



FIRE PROTECTION TRAINING

Procedures Handbook 4300

HANDTOOLS

TOPIC: BASIC CHAINSAW SAFETY AWARENESS

TIME FRAME: :30

LEVEL OF INSTRUCTION: Level I

BEHAVIORAL OBJECTIVE:

Condition: Given a written quiz

Behavior: The student will gain a basic understanding of the safety considerations necessary when working around chainsaws.

Standard: With a minimum of 80% accuracy according to the information contained in the S-212 Wildland Fire Chain Saws, National Wildfire Coordinating Group, February, 2004

MATERIALS NEEDED:

- Writing board with markers/erasers
- Appropriate video equipment and screen
- Slides for this lesson plan
- Chainsaw with bar and chain
- Various size/length saw chaps
- Full Personal Protective Equipment per CAL FIRE policy
- Fuel and oil equipment

REFERENCES:

- S-212 Wildland Fire Chain Saws, National Wildfire Coordinating Group, February, 2004
- USDA Forest Service Publications- FSM 6700 and FSH 6709.11

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PREPARATION:

The chainsaw is an excellent but dangerous tool for cutting brush, falling trees, and structure ventilation. It is important for you, as a firefighter to know the capabilities and safe use of this tool. This is an informational lesson for awareness level training only and does not qualify or certify the student to use a chainsaw. All chainsaw training and certification shall use, either in part or as a whole, the current edition of National Wildfire Coordinating Group Curriculum, S-212 Wildland Fire Chain Saws. Safety is the most critical objective of this course. Your safety, the safety of your coworkers, the safety of the public, and property protection should be a part of every plan and every action you take.

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PRESENTATION	APPLICATION
<p>I. CHAINSAW OPERATIONS</p> <p>A. Personnel</p> <ol style="list-style-type: none">1. Chainsaw Operator (Sawyer)2. Assistant to the Chainsaw Operator (swamper or puller) <p>B. Required Training</p> <ol style="list-style-type: none">1. Per CAL FIRE Handbook 4000, section 4044.1 (No. 18 May 2004)2. “All Firefighters, as defined in 1780.2, operating chainsaws (including but not limited to CDCR inmates, CYA wards, and cooperative fire protection agreements) shall perform all chainsaw operations and related activities in accordance with CAL FIRE Handbook 1770, 1780 and 1781. USDA Forest Service Publications FSM 6700 and FSH 6709.11 shall be used as reference documents only. All chainsaw training and certification shall use, either in part (as in Class A) or in total (as in Class B), the current edition of National Wildfire Coordinating Group (NWCG) curriculum, <u>S-212 Wildland Fire Power Chain Saws</u> for firefighting personnel. The time frame for course completion and delivery may be at the discretion of the instructor. Employees in training status may continue to operate a chainsaw only under direct and constant supervision of a qualified chainsaw operator. Except in emergencies where life is threatened, chainsaw operations by an uncertified operator are not permitted.”	



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<p>II. PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIRED FOR CHAINSAW OPERATIONS</p> <p>A. Safety items that must be used while operating or working around chainsaws</p> <ol style="list-style-type: none">1. Approved hardhat (NFPA 1977)2. ANSI approved eye protection3. Appropriate gloves, heavy-duty, cut-resistant or leather4. Waterproof or water-repellent, 8-inch high laced boots with nonskid soles or structure fire boots5. Hearing protection (85 decibels and higher ; chainsaw process 110-120 decibels)6. Long-sleeved work shirt, nomex fire shirt, or structure fire turnout coat7. Pants, bloused (tied off at boot top)8. Chainsaw chaps with a 2-inch boot overlap<ol style="list-style-type: none">a. Certified for fireline, if used on a fireb. Treat your chainsaw chaps as a CRITICAL piece of safety equipment. Keep them as clean as possible9. Bar cover10. Full wildland PPE when working on a wildland fire per CAL FIRE policy11. Full structure fire PPE when working on a structure fire <p>B. General PPE requirements</p>	



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<ul style="list-style-type: none">1. Select PPE based on hazard identified in the CAL FIRE Policies and Procedures handbook<ul style="list-style-type: none">a. PPE shall properly fitb. Defective, damaged, or unsanitary PPE shall not be used.c. Supervisors shall ensure the adequacy of PPE as well as its proper maintenance and sanitation2. Each employee shall be trained to wear the PPE required by CAL FIRE per policy3. Employees need to demonstrate an understanding of their training in the proper use of PPE<ul style="list-style-type: none">a. Employees will be held accountable for accidents and injuries that result from failing to use, or misusing, required PPEC. Specific PPE requirements<ul style="list-style-type: none">1. Eye and face protection<ul style="list-style-type: none">a. Shields and or ANSI approved safety glasses, may be used in non-fire situations for better visibility.b. Goggles are to be used per CAL FIRE policy on wildland fires<ul style="list-style-type: none">(1) Goggles can fog causing reduced visibility2. Noise protection<ul style="list-style-type: none">a. Hardhat / shield / earmuff combinations designed for chainsaw use may be used in non-fire situations	



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<ul style="list-style-type: none">b. In wildland fire situations ear plugs work well with the approved PPE3. Head protection<ul style="list-style-type: none">a. Hardhat / shield / earmuff combinations designed for chainsaw use may be used in non-fire situationsb. An approved NFPA 1977 compliant wildland helmet will be used on all wildland fires4. Hand protection: Gloves to prevent<ul style="list-style-type: none">a. Cutsb. Abrasionsc. Burnsd. Skin contact with chemicals5. Foot protection: Footwear designed top prevent injury due to falling or rolling objects and objects piercing the soles. Heavy-duty, cut resistant or leather, waterproof or water-repellent, 8-inch high laced boots with nonskid soles are required for chain saw use.6. Additional protection: Saw chaps, saw bar/chain shoulder pads, or other PPE that provide cut resistance or puncture protection.<ul style="list-style-type: none">a. Chainsaw chaps protect the legs by resisting the cut, then jamming the saw chain so it stops.<ul style="list-style-type: none">(1) Cordura and Kevlar(2) Fibers bind up and stop turning chain	



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<ul style="list-style-type: none">b. When chainsaw chaps are exposed to temperatures higher than 500 degrees Fahrenheit, the nylon shell may melt, but the protective Kevlar™ pad will not burn.c. Chainsaw chaps need to be properly adjusted and worn snug to keep them positioned correctly on the legs. Proper fit and correct length (two inches past the boot top, or clear to the instep) maximize protectiond. Chainsaw shoulder pads reduce the danger of being cut by the chain while carrying the saw on the shoulder.e. Bar Cover<ul style="list-style-type: none">(1) Can be pre-manufactured by chainsaw manufacturers or a common improvisation is to use 3" hose to cover the bar and chain(2) Used when carrying chainsaws long distances and when stored in compartments <p>III. SAFETY CONSIDERATIONS WHEN WORKING AROUND CHAINSAWS</p> <ul style="list-style-type: none">A. Types of chainsaw operations (non structure fire)<ul style="list-style-type: none">1. Felling<ul style="list-style-type: none">a. Cutting down standing treesb. Cutting down standing snags2. Bucking- Cutting logs into manageable sections	<p>See Student Information Sheet #1</p>



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<ul style="list-style-type: none">3. Brushing<ul style="list-style-type: none">a. Cutting brush out of a fireline, trail or area to be cleared4. Limbing- Cutting the branches of a downed or standing tree to expose the trunkB. Safety Considerations<ul style="list-style-type: none">1. General<ul style="list-style-type: none">a. Always wear hearing, eye, foot and hand protection when working around chainsawsb. Always wear a hardhat when working around chainsawsc. All chainsaw operations and swampers shall wear chapsd. Personnel that are working in the area but are not the sawyer or swamper should stay a minimum of ten feet away from chainsaw operations2. Felling<ul style="list-style-type: none">a. The safe area is considered to be 2-½ times the height of the tree away from the tree being felled<ul style="list-style-type: none">(1) Away from falling branches being knocked free from other trees(2) Clear brush from the tree's base being cutb. When assisting a chainsaw operator, make sure you have identified an escape route to be used when the tree starts to fall	

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<ul style="list-style-type: none">(1) Clear escape route if needed(2) Make sure you escape and the sawyer will escape if need be <p>3. Bucking</p> <ul style="list-style-type: none">a. Stay up slope and away from areas that a log section could roll towards, when log section cut from the main tree trunkb. Stay away from areas where, logs or branches could move to when a load (side, top end bind) is released by cutting<ul style="list-style-type: none">(1) The log can move extremely quickly(2) This situation has seriously injured and killed people <p>4. Brushing</p> <ul style="list-style-type: none">a. If you are not working directly with the sawyer, stay a minimum of ten (10) feet away from the sawb. When pulling cut brush for the sawyer, you must establish a way to communicate. Notify the sawyer first that you are going to remove cut brush<ul style="list-style-type: none">(1) Failure to do this could result in the sawyer swinging the saw in your direction risking injury	<p>Give examples: touch back with long stick, air horn, hand signals, etc.</p>



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<p>C. Limbing</p> <ol style="list-style-type: none">1. When working with a sawyer who is limbing a standing tree, stay clear of the area where the limb may land or roll towards2. Make sure the sawyer knows when you are going to remove the cut limbs3. When pulling limbs for a sawyer who is limbing a downed tree, follow the same rules as outlined in brushing<ol style="list-style-type: none">a. Tree trunks may move when limbs contacting the ground are cutb. Limbs may have a bind or a load. They can move quickly and violently when cut	

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SUMMARY:

Chainsaws are an important part of emergency incidents and projects. Training in the proper use, care and maintenance is required prior to being able to operate a chainsaw. Working around chainsaws is dangerous and failure to follow the appropriate safety precautions can result in serious injury or death. CAL FIRE Policy 4044 outlines in detail the requirements of proper training levels for CAL FIRE employees.

EVALUATION:

Written Quiz

ASSIGNMENT:

To be determined by the instructor