

FOREMAN'S GUIDE
for
TRAINING A FIRE SUPPRESSION CREW

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This guide covers an entire training program outlined for foremen employed by the California Division of Forestry, State of California. It includes all the information and methods of procedure that the foremen will follow when they instruct the inexperienced fire suppression crewmen at their respective stations. The foremen will conduct this program during the first four weeks of the fire season to prepare the crewmen for any duty they may be called upon to perform.

DUTIES OF THE SUPPRESSION FOREMAN

Prevention

- Keep daily record of work done.
- Do no other specific prevention duties except as assigned in individual instructions or special orders.

Preparedness

- Train crew in organization, use of equipment, and fire suppression methods; keep a personnel training record for the training sessions. (See Fig. 1, App.)
- Develop crew spirit.
- Maintain quarters in clean and orderly condition.
- Inspect equipment and require that it be kept up to a high standard.

Suppression

- Handle small fires with crew.
- Serve as assigned on large fires.
- Make reports on small fires.
- Keep other records and prepare reports as specified by your superior.

REASONS FOR TRAINING THE CREWMEN

It is the responsibility of the foreman to instruct his men in the use of all new tools and techniques of fire-fighting. We find each fire season that the majority of the crewmen are on the job for the first time and need complete training. To accomplish this the foreman must set up a training program that will instruct the crewmen in the following: (1) use of all fire-fighting tools and equipment, (2) fire-fighting techniques, (3) working together as a unit, (4) necessity of safety first, and (5) living together cooperatively.

Many of the crewmen are boys just out of high school or in their senior year of school and away from home for the first time. It is mainly for these men that this program is designed.

METHODS OF PRESENTATION

If he is to train the young inexperienced crewmen properly, it is important that the foreman has a good understanding of how to handle a crew. The foreman should be well informed on the subject he is to present and have the proper materials available for use and study. His method of presentation should be clear and precise so that the material covered will be easily understood by every man. The training sessions will consist of a lecture and instructions, practical appli-

ications and use of tools and equipment, and a discussion period to review the entire session at which time the crewmen will ask any questions they might have pertaining to the material covered.

There are several method of presenting the material and any one or all of these may be used in the presentation.

Diagrams

The use of diagrams can be very effective when description of tools, equipment, and fire types are to be included in the training session. The diagrams should be large enough to be seen by all the crewmen, and all the parts should be labeled properly to insure complete comprehension of the material being described.

Demonstrations

After full description of a tool is given and the parts diagramed and labeled on the blackboard, its proper use should be demonstrated. The demonstration should show how the tool can be used effectively to accomplish a given job, with little effort and without damage to the implement. This point is important since improper use of a tool decreases the efficiency of the crew and could cause serious injury to the crewmen.

Practical Application by the Crewmen

After the demonstration the men should be allowed to handle the tool. The foreman will have the equipment ready

to distribute to the crew, making sure that there is at least one implement for every two men. The crew should divide into two-man teams and put into practice the techniques of handling the tool that has been demonstrated. Each man will take his turn in the drill as the second man of the team watches and makes suggestions that will help his partner master the use of the tool.

TOOLS AND THEIR USES

Before taking the men into the field, it is best to describe each tool they will use and the proper technique to employ while using the tool on the fire line; the positions to take in the crew line-up also should be outlined. This session should commence with an introduction of the tool, giving its nomenclature. After the crewmen have been given these fundamentals, there should be a demonstration of the tool or tools to show how the proper technique in using the tool will produce more satisfactory work. For these training sessions each man should be given a mimeographed list of tools, their parts and uses, to study. Such a lesson plan and demonstration would be as follows:

THE DOUBLE BITTED AXE

Part I

Topic: The nomenclature of a double bitted axe
(western pattern)

Material: Blackboard and chalk, a double bitted
axe, axe handle and steel wedges, short
log for chopping demonstration

Preparation: Gather material and have the crewmen sit
where they can best view the blackboard

Introduction: This is a double-bitted axe with a
36" handle

Presentation outline:

1. The handle
 - a. Bitt end
 - b. Wood wedge cut
 - c. shape
2. The wedges
 - a. Material
 - b. Shape
 - c. Size
3. Blade
 - a. Eye angle
 - b. Shape
 - c. Cutting edges

Application: Draw a sketch of parts on blackboard
and label same (See Fig. 2, App.)

Test: Pass parts among the group and have them name
these parts

Part II

Topic: Safety precautions to employ when using
the double-bitted axe

Presentation outline:

1. In transportation
 - a. By man
 - (1) Carry on downhill side of body
 - (2) Carry at balance point
 - b. By vehicle
 - (1) Keep covered and in proper place
(place provided for transportation)
 - (2) Use extreme caution in loading and
unloading

2. When in use
 - a. Prevent striking over or under, also glancing blows
 - b. Check for clearance from overhanging brush
 - c. Keep enough distance between the men
3. When the crew is resting
 - a. Place tool out of the way of others
 - b. Prevent damage by fire
 - c. Do not throw the axe at trees

Application: Demonstrate all the safety factors

Test: Have class demonstrate the safety factors

Part III

Topic: Use of the double-bitted axe

Presentation outline:

1. Positions while using the axe
 - a. Body
 - (1) Facing the striking surface
 - (2) A handles length from striking surface
 - b. Feet
 - (1) Approximately two feet apart
 - (2) Right foot in line with the cutting surface
 - c. Hands
 - (1) Right hand at bitt on backswing
 - (2) Left hand at handle on backswing
 - (3) Both hands together at handle end on forward swing
2. The swing
 - a. Easy and steady
 - b. Make each one count

Application: Demonstrate the steps; direct a crewman in the proper use

Test: Have half of the class instruct and check the other half in the proper use of axe and then exchange places

Part IV

Topic: The maintenance of the double-bitted axe

Presentation outline:

1. Close inspection of axe
 - a. Handle for cracks, splits, and splinters
 - b. Wedges, either loose or missing
 - c. Blade for cracks, breaks or damaged cutting edge
2. Replacements
 - a. Damaged handles
 - b. Missing wedges
3. Repairs
 - a. Sand, oil, and mark handle
 - b. Sharpen and oil blade

Application: Demonstrate inspection, replacements, and repairs to class

Test: Have each member of crew inspect an axe and suggest replacements and repairs to be made

Conclusion: Give a brief resume of all material covered and answer any questions that the crewmen may have pertaining to the material covered. This will complete the session on the double-bitted axe.

The double-bitted axe was used in this example since it is the most dangerous tool used by the fire suppression crew. From past experience, there are more crewmen and other Forestry personnel injured by improper use of the axe than from any other tool used. Furthermore the axe is one of the most important tools used in building a fire line, and each crewman should be thoroughly trained to use it properly and effectively.

The remaining tools used by the crew will also be covered in a succession of lessons similar to the one outlined for

the double-bitted axe. Each tool has its own importance, and all crewmen should be capable of handling each one properly and to the best advantage.

THE TECHNIQUE OF FIRE-FIGHTING

Further lesson plans on fire-fighting techniques will follow the introductory lessons of the tools used by the crew. These lessons should also be given in a series of planned presentations. They should consist of explanations and diagrams giving the proper approach to different types of fires under varying conditions. (See Figs. 3, 4, 5, 6, App.) The foreman will stress the best procedure of an initial attack for each type of fire, and the best points or locations of attack. These points can be easily demonstrated by diagrams on a blackboard. Through this system of diagrams and explanations the material covered will be easily understood and immediate application of techniques can be made on an assumed fire line. For this assimilation of an attack on a fire line, the crew should be organized into a fire-fighting unit.

Organization of the Crew and Crew Positions

In the application of lessons on outdoor drills the foreman will organize his men into a fire line crew, assigning each man a particular position to take and duty to perform. The men will be trained to perform specific

details so that the attack on the fire line will be orderly. In this way each crewman will know what his job is and what his fellow crewmen and crewleader expect him to do. Although each man is assigned to a certain crew position he should be trained to do other details as well. At times it may be necessary to change positions in the crew line-up to meet a situation that arises unexpectedly.

Practice Drills

After the crew is organized and ready for action, the foreman will pick the site of an imaginary fire and start the crew building a handline around the prescribed burning area. Performance of drills such as these during the first month of fire season will teach the crew to work together as a unit. It also conditions them for the more strenuous work of an initial attack on a fire line which is usually done by the fire suppression crew. The crew positions should be shifted during these drills so that each man might have an opportunity to perform the various duties and become accustomed to handling all of the tools used in building a handline.

Another important duty of the suppression crew is to get water on the fire line as fast as possible. Drills should be given on hose laying until this task can be done quickly and efficiently. It should take a crew from 1 3/4 to 2 1/4 minutes to lay eight joints of 1 1/2 in. and 1 in. cotton hose. The drills consist of removing the hose from the rack

on the fire truck, connecting it to the outlet of the pump, and laying out the joints up and down a slope and through brush. By the time the last joint of hose is out and connected, the man operating the pump should have the pump started and the line charged. Occasionally the drill should be performed with a charged line, usually under 75 lb. pressure, which will prove exciting, with all the crew getting soaked. This will at least relieve the monotony of laying out and taking up hose for a short period. This part of the training is important because often a speedy hose lay may prevent a flare up along the fire line and keep the fire from going out of control.

The Fire Line Attack

The fire suppression crewmen are usually the first forestry personnel to arrive at the scene of a fire; thus, they must make the initial attack. They should fully understand that the action taken during the first few minutes of the attack may determine the size of the fire. The foreman should stress this point during his training session, and to do this most effectively he should employ the use of a series of diagrams showing the various methods of approaching the fire line. His diagrams should show the attack under various conditions in regards to the location of the fire and the topography of the area. The diagrams should illustrate the proper attack to use on road-side fires, fires on steep terrain, and snag fires,

and also show the location of the fire line around these fires. (See Figs. 3, 4, 5, 6, 7, App.)

Mop Up After Fire is Under Control

After the handline is in and the fire is under control, the fire must be patrolled, and burning material must be pushed back from the handline. This presents a problem on steep terrain since burning material may roll down hill and across the control line. This can be prevented by trenching below the burning material on the slope so that if burning logs or debris starts to roll the trench will catch it. (See Fig. 9, App.) Burning logs can also be turned to ~~lay~~^{lie} vertically on the slope and eliminate the danger that a rolling log constitutes. (See Fig. 8, App.)

IMPORTANCE OF SAFETY FIRST

One of the most important factors of this training course is Safety First. No lesson plan could be complete unless it stressed the point of how Safety First should be practiced at all times. When there are a number of men handling tools and equipment Safety First should be practiced continually. Men must be cautioned to stay clear of persons using tools, to watch out for burning snags, and to be continuously aware of moving equipment.

To avoid minor cuts and bruises, the men should be trained to properly load and unload tools that must be transported. Tools should always be placed in the racks

provided for transportation. Tools with sharp blades should be placed in the boxes and the racks with the blade down and larger tools, such as the cross-cut saw, placed in the rack with the proper safety guard in place. These measures are important as an injured firefighter is of no value to the crew, especially if he is enroute to a fire.

Even with all the stressing of safe practices there always comes a time when an accident occurs. It is then necessary for someone to render first aid to the injured person or persons. The foreman should of course be capable of rendering treatment, but so should the crewmen as sometimes the foreman is not available when an injured person needs assistance. Each crewman should be instructed in the fundamentals of first aid, such as treating cuts, bruises, and snake bites, and the proper procedure to follow in the case of burns, broken bones, or shock.

LIVING TOGETHER COOPERATIVELY

Since most of the crewmen are away from home for the first time, and are unaccustomed to living with other men, it is of the utmost importance to instruct them on matters of personal conduct in the living quarters. Housekeeping is an important factor in the well being of the entire crew. Each crewman will be assigned details about the barracks and everyone will be expected to perform these duties when it is his turn. The details usually consist of cleaning the

barracks and washroom and K. P. duty. These are daily chores, and the usual practice is to assign one crewman to each detail for a specified day of the week. It is advisable for the foreman to post a roster with a schedule of the details assigned to each man at least one week in advance. This procedure will eliminate any arguments that may arise and will be a constant reminder that the chores must be done.

Personal cleanliness is also a factor that must not be overlooked when the foreman is instructing his crewmen. The foreman must stress that a man is required to have a clean and orderly bunk and that his person and clothing must be kept clean. This is very important since an offensive person, within the living group, may cause trouble among the crew.

CONCLUSION

A well-trained crew is an unspoken tribute to the foreman in charge. If a crew responds to the instructions of their leader without complaint, the foreman knows that he is respected. To receive respect from the crew, a foreman must execute his duties in a manner that causes no antagonisms.

The foreman must prompt the development of crew spirit and in general be "one of the boys." Complete cooperation of crew members at work and during leisure hours will insure the desired efficiency of the fire-suppression crew.

APPENDIX

PRINCIPLES TO BE OBSERVED
 IN HANDLING
 THE DOUBLE BITTED AXE

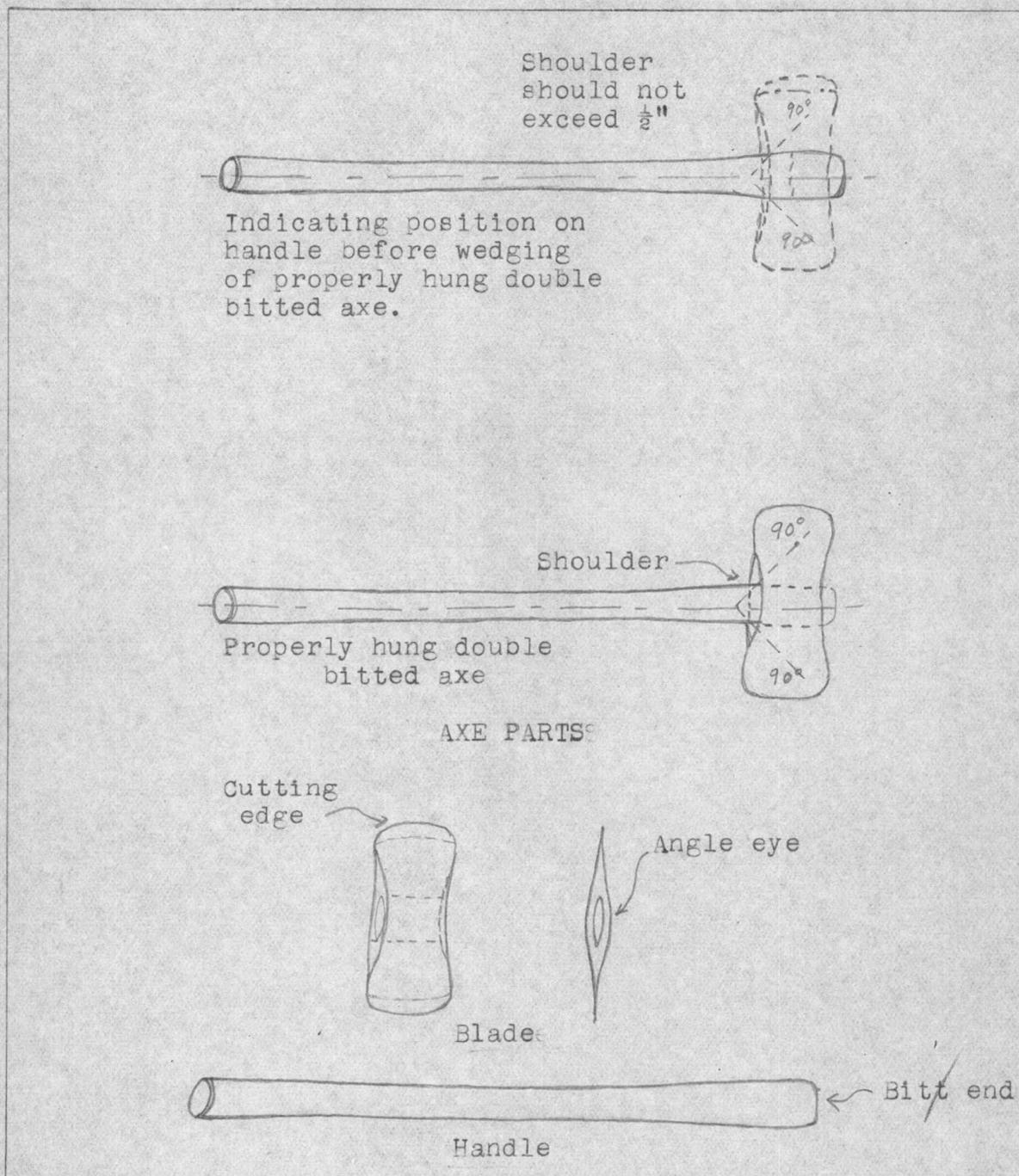


Fig. 2

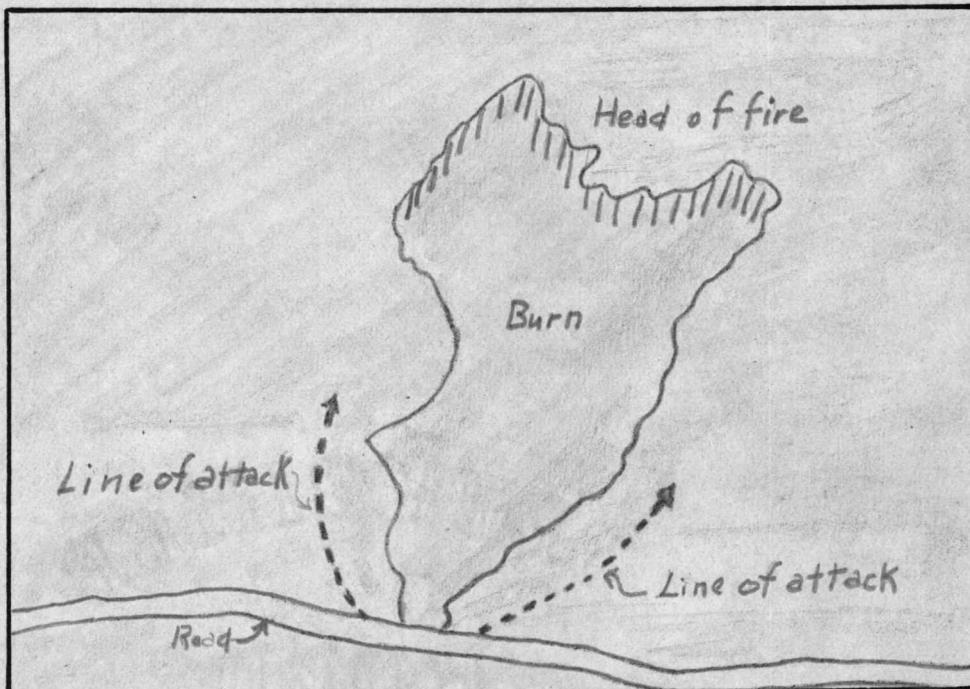


Fig. 3. A roadside fire burning over level terrain, moderate ground cover, and a uniform rate of spread. (1:13)

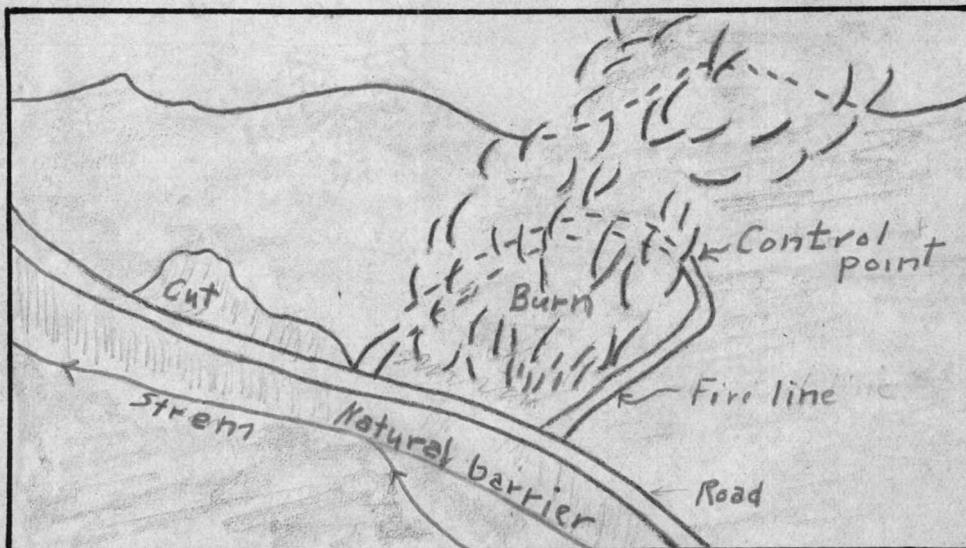


Fig. 4. A roadside fire burning up a slope and above the natural barrier. Control the fire on the side away from the barrier first. (1:10)

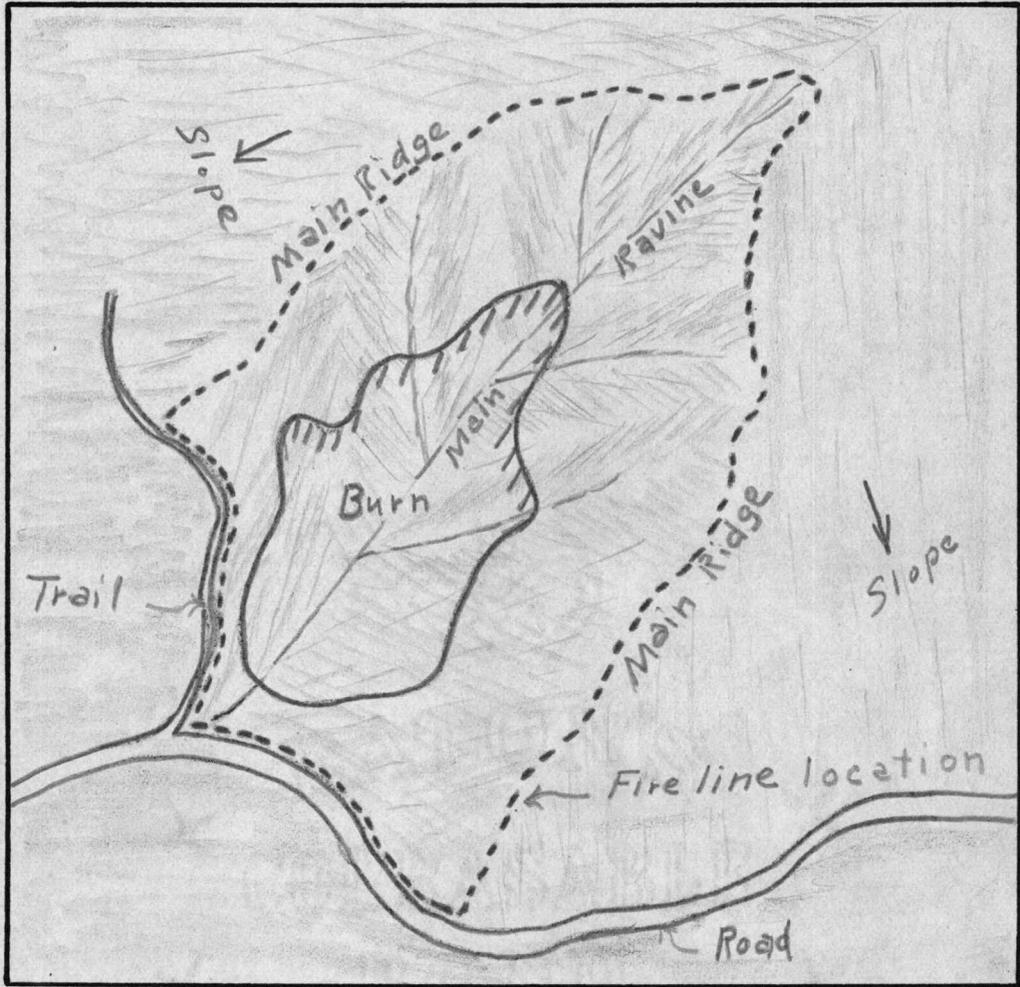


Fig. 5. A fire burning in steep, rugged country with occasional open ridges interspersed with heavily timbered canyons and brushy slopes. (1:27)

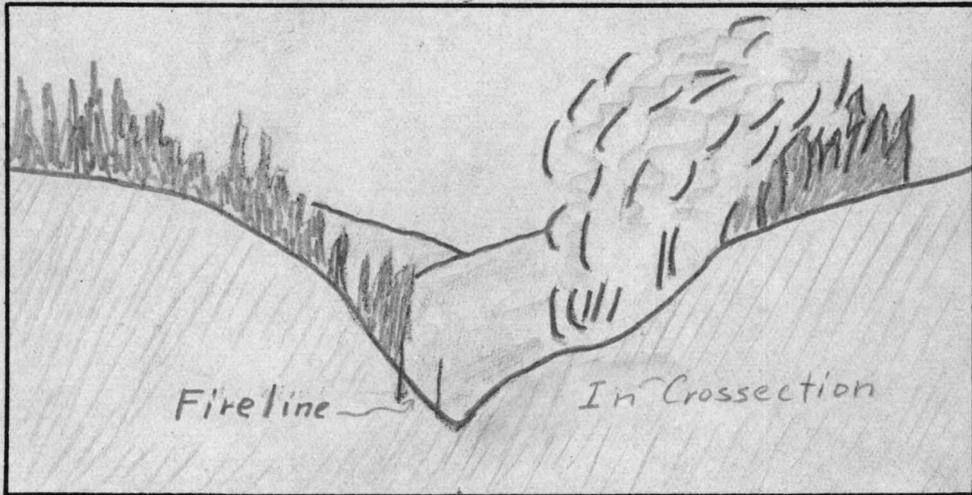


Fig. 6. How to locate a fireline to control the lower flank of a fire on steep ground. (1:19)

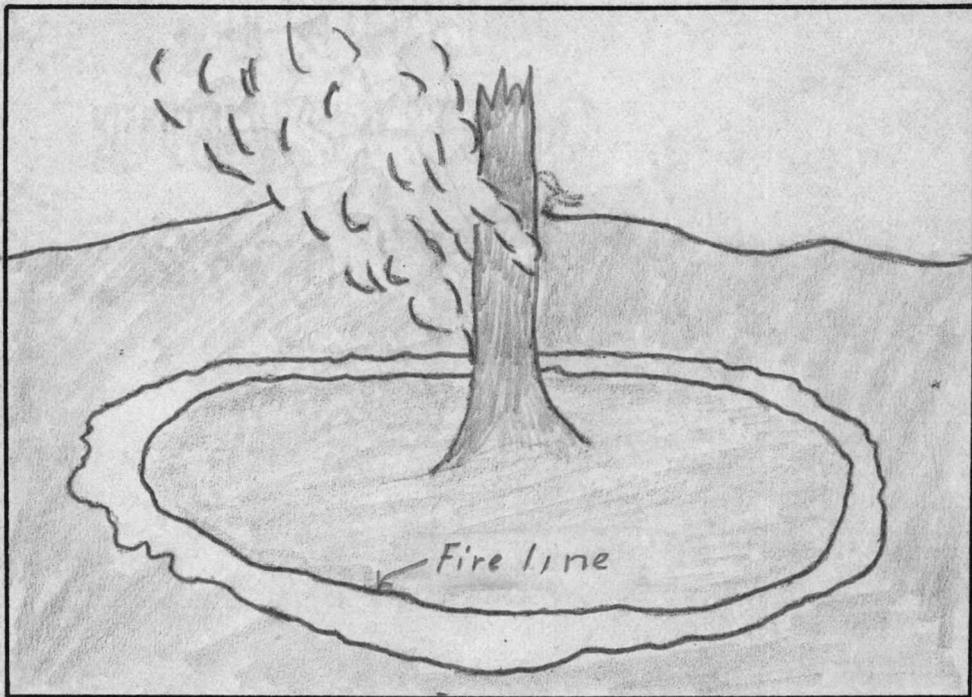


Fig. 7. Fire established in snag above the base (1:4)

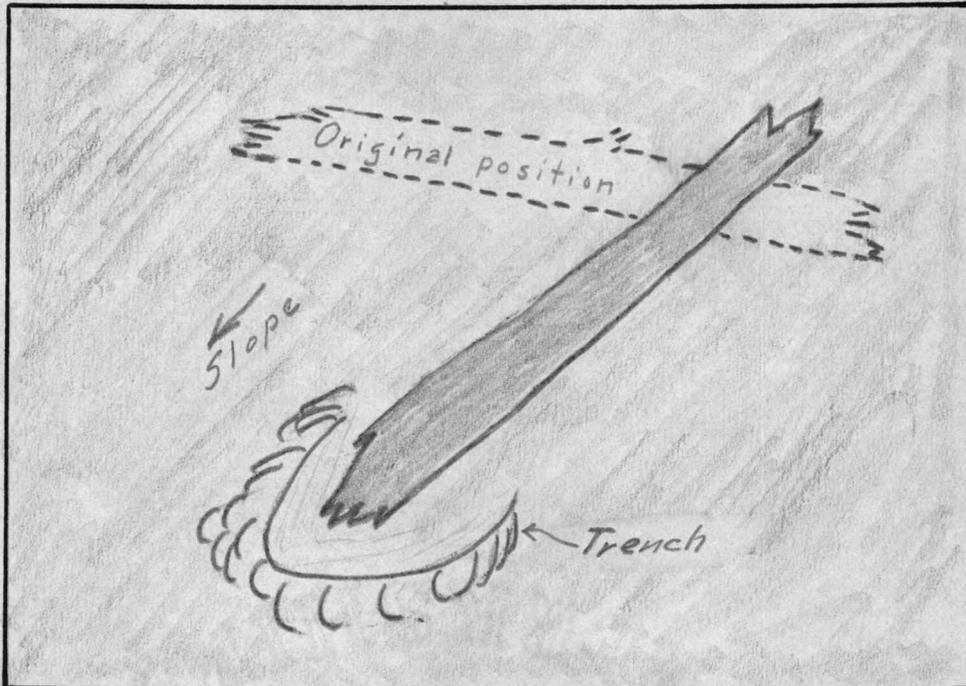


Fig. 8. How to place movable, burning logs so they will not roll. (1:55)

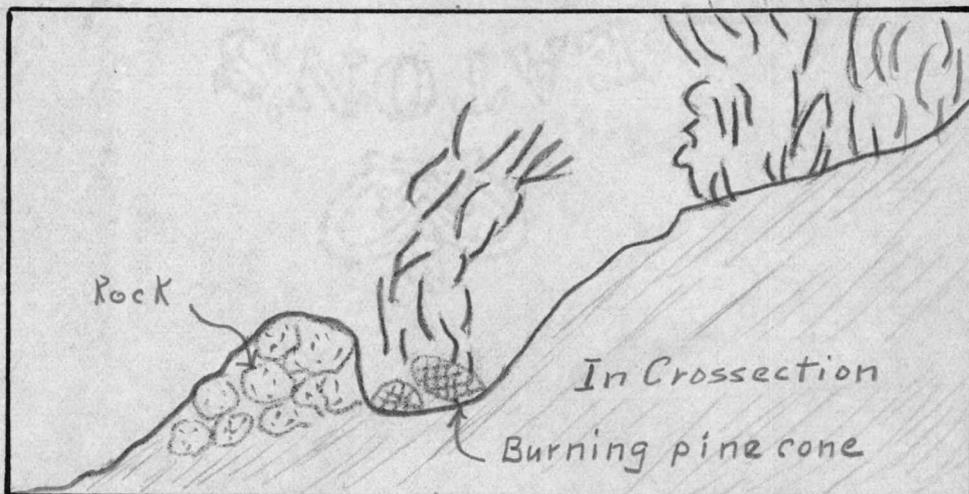


Fig. 9. How to build trench to handle rolling material in rocky country. (1:32)

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