



FIRE CREW FIREFIGHTER TRAINING

Procedures Handbook 4200

SCRAPING TOOLS

TOPIC: HOW TO USE SCRAPING TOOLS

TIME FRAME: 1:00

LEVEL OF INSTRUCTION: Level II

BEHAVIORAL OBJECTIVE:

Condition: Given a McLeod, a shovel and a wire broom

Behavior: The student will demonstrate safe handling, use and carrying and storage of each scraping tool, while wearing full wildland PPE

Standard: To the satisfaction of the fire captain/instructor

MATERIALS NEEDED:

- Job breakdown
- A fire ready CCV
- One set full wildland PPE per student
- A scraping area

REFERENCES:

- [CDF Fire Protection Training Handbook 4300](#)

PREPARATION:

The scraping tool section is basically responsible for completing a line where the cutting section has removed the “woody” fuel. Your fire captain will specify the width of the line and the width of the mineral soil, or bare dirt, portion.



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OPERATIONS	KEY POINTS
1. Conduct tailgate safety session	1a. Documenting on appropriate IIPP form(s)
2. Inspect McLeod handle	2a. For straightness b. Smoothness c. Strength
3. Inspect McLeod head	3a. Tightness of rivets/bolts b. Sharpness c. Cracks d. Rust
4. Carry McLeod	4a. At the balance point b. Handle level c. Downhill side d. Cutting edge up away, tines toward body, blunt side up
5. Pass McLeod to another crew member	5a. With both hands on handle b. Tool level and at chest height c. Receiver takes tool with both hands d. Receiver has control of tool before releasing by stating "got it"
6. Ground the McLeod	6a. With head of tool on ground, handle up b. Tool will stand by itself on level terrain c. On uneven terrain, handle held until transferred to receiver



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OPERATIONS	KEY POINTS
7. Stand and grip McLeod	7a. With feet apart and on solid footing b. Maintaining balance c. With knees bent d. Firm grip on handle e. Gloves and eye protection on
8. Scrape line with McLeod	8a. Cutting edge for grass and light brush b. Tines for pine needles, duff and litter c. Pulling and scraping motion d. Downward pressure on tool
9. Cut, trench, and grub	9a. Small roots and light brush can be cut b. With short chopping motions only, (long swings can damage the McLeod) c. Using cutting edge, corners and even side of blade for various situations
10. Inspect shovel handle	10a. For straightness b. Smoothness c. Strength
11. Inspect shovel head	11a. Security b. Sharpness c. Cracks and rust
12. Carry the shovel	12a. On downhill side



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OPERATIONS	KEY POINTS
13. Dig with shovel	<ul style="list-style-type: none">b. At balance pointc. With cutting edge downd. Tilting cutting edge out slightly to avoid injury to leg 13a. Maintaining balance, especially when using one foot on heel of shovel <ul style="list-style-type: none">b. With feet apart on solid footing
14. Fill shovel and move material to new location	14a. Bending knees and arching back slightly <ul style="list-style-type: none">b. Bracing forearm with thigh for power and control
15. Scrape with shovel	15a. Rolling shovel face toward direction of scrape until edge contacts ground <ul style="list-style-type: none">b. Keeping feet apart, solid footing and good balancec. Bracing forearm against thigh for power and controld. With shovel edge moving along the ground in a semi-circular patterne. Rotating body and shovel handle
16. Trench with shovel	16a. Using digging and scraping actions to create trench and berm <ul style="list-style-type: none">b. Pulaskis can help by loosening dirt
17. Chop with shovel	17a. Small roots and light brush <ul style="list-style-type: none">b. Using forward half of cutting edges



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OPERATIONS	KEY POINTS
18. Fill shovel with dirt to throw overhand	18a. To sharp shoot a snag or throw dirt a long distance b. Using Pulaski to loosen dirt if necessary
19. Hold shovel over shoulder	19a. Handle pointed at target b. Eye on target (base of flames) c. Firm grip on handle with one hand on the end and one near the middle d. Feet apart, good solid footing with well balanced stance
20. Rotate shovel toward base of flames	20a. Stopping tool when pointed at target to avoid scattering of dirt b. Using a reaching body motion and leg strength to add distance and power c. Not scattering dirt (this adds distance and effectiveness to throw)
21. Fill shovel with dirt to throw sidearm (fan)	
22. Hold shovel with dirt behind body	22a. Usually about shoulder high b. Keeping eye on target c. Using firm grip d. With feet apart, good solid footing
23. Swing shovel to the side and down	23a. Toward base of flames b. With force c. Using a sweeping motion



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OPERATIONS	KEY POINTS
24. Smother fire using shovel	<ul style="list-style-type: none">d. Spilling dirt in a fan (scattered), starting before getting to the base of the flamee. Continuing to spill toward the base of the flames until the shovel is empty <p>24a. Using back side of blade to pat out flames</p> <ul style="list-style-type: none">b. Using dirt to smother flames (do not bury hot fuel)
25. Use shovel to shield	25a. Blade can help shield from radiant heat
26. Inspect the wire broom	<p>26a. For straightness</p> <ul style="list-style-type: none">b. Smoothnessc. Strengthd. Security
27. Carry wire broom	<p>27a. At balance point</p> <ul style="list-style-type: none">b. With handle levelc. On downhill sided. Tool head forwarde. Bristles down
28. Pass the wire broom	<p>28a. With both hands on handle</p> <ul style="list-style-type: none">b. Tool level at chest heightc. Receiver taking tool with both handsd. Ensuring receiver has control of tool by stating "got it"



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OPERATIONS

KEY POINTS

29. Grounding the wire broom

29a. With head of tool on ground

b. Handle up

c. Handle held until transferred to receiver on uneven terrain

d. Receiver stating "got it"

30. Sweep with wire broom

30a. Using light pressure

b. Using bristle tips

c. Avoiding transfer of burning material to green side



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APPLICATION:

Fire Captain/instructor will demonstrate proper use of each scraping tool. Four or five students will use tools following each demonstration. The rest of the crew will observe students who are using the tools until it is their turn to rotate in. Student will practice using each tool under Fire Captain/instructor supervision.

EVALUATION:

Practice using the scraping tools in preparation for the handline construction exercise. Student may be asked to demonstrate at any time.

ASSIGNMENT:

None.