasks : None

Supported Individual Tasks : None

Supported Collective Tasks : None