FIRE GUARD TRAINING HANDBOOK

U.S. DEPT OF AGRICULTURE
FOREST SERVICE

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F O R E W O R D

Most forest fires are discovered and handled in their early stages by fire guards. In these critical early stages the judgment and competence of the Forest Service in fire control is largely measured by the judgment and competence the fire guard puts into his work. In a very real sense, the fire guard is the Forest Service at such times and the respect accorded the fire control work of the Service rises or falls according to the intelligence, techniques and fortitude the guard employs.

Since the nature of the response a fire guard makes to the occurrence of a fire depends in large part on the quality of the training he received, such training can hardly be given too much attention.

In this initial issue of a Service-wide fire guard training handbook, a Committee representing all Regions of the Forest Service has taken an important first step toward betterment of our training practice.

It is our hope that during the 1937 fire seasons this handbook will be studied and applied by all who have responsibilities for training of fire guards. From such widespread study and experience with the handbook, it should be possible next winter to bring together a large amount of constructive criticism and material illustrating the use of good methods for training in specific fire control techniques. During the winter of 1937-1938 it is planned that this edition of the handbook will be reviewed and expanded and then printed in final form.

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INTRODUCTION

Fire guard training is not a new activity of the Forest Service. Its importance has been realized for many years and it has been carried on with ever increasing efficiency, particularly since the fire conference held at Mather Field, California, in November, 1921. At that conference, the committee to which the subject of guard training was assigned recommended group training of the guards on each forest, the training course to be arranged after determination of the requirements for each protective position. In commenting on the committee report the Chief said that at least three days' training should be given to all untrained men, and instructions to that effect were later put in the National Forest Manual.

From the beginning of fire guard training, rangers and staff officers have had to plan the training programs and serve as instructors. In the earlier years it was not fully recognized that these men, however familiar they might be with the subjects they had to teach, were not ordinarily trained as instructors. For this reason, and because they had no training handbook to use as a guide, they were not able to make scientific analyses of training needs, adequately prepare for their instruction work, or impart their knowledge to others in such a way that it would be thoroughly understood. Competent engineers often had difficulty in teaching compass work and map reading, and many rangers with long experience in fire suppression were not able to do a good job of instruction in fire suppression technic.

Although the approved Mather Field Conference Report said a guard training course should contemplate that the men would demonstrate through field performance, so far as practicable, their ability to measure up to the standards set for their various jobs, training for many years after the conference consisted largely of lecturing. Little or nothing was known of the approved vocational training methods, and efforts were concentrated on the spring training camp with insufficient attention to pre-camp training, training in place, and follow-up training. Only in recent years has the necessity for an instructor's textbook, outlining scientific methods of analyzing training needs and planning and carrying out well-rounded training programs, been fully realized. It is to provide such a textbook that this handbook has been compiled for Service-wide use.

The fire guard force consists of lookouts, lookout-firemen, firemen, patrolmen, campground registrars, and protective assistants or dispatchers. These titles are indicative of the main duties of the various individuals. The bulk of the fire protection work is done by the fire guards, under the supervision and with the aid of other members of the forest organization. It is their job to prevent fires through the right kind of public contacts and law enforcement; to discover, locate, find, and put out fires that start; to maintain communication lines; and to record information and make reports which are necessary for prevention and suppression plans. This varied and vitally important work must be done by temporary employees who work from $2\frac{1}{2}$ to 5 months each year for the Forest Service. The income from this short period of employment is so meagre that many of the men find it necessary to seek other, more permanent work as soon as they can.

Also, it is desirable to use forestry students in a substantial number of the positions, and as they complete their courses and secure permanent employment, their places must be filled with new and untrained men. For these reasons the annual turnover in the fire guard force is very high. In the four western regions it amounts to around forty per cent and this means that about 2000 men must be selected to fill vacancies in these regions every year. These men are drawn from widely divergent walks of life. Some have native ability, but little formal education; others have less native ability, but more education. If this large number of new men with varied experience and education, as well as those who come back year after year, are to function efficiently in the important positions they fill, they must be trained in the fundamentals of their jobs just before or immediately after they take up their work in the forest. And this training cannot be haphazard; it must be done by trained instructors, thoroughly prepared and using scientific methods. If it is not well done, fire prevention will suffer and fires will get away through failure of guards in key positions to take necessary and adequate action.

Throughout the fire season fire guards make many more public contacts than yearlong officers. The public looks upon them as rangers, representatives of the Forest Service. Therefore, the impression the public gets of the Forest Service in any particular locality, and generally throughout the country, is largely determined by the kind of impression made by the fire guards. Whether or not this impression will be of a kind to gain public respect and good will, and thus enlist public support in fire prevention and forest perpetuation, depends on the efficiency and

thoroughness of training in the art of making public contacts. Failures of guards to meet forest users in the right way and to take advantage of every opportunity to further fire prevention continue to impress the need for better training in this important work.

There are failures in detection and suppression also. The primary purpose of the fire guard force as a whole is to discover, locate, find, and put out fires. While prevention is of first importance in some positions and an essential part of many fire guards' duties, it is not possible to eliminate man-caused fires altogether and in many parts of the country numerous lightning fires must be handled every year. Impartial investigation and careful review of fire records show that in many cases fires became large because someone failed to do the right thing at the right time, and in many other cases there were failures that might have resulted in large fires under slightly different conditions. Not all failures are made by guards; many are made by yearlong officers, who also need training in the highly technical work of fire suppression. But the guards must be depended upon to discover the small fires that spring up throughout the forest, to locate them accurately on the map, to seek them out when dispatched to them, often under very difficult conditions, to take proper fire suppression action, and to stay with the fires until every spark is out. It is necessary that these men act largely on their own responsibility. They must know what to do and how to do it. If they have not been properly and thoroughly trained, they cannot be expected to function with high efficiency in fire emergencies and failures, often with disastrous results, will continue to be recorded.

The fire guard organization is the first line of defense and generally must be kept intact while large fires are burning, in order to insure prompt detection and suppression of other fires that may start and to carry on important prevention work. It, therefore, becomes necessary to rely upon CCC, road and trail, and other forest improvement crews, and upon cooperative organizations of local residents, for suppression of large fires. While the overhead positions are filled insofar as possible by members of the regular forest organization, including specially qualified guards who can be replaced in their regular positions, many improvement foremen and cooperators must be used as straw bosses, foremen, and in other overhead positions. These men, who form the nucleus of the second line of defense, must also be thoroughly trained if effective fire suppression is to be attained. The importance of this work can be appreciated when it is understood that actual application of good fire suppression technic lags far behind forest officers' knowledge of such technic. It would be very unusual and most encouraging to find the record of a large fire on which all the practices recognized as desirable for many years had been applied and where none of the errors commonly found had been made.

The Forest Service has known almost from the time of its establishment that fire trenches should be constructed as close as possible to the fire edge, that they should be no wider than necessary to control the fire, that all unburned material inside the trenches should be burned promptly, and that burning snags and snags that may catch fire should be cut. Yet inspectors continue to find these and other fundamental principles of fire suppression technic violated or neglected. They also find poor organization on the fire line, in the fire camps, and in the service of

supply. The only way to obtain proper organization and the application of correct technic in fire suppression is to train the overhead, including not only the guards, who need such training for small fires and who may be used on the larger fires, but also a sufficient number of other men to supply ample overhead in any emergency.

It is not feasible in this handbook to analyze, in detail, the training needs of each Region or Forest. There are minor variations between units in fire problems and in human material. Also training needs change from year to year.

Every Forest Officer who must train others as a part of his major duties should possess an understanding of correct training principles and the technique and knowledge necessary to discover and satisfy training needs.

Part One of this handbook has been divided into three sections: Section I relates to the general types of training, and outlines in some detail the physical means used in the training of individuals or groups of individuals; Section II lists and discusses the methods and techniques of instruction, with particular emphasis on those applicable to the guard training job; Section III suggests a plan for training instructors.

Part Two is divided into two sections: Section I, entitled "Determination of Training Needs", explains and illustrates the methods used in breaking a job down into its component parts and in appraising the training needs of the employee; Section II deals with methods of organizing a season long guard training program.

Part Three lists representative training jobs.

The methods and principles herein outlined may, in general, be applied to almost any kind of Forest Service training.

PART I - SECTION I

TYPES OF TRAINING

The Forest Service fire guard organization receives its training through a combination of instruction, study, observation, and experience No single factor in itself will develop a thoroughly trained guard.

In considering the broad field of training, recognition must be given to two rather distinct types of training, namely, "training by absorption" and "training by intention".

Training by Absorption

This type of training is called training by absorption because the individual "absorbs" or picks up the knowledge or ability without the help of an instructor and without any plan for his training. In training by absorption, there is no formal recognition of the trainee-instructor relationship.

There are two kinds of training by absorption:

1. An individual learns how to do things or acquires knowledge merely through association, without the help of an instructor. To illustrate: A guard is stationed at a ranger's headquarters at which there is also a dispatcher. The guard acquires, perhaps unconsciously, a knowledge of the dispatcher's job sufficient to enable him to handle the latter's work in his absence, merely through hearing discussions of the dispatcher's responsibilities and work.

This kind of training has a distinct value to the Service, as the individual acquires something that may widen his usefulness beyond the ordinary limits of his job.

2. In the second kind of training by absorption, the individual acquires knowledge and abilities needed for his particular job solely through and in connection with his work, and without the help of anyone.

Obviously this kind of training is costly, slow, and ineffective. In fire control work, dependence upon it invites disaster. Fire control officers must know the extent to which the knowledge and ability of guards can be depended upon. This assurance of definite training is obtained through training by intention.

Training by Intention

The difference between training by absorption and training by intention is that in the latter there is a clearly recognized plan for training.* In a plan for training, certain forest officers are made responsible for organizing and carrying out the training program. Some men have the definite job of training; others have the equally definite job of learning. The trainee-instructor relation is recognized by both the trainee and the instructor.

In preparation for training by intention, decisions are made as to who shall receive training and in what jobs, the training needs of an individual being determined by comparing his present knowledge and skill with the requirements of his job.

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* The planning of the training program is discussed in Part II, Section II.

Methods of Training by Intention

There are two general methods recognized in training the Forest Service guard organization, namely, (1) individual training and (2) group training.

Individual training is the simpler form, and may be accomplished in a number of well recognized ways: (1) Training in place,* (2) training in conjunction with inspection,* (3) training by telephone, (4) correspondence and correspondence courses, (5) self-application, (6) training through assignments or details. These terms are herewith briefly discussed and examples are given to illustrate their application in the training program.

Training in place - The trainee (guard) is on the job and is being instructed in certain duties or operations in connection with his work.

This situation provides an ideal setup for obtaining effective results. The trainee sees and appreciates the need for knowing how to perform correctly the duties of his position. The instructor demonstrates and explains under actual working conditions, and with the equipment the trainee will use; nothing is left to the imagination.

To illustrate: A district ranger, having packed a lookout into his station, gives the lookout instruction in how to orient his fire finder.

This type of training has certain disadvantages, the chief one being the time element. As a matter of fact, it would be impossible for

*The difference between "training" and "instruction" as referred to here, is that instruction is accompanied by a certain amount of supervised drill.

either the fire assitant or the district ranger to visit every member of his guard force within a few days after the fire season begins and give him instruction by personal contact on the job. For this reason the guards on a ranger district, or on a forest, are assembled as a group for a few days of intensive training immediately before they go to their respective positions on the Forest. Another disadvantage is that the training officer has a tendency to forego the use of approved training methods and also to lose sight of his training objectives.

To be fully effective, the instructor responsible for conducting "training in place" must plan his course of action in advance of the contact. This means he must have in mind certain training objectives and the plan of instruction best suited to reach these objectives with the minimum of time and effort.

"Training in place" is discussed further in Part II, Section II.

Training in Conjunction with Inspection - The individual members of the guard organization are inspected periodically by the district ranger or other superior officer. During the course of inspection when weaknesses are discovered in ability to do a job, or essential knowledge concerning it, the inspector drops the role of inspector and takes on that of instructor.

Training goes hand in hand with inspection, and every effort should be made to develop in the mind of the guard the fact that the inspector is there partly for the purpose of giving him assistance, advice, and instruction on the basis of his more mature judgment gained by a longer period of service and training.

The inspector, likewise, should not consider himself as a "hard-boiled" superior officer there to ferret out the failures of the guard, and to discipline him accordingly; rather, he should approach his job in a friendly spirit with the purpose of learning where the guard is having trouble or is likely, through misunderstanding or lack of knowledge and experience, to make errors in the performance of his job. Then, by means of carefully planned and skillfully presented instruction, the inspector should remedy the guard's weaknesses and thus reduce the possibility of mistakes.

It is obvious that a good inspector must of necessity be a good instructor, skilled in the selection and use of approved instruction methods, which will give the training needed with the least expenditure of time and effort.

Unless the inspector plans in advance just how he will approach his job to find out quickly and efficiently where his assistance is needed, the effectiveness of the personal contact with the guard is materially reduced. Also, without a plan of action the inspector is likely to pass the time of day with the subordinate, have lunch with him at his station, engage in some local gossip or pleasantry, and be on his way without accomplishing the real purpose of the inspection.

The need and value of inspection outlines as a guide for the inspector, and as a means for self-inspection by the guard, is discussed in Part II, Section II, on page 120.

Training by Telephone is primarily a method of individual training in which the protective assistant, ranger alternate, ranger, or other

forest officer gives instruction to individuals of the guard organization over the telephone. In case of a party line with two or more guards listening in, and actively participating, it might be classed as group training.

Telephone training, while not so effective as "in place" training, can be a highly efficient method for certain training jobs provided it is well planned and executed. Just telephone conversation is by no means training. The instructor-trainee relationship must be recognized by both parties; the instructor must have a specific training objective in mind and plan his instruction accordingly. The trainee must understand clearly what is proposed for him to learn.

The following examples are given to illustrate telephone training:

(1) In the evening or during rainy weather, when the lookout has some spare time, the protective assistant calls him on the telephone. He informs the lookout that he is going to give him a problem to work out with his fire finder. He then states the problem and asks the lookout to figure out the result and report the answer. The lookout, with the use of the fire finder, figures out the answer, which is already known to the instructor, and reports. If the answer is correct, the instructor assumes that the lookout has gone through the necessary steps correctly and knows the job. If the answer is in error, the instructor requires the lookout to explain, in detail and step by step, just what he did and when the error is caught up the instructor explains just what is necessary to do the job correctly. He then requires the lookout to try another problem similar in nature and to report his

findings as before. The process is repeated until the instructor is sure the lookout knows how to work out that particular type of problem.

(2) The district ranger calls a guard at his station by telephone and informs him that he, the ranger, is going to take the part of a fisherman who is calling to obtain certain information. He then proceeds to carry on a conversation with the guard asking questions concerning fishing, camping, and fire permits, and carefully notes the answers given by the guard. If the answers are acceptable, the ranger concludes that the guard would handle like situations with the public in a satisfactory manner. If the answers are not satisfactory, the ranger explains how the questions should be answered, and immediately following, or at a later date, repeats the process until he is sure the guard is handling his public contact work in a satisfactory manner.

Telephone training has been used in the Forest Service for a good many years. Its effectiveness naturally is in proportion to how well it is planned, subsequently carried out, and followed up. While not so effective as "in place" training, it does have the advantage of keeping the guard "on his toes" and keeping the problems of his particular job vivid in his mind. Also, it has the advantage of saving a great deal of individual travel and can be carried on at frequent intervals with a large number of widely scattered forest guards.

Correspondence and Correspondence Courses differ in that correspondence may consist of one or more individual or circular letters containing information or instructions, while a correspondence course consists of a series of written lessons progressing from the known to

the unknown, from the concrete to the abstract. Both, if conducive to active thinking with respect to the job, contribute to individual training.

Written instructions to the guard organization are usually compiled in an orderly manner in the form of a Guard Handbook and are occasionally supplemented with special instructional material.

Practically all the training a guard receives either at the Guard Training Camp or "in place" is included in the Guard Handbook. A correspondence course, even if comprising a few lessons only, can be planned to stimulate and direct study of the Guard Handbook, the Fire Plan, use and care of equipment, and other phases of the guard's job.

In its simplest form, correspondence lessons might consist only of a number of thought-provoking questions, the answer or key to the solution being contained in the instructional material at the guard's station.

To illustrate:

(a) Questions for a patrolman, fireman, or lookout fireman.

1. How many degrees are there on the azimuth circle of the compass?

   _____. How many degrees between N & E?_____.E & W?_____.

2. How do you tell which is the North end of the needle?_____

   _____

3. Fore sight reading on a compass is 156°, what is the computed back sight reading?_____Fore sight reading is 301°, what is back sight?_____

4. What six points or facts should be established in connection

with a law enforcement case?_____ _____

_____ _____ _____.

5. What is meant by "orienting" a map?_____

_____.

(b) Questions for lookouts and lookout firemen.

1. What is the order in which to give a fire report?_____

_____.

2. What is the name of the prominent peak on the horizon from your station, azimuth reading 125°14'?_____.

What Township, Range, and subdivision of the section is it in?

_____

3. How often should you check the orientation of your firefinder?

_____

4. A fire is throwing up black smoke, what does this probably indicate?_____

5. There is a large fire burning ten miles east of your station. The reading on the nath side of the fire is 87°. The reading on the south side of the fire is 92°. What is the length of the fire north and south?_____feet.

Another approach which can be used through correspondence is a series of problems to be solved. For example, problems similar to the following would be sent to a lookout-fireman.

(1) You are at your station; your firefighting equipment is all assembled, ready for a quick getaway. Your phone rings and the Protective Assistant or Dispatcher gives you a complete report on the location, character, and estimated size of a fire to which you are to go. You have

copied on the lookout report form every detail, as given to you by the Protective Assistant or Dispatcher, and repeated it back to him.

a. What else would you do to make sure of the location of the fire? _____

b. The report reaches you at 9:00 p.m. The fire is eight miles away, good trail for six miles, balance of way across country with no trail. When would you start? _____

(2) You take two men and reach the fire at 2:00 a.m. the next morning. It has spread to twenty acres in down timber, some snags. You decide you need help.

a. What would you do with man No. 1? _____

_____

b. What would you and the other man do? _____

_____

c. The fire is man-caused. What is one of the first things you would do upon arrival? _____

(3) The fire spreads rapidly and reaches one hundred acres by 12 noon. You and your one man can do nothing to control it. You expect help any minute. What would you do until help arrived? _____

_____

In preparing a correspondence course, or even a single set of questions, the author must guard against wording which might be interpreted in more than one way. He should strive for clearness of thought and expression and review his work from the standpoint of the reader.

Answers to questions or solutions to problems worked out by the guard and submitted to the ranger should be reviewed and returned promptly. One certain way of killing interest in correspondence training is that of allowing papers submitted for review and correction to remain unattended or unreturned for long periods of time.

Correspondence courses can also be used as a means of pre-employment training with the guard organization and particularly with new prospective employees. Courses designed for pre-employment training must be especially well prepared to avoid confusion and misunderstanding on the part of the trainee. Papers submitted by the trainee in conjunction with the correspondence course will assist the ranger or other forest officer to some extent in appraising the individual's knowledge and planning his future training program.

It is not uncommon, owing to weather and other factors, for a lookout to go through an entire season without having a fire to detect and report, or for a fireman to go through an entire season without active fire fighting experience. In cases of this kind, it will be appreciated that there may be some tendency for these men to let down. For such situations correspondence courses, along with telephone training and personal contacts through inspection, tend to keep the guard "fire conscious", that is, mindful of the fact that although there have been no fires this month or this week there is no telling what may happen tomorrow.

Self-application refers to all those learning activities engaged in by an individual upon his own initiative and without any appreciable amount of assistance. To illustrate:

(1) An individual who hopes to be employed as a forest guard may be furnished with certain instructions, a Guard Handbook covering the duties of the various positions of the guard organization, and a map of the Forest. If he spends time in reading and studying these, improving his ability to get or to hold the job, he is engaging in "self-application".

(2) Prospective employees, or employees who are off duty, visit going jobs with which they are unfamiliar for the purpose of learning how the work is done.

Guidance and encouragement of "self-application" take little time on the part of the forest officer, but in order to obtain the best results he should realize that they must receive some attention and a certain amount of planning. The trainee should be guided to some degree in his reading and study, to see that he is occupying his time to the best advantage. He should also receive encouragement in his efforts and from time to time be given an opportunity to ask questions about any matters which he does not clearly understand.

While some creditable results have been obtained through "self-application", no doubt a great deal more could be done along this line; many training officers are overlooking a very real opportunity for obtaining training values in this way with very little investment in time and energy.

Training through Assignment or Detail, as the term implies, means assigning individuals to a field of special activity, such as a "going" fire, primarily for the purpose of giving them first-hand actual experience. Experience gained through active participation, under good leadership, provides a most excellent form of training and cannot be substituted for in any way.

Forest officers in charge of Fire Control are primarily concerned with preventing fire, or, if a fire does get started, with "getting" it while it is small. In proportion to their successful accomplishment of this objective, the opportunities in a given locality for experience on major fires become less and less. Nevertheless, Fire Control must anticipate the possible major conflagration and need for experienced "overhead" to handle it. As a part of the Fire Control training program, yearlong forest officers and members of the guard organization are detailed to "going" fires to give them this very necessary first-hand experience.

Group Training is the activity of giving similar instruction to two or more trainees at the same time. One of the more complicated forms of group training with which the Forest Service has to deal is represented by the guard training camps held each year just prior to the opening of the active fire season on the national forests.

These training camps are held for the purpose of giving systematic instruction to the forest guard organization in the jobs which must be performed by its members, individually and collectively, during the fire season.

A guard training camp confined to a ranger district usually has from 10 to 20 guards in attendance as trainees and from 3 to 6 instructors. A guard training camp for an entire forest has from 50 to 120 guards in attendance as trainees and from 6 to 20 instructors. Guard training camp instructors include district rangers and other yearlong forest officers and also certain well-qualified and experienced guards.

While it is generally recognized that "individual training in-place" is more efficient than group training, there are a number of distinct advantages and reasons for group training; the more important are that it:

(1) Quickly acquaints each member of the guard organization with the essential responsibilities of the position which he is to occupy, before he goes on duty.

(2) Effects a material saving of instruction time and of cost.

(3) Provides an opportunity for the guards to become acquainted with each other and with their supervisory officers.

(4) Provides an opportunity for an informal exchange of ideas, from which a certain amount of training is received.

(5) Builds up group spirit and morale.

PART I - SECTION II

INSTRUCTION METHODS

Instruction, properly planned and executed, is the first step in training the guard organization. Instruction is designed to originate and develop correct habits of thought and manipulation.

In planning instruction the questions arise: On what level should instruction begin, and what level of knowledge and ability is desired as a result of the instruction given. The past experiences of the trainee influence his ability to learn a new job easily. How much or how little the trainee already knows about the job should influence the instructors' choice of a method of instruction.

With reference to a specific job any individual may be classed in one of the following levels of knowledge and ability.

Levels of Knowledge and Ability

Professional Ability
Amateur Ability
Appreciation
Information
Ignorance

Levels of knowledge and ability may be illustrated as follows: It is decided to select and train several CCC enrollees for emergency lookouts. The company they are to be selected from has just arrived from New York; they have never seen or heard of a lookout, so would fall in the "Ignorance Level" with regard to this job.

This same company arrives on a forest in June; the boys see a "lookout tower" and ask their foreman about it. He explains the use of the tower and the duties of the lookout -- they now have some information and fall in the "Information Level".

Certain enrollees become interested in finding out more about the lookout job, so visit the regular lookout on several occasions, ask and receive information and observe the lookout as he goes about his job. They reach the "Appreciation Level".

One of the enrollees strikes up a warm friendship with the lookout and visits him at every opportunity; during these visits he learns the names of the peaks, ridges and streams, watches for fire, and gets so he can use and read the fire finder. He reaches the "Amateur Ability Level".

The enrollees interest in a lookout's job is noticed by the ranger; anticipating the need of an emergency lookout, the ranger checks on the enrollee's present knowledge, gives him some additional training, and puts him on an emergency station the first of August. Now the enrollee is a lookout, responsible for detecting and reporting fires for a given portion of the forest; several electric storms put him under pressure. By experience, his judgments as to distance, real smoke, and location steadily improve. When he finally comes off the station in October, he has attained the level of "Professional Ability".

These examples are sufficient to emphasize that unless the instructor accurately determines the trainees' "Level of Knowledge and Ability", the instruction given may be "over or under" the trainees' heads; resulting in a loss of interest and inefficient instruction.

But more important, from the standpoint of efficient instruction, is that a method of instruction suited for trainees in the "Amateur Ability" level might be entirely unsuited for those in the "Ignorance" or "Information" level.

Instruction for Developing Efficiency

The guard training program is all directed toward the development of efficient guards. Instruction, an important step in the training program, must be planned to include the several major elements which go to make up Efficiency on the Job. Richard and Allan* list 5 elements in their formula for efficiency on the job. With slight modification in wording it is as follows:

Elements which go to make up
Efficiency on the Job

= some combination of

1. Doing ability
2. Technical knowledge
   a. Mathematics
   b. Drawing
   c. Science
3. Job Judgment
4. Understanding of the entire (Fire Control) Organization.
5. Morale

After analyzing any job the guard performs, the instructor will readily recognize the above 5 elements. To illustrate by referring again to the job of a lookout in locating the reporting a fire:

(1) Doing ability involves the manipulation of the Fire Finder.

(2) Technical knowledge - reading the horizontal and vertical angles on fire finder, computing distance and location on map, deciding "cover type" fire is burning in by color and volume of smoke.

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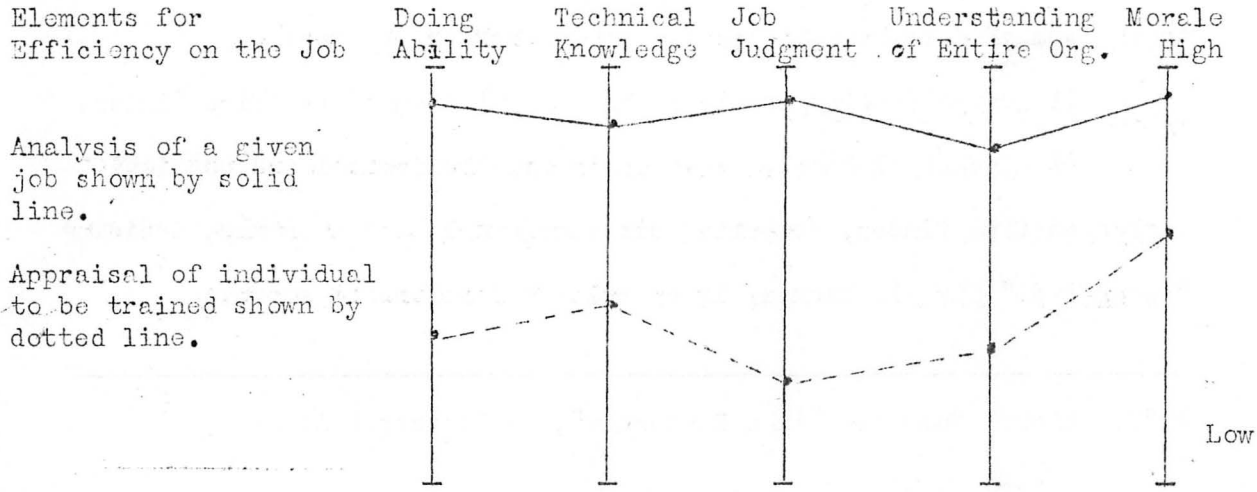
* "Vocational Education in a Democracy", by Prosser & Allen

(3) Job Judgment - distinguishing between "false" and true smoke, estimating distance to fire and number of men needed for suppression.

(4) Understanding of the entire Fire Control organization - the lookout knows: that the suppression crew depend on him for quickly detecting and accurately locating the fire; consequences of wrong location and result of delay; the importance of his job to the organization as a whole.

(5) Morale - scanning the country with clock-like regularity throughout the day although there have been no fires all season; staying in the tower when it would be more pleasant to get down on the ground; getting up once or oftener during the night to look the country over for fire; staying on the job during a storm, when lightning is "cracking" all around the tower. The above examples of morale might be termed duties, and morale described in such abstract terms as loyalty, honesty, interest in the work, and pride of accomplishment. Of course they have to do with morale, but conscientious performance of the duties first outlined takes morale of the highest order.

For the purpose of determining what instruction an individual needs for a certain job, the following sketch may be of some value;



In the case of instructing a new guard, all of the elements for "efficiency on the job" would be planned for in the instruction. However, a guard with one or more season's experience might need more specific instruction in some one element than in the others. For example, a look-out's estimate of the size of a fire is not reliable; investigation brings out that he "shoots" both sides of the fire with his fire finder, but does not know how to compute the "vertical leg" of the angle. He needs further instruction in the element "technical knowledge".

There is a direct relationship between the instruction needed and the method of instruction best suited for the job at hand. The training officer is concerned with selecting the method of instruction which will stimulate the trainee to the required action, mental or manual, necessary to insure his remembering or doing the thing set up as the objective for the instruction.

Effectiveness of instruction is measured by:

1. The degree to which the trainee has grasped the new ideas or can do the new job at the completion of the instruction process.

2. The time required to obtain this result.

3. The expenditure of energy and effort on the part of both the trainee and the instructor required to obtain this result.

Methods of Instruction

Experience has shown that there are five methods of instruction applicable to the guard training program. They are as follows, listed in the order of diminishing importance or suitability for use.

1. The Four-Step Method.

2. The Conference.

3. Problem Solution or Case Method.

4. Dramatization.

5. The Lecture.

There is a place in the training program for each method. The selection of the proper method is governed by the training subject and the "Level of Knowledge and Ability" of the trainee. Each method is particularly well suited to certain training jobs and each decidedly unsuited to others.

Every forest officer, owing to the nature of his work, must from time to time take on the role of an instructor. His job of instructing will be easy or difficult, time-saving or time-consuming, effective or ineffective in proportion to his understanding of an ability to select the best method of instruction for the particular training job at hand.

The following pages are devoted to an explanation of the several methods of instruction, with examples to illustrate how each may be used and suggestions as to topics and situations for which a method may be unsuited.

Immediately following each explanation, suggestions are made as to what advance preparation is required of the instructor; also lesson plans are described and instructions for making and using them are included.

THE FOUR-STEP METHOD

The four-step method of instruction, stripped down to essentials, is easy to understand and simple and practical to use. The instruction process progresses through the following four steps*, known to the instructor but not necessarily evident to the trainee:

Purpose

Step I. To stimulate interest in the proposed instruction, to introduce the topic and to verify the estimate of the trainee's present level of knowledge, in certain instances, to provide a base for the lesson.

Step II. To instruct the trainee by some combination of demonstrating, illustrating, explaining.

Step III. To have the trainee try the job for himself - instructor checks for errors and gives additional assistance if necessary.

Step IV. To check the trainee's ability to do the job unaided and his essential knowledge pertaining to the job.

The following material elaborates on the reasons for each step and suggests ways for carrying out each step in practice.

Step I

The purpose of Step I is to get the learner in a mental state of expectancy toward the process or job which he is to learn. It involves the act of raising in the learner's mind the query, "How do you do it?" and "How is it different from what I already know?" It is a process of

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* The four-step method of instruction was developed by Chas. R. Allen and is described in his book, "The Instructor, The Man and The Job". In this book Step I is called "Preparation", Step II, "Presentation", Step III, "Application", and Step IV, "Test".

mental concentration by which the learner is caused to bring up in his mind all the information which he possesses about the job that is to be taught. When the instructor is confronted with a situation in which the trainee has no knowledge or experience to which the proposed instruction can be tied Step I must establish a base for this purpose. Theoretically, Step I is at an end when the learner reaches the point of desiring to acquire this new knowledge or skill.

Comments on Step I: A lengthy address is not desirable for carrying out Step I. In fire control training, time is at a premium; and so no instruction is intended in this first step, it should be made as brief as is consistent with the accomplishment of its purpose. Suggestive questioning has proved to be the most satisfactory method for its accomplishment. Capitalize on the need or value of learning.

In this step, the instructor takes the initiative. Good judgment must be used in selecting the method for Step I and in limiting the time for it. In planning Step I the instructor estimates the trainee's present knowledge of the job; in the execution of Step I he verifies his assumption by questions. Even in the simplest lesson, there is a need for this step. Its omission will increase the difficulty of learning. An individual learns more easily if he can associate the new ideas with old ideas, if he can see a reason for learning, and if he can perceive a personal advantage in knowing or being able to do. This fact should be remembered; it is much easier to instruct those who are eager to learn than those who are indifferent. This is because the minds of the eager ones are in a receptive state.

Methods Which May be Used by the Instructor for Carrying Out Step I:

1. Suggestive questioning which will cause the trainee to:
   (a) Recall certain past experiences.
   (b) Recall the previous lesson.
   (c) Sense a personal advantage of knowing.
   (d) Realize a real need for knowing.

2. Suggestive Illustration. Use of pictures or sketches to create interest or build up a background which may be lacking in the trainee's experience.

3. Suggestive Demonstration. The instructor demonstrates how to do a certain job, concluding with a question, "Can you see the advantage of doing the job this way, or the need for knowing how to do it?"

4. A Story or Experience which will raise in the learner's mind the thought, "I may be confronted with a similar situation, and if I am it will be of advantage to me to know what to do."

Step II

Having directed the trainees' thinking to a point where they are ready to receive the new information, the instructor proceeds in Step II to impart the new idea, material, or operation; or, whenever it is possible to do so, to guide the trainee through the thinking process required to grasp the new idea for himself.

The skill of the instructor is put to a test in this all-important Step II. He must skillfully build new knowledge on what the trainee already knows. Instruction material must progress from the simple to the more complex. He must provide the trainee with an opportunity to assimilate new ideas as he goes along; unless this provision is made, the trainee very likely will become confused and discouraged. Finally he must select from a choice of methods (sometimes called instruction tools or devices) the ones which best impart the things which the trainee must be able to do and knowledge essential to that particular job.

Methods That May Be Used by the Instructor In Carrying Out Step II: Instruction in guard training topics will invariably require the use of some combination of the methods suggested below. The methods are listed in order of diminishing importance or usability.

(a) The Demonstration. The instructor demonstrates to the trainee how to do the job or solve the problem with standard equipment and under typical working conditions. For example, the instructor demonstrates how to hold the compass; how to swing an axe; how to spread dirt with a shovel in "knocking down" fire.

(b) Explanation. Explanation is a companion to demonstration. The instructor explains what he proposes to demonstrate or, preferably, after demonstrating something explains why he did it in a certain way. "Explanation" in the sense used here is a less formal equivalent of "lecture." To illustrate, in connection with a demonstration of the use of a shovel for throwing dirt to "knock down" fire the instructor might say, "You will notice that by a certain wrist movement a shovel full of dirt can be 'fanned out,' whereas without this movement the dirt would fall in the fire in just one lump and cover a very small portion of it."

(c) Suggestive Questioning. Many points in connection with the lesson necessarily must be explained by the instructor, but there are occasions when a number of points can be developed equally well by clearly worded questions. Questions that call for more than a "yes" or "no" answer require thinking on the part of the trainee; listening to an explanation does not necessarily do so.

To illustrate: The instruction deals with a one-man firemen's outfit. The class consists of six new men. The instructor has a reminder list of points which he expects to explain. A partial list is as follows: (1) The outfit must be kept in the handiest place for a quick getaway. (2) On returning from a fire, outfit is checked, brought up to standard, and reassembled. (3) Compass must not come in contact with other metal objects in the pack. (4) Emergency rations must be replenished. (5) Tools must be kept sharp. By suggestive questioning, points 2, 4, and 5 could be developed very readily by the trainees.

When trainees are given an opportunity to think out the right answer for themselves, they in effect commit themselves to doing the right thing rather than being told by the instructor "you must do so and so."

The instructor must be careful in the use of questions as to avoid embarrassing the trainee. When it is evident that a question has been asked which is beyond the trainee's ability to answer, the instructor should quickly throw the blame on himself by saying that he asked a poor question or one that was not stated clearly. This will alleviate the trainee's embarrassment by directing attention away from him.

(d) The Illustration Method. Illustrations including sketches, drawings, pictures or models, may be used by the instructor, for such purposes as to show the internal construction of a piece of apparatus or to put up to the trainee not the actual thing but that which resembles it, or sufficiently conveys the idea, to serve the purpose of instruction.

To illustrate: The class consists of an advanced group of pump operators. The instruction deals with relaying water for a considerable distance with a series of fire pumps. The instructor sketches the boundary of the fire, an adjacent creek, and the location of the fire pumps on a chart. With this as a background he proceeds with his instruction, which will have to do with the distance between pumps, the "lift" for each pump, hose resistance, and so on.

In the foregoing example, and in similar situations more or less mental picturing is required on the part of the trainee. Where the trainees have had some experience, the illustration method is a time-saver and can be used to good advantage. However, where the trainees' past experience has been such that they are unable to picture the real thing or the real situation, the method obviously will not work.

(e) The Lecture Method. "Lecture" as used here means giving certain required information in a rather formal manner. A lecture does not necessarily require any mental effort on the part of the trainee, and obviously does not call for manual effort. It can be used to advantage only in the case of very advanced students who have so much knowledge of the subject already that they can easily follow and understand the lecturer. Practically every job in connection with fire control combines manual dexterity and judgment. These qualities cannot be successfully imparted to the trainee by just talking. Where the lecture is used for this purpose, it may be regarded as the last resort of a poor instructor.

Comments on Step II. Many instructors have a tendency to go through a demonstration too rapidly; after the first demonstration to give the trainee an idea as to what it is all about, the instructor should proceed

slowly in order to give the trainee a chance to "catch on." In many instances, the demonstration could well be repeated two or three times.

IMPORTANT. Where the job to be taught is rather involved, for example, throwing a diamond hitch, which consists of approximately twenty operations, the instructor can determine natural breaks and, after demonstrating three or four operations, he may give the trainee an opportunity to try out that much of the lesson for himself. After the trainee has learned that part, the instructor continues with the next three or four operations, and so on. This really amounts to alternating between Step II and Step III. It is extremely important for the instructor to know at all times which step he is in.

"Sticking to the Job" in Step II: All that is proposed to present to the learner in the way of new ideas or knowledge is given during this step in the lesson, and it is necessary that this be a clean-cut piece of work. Nothing should be considered during this step which is not included in the instruction or meant to be taught in that particular lesson. Head off irrelevant discussion and conversation.

Effective Order in Step II; In this step of the lesson a series of ideas must be presented to the learner, and these ideas must be presented in the most effective order, this order having been previously determined. An efficient instructor will pay a great deal of attention to proper order in presentation. Failure to do this is a very common error of untrained instructors.

The Question of Emphases: In practically every lesson some points require more emphasis than others. The instructor must keep this in mind and give more weight to the more important points.

Technical or Trade Terms: Forest Service personnel use many words which are considered as "technical"; in fire control there are many words or phrases known as trade terms. Technical or trade terms should be underlined in the instructor's lesson plan and explained during the course of instruction.

Safety Practice: Safety practice, as it applies to the particular job in question, should be stressed in connection with instruction process. This is so important that it should be included under separate headings in Step II and Step III of the instructor's lesson plan.

In Step II the trainee has been presented with the instruction, but has not proved that he can follow it; the instructor has no evidence at this stage that the trainee has grasped this instruction and made it his own. The trainee has simply heard the instruction, or has seen a demonstration.

Step III

In Step III, the trainee is given an opportunity to apply the instruction presented in Step II. For example, if the lesson has to do with reading a compass, in Step III the trainee is supplied with a compass and proceeds to use it as instructed in Step II. If he has difficulty, the instructor gives him further instruction or assistance.

Certain explanations were made by the instructor in Step II. In Step III, through the medium of questions, he checks back to determine whether or not the trainee understands, and determines where additional instruction is necessary. Step III also provides for a certain amount of repetitive experience to fix the new ideas.

Methods for Carrying Out Step III:

A. Direct application or trying out on the job. Instructor assists when necessary, and asks suitable questions for checking essential knowledge. This is the most effective method.

B. For jobs which are not of a manipulative nature, there will be instances where the instructor can set up discussions during the course of which the various members of the group ask questions directed at other members and at the instructor. By guiding such a discussion and carefully noting what takes place in the way of questions and answers, the instructor can check the degree to which the members of the group have been instructed.

Comments on Step III: As has been previously pointed out, each individual must learn for himself. His learning actually begins when opportunity is provided for mental or manipulative activity. In group training, provision must be made for all of the individuals to try out the new job or solve the problem for themselves. A trial by one or two of the group does little or no good to those who stand around and watch them. In checking for essential knowledge, many instructors have a tendency to ask the following stock questions:

1. Is this clear to all of you?
2. Do all of you understand this now?
3. Are there any questions?

One of two things is sure to result from these questions. First, there is a profound silence in the group. Second, they will say "Yes". Fear of ridicule or criticism will prevent most people from saying, "No, I don't understand", after a matter has been explained or demonstrated. If, on the other hand, the instructor asks questions

which require more than a "yes" or "no" answer, he can determine definitely whether or not the individual or the group understands.

Step IV

The purpose of the fourth step is to determine in some suitable way whether or not the learner can do the job or solve the problem unaided; incidentally, it is also a check on the instruction process and the ability of the instructor. If the instruction process has been properly carried on up to this point, the instructor is ready to take a chance that the learner has been properly taught. If he is correct in this assumption, the instruction job has been completed; the learner is thoroughly instructed; he can do what the instructor intended that he should be able to do or he knows what the instructor intended that he should know.

Methods for Carrying Out Step IV:

A. The trainee does the job without assistance (suitable for simple manipulative jobs).

B. The trainee does the job without assistance and explains principles involved, reasons for the several operations, or procedure (suitable for more complicated jobs).

C. The trainee is required to pass a written test (suitable for some lessons in map reading, field markings, reports, forms, etc.)

D. The Trainee is required to pass an oral test.

Comments on Step IV: For instruction jobs of a manipulative character, Step IV is often a repetition of Step III. Repetition, however, has a real value in fixing correct work habits. Often a slight change in the situation will make the test more effective and interesting.

When instruction takes place on the job, and where the trainee, after the instruction proceeds directly to the job, the job itself may be considered as Step IV.

Exceptions to Going Through Step IV: When, as a result of instruction given in Step II, the trainee does the job in Step III up to standard, without help, answers all questions concerning essential knowledge satisfactorily, for the sake of saving time Step IV may be omitted. However, when it is omitted the value of repetition in fixing the desired mental habit is lost. When the trainee does require and receive help in Step III, Step IV must be carried out to be sure the trainee can do the job unaided. Instructors have a tendency to take too much for granted; make sure.

The Four-Step Method of Instruction Necessitates Advance Planning. The familiar saying, "a job well planned is half done" applies literally in the use of the Four-Step method of instruction. A clear-cut, effective job of instruction does not just happen, but is the result of painstaking preparation.

The instructor with a well thought out plan of instruction is sure of himself. His confidence commands the respect of the trainees. They think, "that fellow knows his 'stuff'"; or "he certainly makes things clear and easy to learn."

The instructor with a good plan of action does not easily get side-tracked with irrelevant talk. He has a definite objective and knows just how to proceed to accomplish it.

A lesson plan can be worked out on paper, and the time required to do this is more than justified by the excellence of the results obtained. The following example illustrates what is meant by a lesson plan. Subsequent material explains how to go about the job of making a lesson plan.

SAMPLE LESSON PLAN

[1] *Instruction Unit: How to make an emergency splice in #9 telephone wire.

[2] Limited to: How to make an emergency splice properly and an understanding of the function of each part of the splice.

[3] (Class: 8 men, inexperienced.
(
(Location: In the open -- tool storage shed.

[10] Material: #9 telephone wire, cut off in suitable lengths. Supply of sticks for inserting in loop.

[4] Estimated Time: 30 minutes.

[9] STEP I

Method for Carrying Out Step I.

Overhead Questions

1. Why is telephone communication essential for fire control on the forest?
2. Are there occasions when the lines might be broken?
3. Do you always have the necessary tools with you for making a standard splice?
4. Would it be a good idea to know how to make an emergency splice, without the use of tools?

STEP II

[5] Operations or Instruction Points. [6] Plan for Instruction.

1. Making the First Loop.
   - Dem. Amount of free end of wire to bend back and how to form the loop.
   - Ex. Loop is approximately $1\frac{1}{2}$" diameter. Two turns of free end around main line to form the loop. Note: there is about 16 inches of end wire that is not used.
2. The Second Loop which Forms a Mechanical Connection.
   - Dem. The free end of the second wire is slipped through the first loop, and the second loop is made in the same manner as the first.
   - Sugg. Ques. (a) Do you believe this splice will pull apart on account of the weight of the wire?
     (b) Will this splice make a good electrical connection?

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* The boxed numbers appearing in the lesson plan are for reference in connection with "how to make a lesson plan", which is discussed in the paragraphs immediately following.

3. Cross Free Ends and wrap Firmly Around Opposite Main Line. (Insert a Short Stick in Loop to Help Hold Wire)	Dem.	How to use stick in order to hold splice securely. How to close free ends of wire and wrap firmly to opposite main line to make electrical connection.
	Ex.	The reason for slack left in wires that cross over.
	Sugg. Ques.	(a) Which part of the splice carries the mechanical load? (b) Which part of the splice makes the electrical connection?
	Ex.	Good temporary connection important. Neatness unimportant. - - - - - - - - Will be replaced with standard splice at first opportunity.
4. How to obtain Slack for Making an Emergency Splice Out on the Job.	Ex.	Forest Service lines are constructed with considerable slack between hangers. - - - - - - - - Sufficient wire must be pulled through hangers before attempting to make splice. - - - - - - - - Occasionally a hanger must be loosened to obtain sufficient slack.

7 STEP III

Members of the class are given material and make an emergency splice. Instructor supervises and gives individual assistance as needed.

Instructor's questions for checking essential knowledge:

1. What might be the result if, in place of leaving slack in our wires that cross over, we pull them up tight?

2. What part of the splice makes the electrical connection - carries the weight?

3. What's the most important thing to keep in mind when making a temporary splice?

8 STEP IV

Members of class make emergency splice without assistance. Instructor inspects work.

How to Make a Lesson Plan

There is a logical order of procedure for making a lesson plan. In the following explanation, this order of procedure is numbered from one to ten. To illustrate this procedure, reference is made to the Sample Lesson Plan on page 39; to find the illustration of any step in "How to Make a Lesson Plan," refer to the corresponding boxed number in the sample lesson.

1. Decide on the Unit of Instruction and list it at the top of the page. Units of Instruction are ordinarily determined by an analysis or breakdown of the job; illustrated on pages 43-107.

2. Opposite the caption, "Limited to,*" state briefly but clearly what is proposed to be accomplished as a result of the lesson. Referring to page 22; What "level of knowledge and ability" is desired?

3. (a) Ascertain the number of trainees to be given instruction and their present "Level of Knowledge and Ability."

(b) Location - classroom or in the open; surroundings - actual, approximate, or imaginary job surroundings.

4. If the time for the lesson is limited, this must be kept in mind during subsequent planning of the lesson. If the time available is not limited, the time required can be estimated after the plan has been completed.

5. Analyze the subject or job that is to be taught for operations or instruction points and list them in their proper learning sequence. (See left hand column of Step II of Sample Lesson Plan.)

It will save time if the instructor will make a preliminary breakdown of the job or instruction topic on a separate piece of paper, commonly known as a work sheet. By doing this, the points can be combined or further broken down and finally rearranged for the best learning sequence and numbered accordingly. After this is done, operation or point number 1 is transferred to the sheet on which the lesson plan is being developed, and the method of instruction determined for this operation or instruction.

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* Up to the adoption of this handbook this heading has been referred to as the "objective" for the lesson. Hereafter the term "limited to" will be used in order to indicate the limits of the objective for the lesson.

point. Then the next operation or instruction point is transferred from the work sheet to the lesson plan, and so on. It is extremely important to make a thorough analysis for operations or instruction points. Reference is made to page 107 for a sample analysis. Omissions in the lesson plan may be discovered by the instructor during the course of instructions; however, when certain necessary instruction is omitted the trainee will be unable to do the job correctly or in its entirety and this may result in ultimate costly mistakes.

Where a complete analysis has previously been made of the guard's job it can be used by the instructor as source material in planning Step II of the lesson.

6. Decide on the most suitable method of instruction for each operation or instruction point and list on the opposite side. (Right-hand column in Step II.) The preparation of the right-hand column in Step II must be given the most careful consideration. It must include reminder notes to fully bring out doing ability required, knowledge required, and safety practice. Underscore technical or trade terms.

In the Sample Lesson Plan, demonstration is abbreviated "Dem.", explanation, "Ex.", suggestive questions, "Sugg. Ques.", safety practice, "S.P.", and trade terms are underscored.

7. Plan for method of carrying out Step III. Include the questions to be asked for checking essential knowledge.

8. Plan for method of carrying out Step IV.

9. Plan for method of carrying out Step I.

By planning Step I last, there is less chance of confusing it with Step II; and also it is possible to plan a better approach (Step I) when it is definitely known what is to be taught. Keep the "level of knowledge" of the trainee in mind when planning Step I.

10. Plan for the material and equipment needed for carrying out the entire lesson. (This will vary according to the size of the class.)

Analyzing a Major Topic for Instruction Units

Consider the major topic, "How to read and use a Forest Service Base Map". The following Instruction Units are indicated and would be given in approximately the following order:

1. Parallels of latitude and longitude.*
   Principal Meridians and Base Lines.
   Range and Township Lines.

2. Designating townships by T. & R.

3. Subdivision of a township into sections and how sections are numbered.

4. Subdivisions of a section.

5. Fractional Townships.

6. Legend.

This breakdown is made for the purpose of bringing out that a major instruction topic such as "How to read and use a Forest Service Base Map" can and should be broken down into a series of short Instruction Units. Each Instruction Unit, of course, would be further analyzed for the purpose of developing instruction points. This is done, as previously discussed, in making the detailed lesson plan.

In developing lesson plans for the six instruction units just listed it is quite practical to plan a Step I that fits all six lessons, and to "bridge" over from Lesson I to Lesson II by means of a connecting sentence.

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*Parallels of latitude and longitude would be given only brief attention in connection with guard training; they are on Forest Service Base Maps and provoke a certain amount of curiosity.

The instructor should plan and carry out Steps II, III, and IV for each of the first three lessons. Step IV of the third lesson could embrace the instruction given in lessons I to III, inclusive.

Lessons IV, V, and VI would be continued in the same manner, finally ending with a test which would embrace all six lessons.

To Illustrate:

Lesson #1	---	Step I - To embrace the major topic. Step II Step III Step IV
Lesson #2	---	Step I - Short statement to bridge over from Lesson 1 to Lesson 2. Step II Step III Step IV
Lesson #3	---	Step I - Same as above Step II Step III Step IV - For Lesson 3 and also Lessons 1 and 2.
Lessons #4, 5, and 6	---	Same as above.

Finally, test problems to embrace all 6 lessons.

Alternating Between Steps II and III in Certain Instruction Jobs

Certain instruction jobs, for example, throwing a diamond hitch in securing a pack on a pack animal, break down into approximately 20 operations. It is well known that the average person can follow only from 5 to 7 operations at one time successfully. It follows, then, that if the instructor attempted to demonstrate without a break the 20 operations involved in throwing a diamond hitch, it would be impossible for the trainee to mentally record them and duplicate the performance.

What the instructor must do is to demonstrate and explain two or three operations, give the trainee an opportunity to try them out, then demonstrate the two or three succeeding operations, and so on. This in no way conflicts with a practical application of the Four-Step method of instruction, although it does require that the instructor know definitely at all times which step he is in.

Example: An experienced packer is to instruct a prospective packer in how to throw the diamond hitch in securing a pack on a pack animal.

Step I - The instructor says to the trainee, "I am going to show you how to throw what's known as a "diamond hitch" in securing the pack on this animal. I'll go through the entire operation now so as to give you an idea of what the completed hitch looks like." After he has done this, he says, "You know a packer kind of "loses face" if the pack on one of his "string" comes off on the trail. I'm going to undo the "hitch" now and begin it over again, but this next time, I'll take it very slowly so that you can see just how it is done."

Step II - The instructor again repeats the first two or three operations of the hitch. He then says to the trainee, "Now you see if you can go this far on your animal." The trainee proceeds with his own "hitch" and has no difficulty up to this point. The instructor now demonstrates the succeeding three or four operations; the trainee endeavors to carry out these operations on the pack he is

working on. This time, however, the instructor gives him some assistance. This is continued until the eighteen or twenty operations involved are completed.

It will be noted that the instructor has been very careful not to include more than three or four operations before allowing the trainee to try that much out for himself. He has alternated between Step II and Step III.

Step III - At this point the instructor requests the trainee to undo his hitch and try to go through the complete operation again. In doing this, the instructor finds that some assistance is still necessary. This continues until the trainee can successfully go through all of the operations involved unaided.

Step IV - The instructor has now reached the point where he is reasonably certain that the trainee can throw this particular hitch correctly without further assistance, so he says to the trainee, "I am now going to ask you to undo your hitch and go through the whole operation once more. This time, however, I am not going to give you any help. All right, go to it."

Use of the Four-Step Method of Instruction

This method of instruction can be used in connection with training for most of the jobs required of the guard organization. Certain subjects in connection with advanced training, purely informational in character, and certain phases of law enforcement and public contacts, can best be handled by other methods.

Failure in the Use of the Four-Step Method of Instruction May Be Due to the Following Causes:

1. Too many operations or instruction points in one lesson.
2. Adopting a method unsuitable to the instruction topic.
3. Failure to complete each step before starting on the next.
4. Failure to include all steps in the lesson.
5. Failure to distinguish between steps in the lesson plan.
6. Failure to take sufficient time to teach the lesson.
7. Lack of patience and tact in teaching the lesson.
8. Undertaking to teach the lesson under unsuitable teaching conditions; for example, a lesson in map reading where no provision is made for the trainees to spread out their maps.
9. Over or under estimating trainee's knowledge of the subject.

Instruction Devices

There are two forms of instruction devices which may be used in guard training--namely, physical and psychological. The physical devices should be included in the list of materials in the lesson plan.

1. Psychological instruction devices are used to secure attention, arouse and sustain interest, create enthusiasm, obtain greater respect, promote thought, and clarify the subject.

Following are a number of psychological devices:

1. To hold group attention, put the question before calling the name of the person who is to answer.
2. Be enthusiastic. Little enthusiasm can be expected from a group unless the instructor is enthusiastic.
3. Learn and call trainees by their names. Familiarity overcomes timidity.

4. If a question is asked of the instructor which he cannot immediately answer, he may sometimes get a correct response by resubmitting it to the group, thus retaining their confidence. This device frequently assists an instructor in keeping control of a situation, and it gives him time to collect his thoughts.

5. Avoid embarrassing a trainee. Embarrassment will cause him to be less cooperative. (There are some cases, however, when in self-defense, the instructor is justified in using this "weapon". It should be used with a clear head and only as a last resort.)

6. In demonstrating a thing, better results will be obtained by having the trainee in a similar position and facing in the same direction as the instructor when both are right or left-handed.

7. Be self-confident. Don't use "I will try" or "I think." Be positive.

8. Command respect. Be a leader - not a boss.

9. In demonstrating anything, be sure to focus individual attention on the demonstration. Make the demonstration in such a manner that items such as body actions or facial expressions will not distract attention.

10. Give credit where credit is due. A few words of praise will often encourage greater activity and expression from those who are timid.

11. Instill rivalry. Rivalry without antagonism between individuals or crews promotes greater interest.

12. For inattentiveness or other improper learning attitudes, short rest periods are advisable. A well-put story will sometimes relieve mental fatigue and restore interest.

13. Frequent summarizing of material already covered aids in keeping the subject more clearly in the minds of the trainees.

14. Suggestive questioning. If a man has trouble getting his point across, help him out with a suggestive question.

15. Keep mentally alert. If the instructor shows the least sign of letting down, the class attention immediately begins to wane.

16. Materials needed for instruction should not be exposed to view until the proper time for their use.

17. Often a fitting story designed to create a laugh will relieve tension and keep the group in a receptive mood.

18. The expression of a sympathetic attitude toward the trainee's viewpoint creates a willingness to learn.

19. Look the trainee in the eye.

20. Speak clearly and distinctly.

21. Avoid reading text material as much as possible.

22. Written notes should be taken down as inconspicuously as possible. Obvious note-taking tends to embarrass the trainee.

23. When presenting lessons in the field, be sure that the entire group has assembled and is giving its full attention before presenting your case.

24. A good instructor makes it a habit to put over only one thing at a time; but if skillfully done, he may "hang on" to this

one thing an additional thought. Example: "This is a whetstone for sharpening your axe, and it should be held in this manner." (Sotto voce, "I saw a man cut his finger once doing this.")

2. Physical devices, or mechanical aids, are needed for graphic illustration or demonstration. A suggestive list of these follows:

Actual Working Tools or Instruments.

Charts
Diagrams
Forms - large reproductions for group use
Maps - sketch, relief, or other maps for illustrating particular points
Land survey subdivision cards
Large cardboard vernier plate with graduations
Large cardboard compass model
Telephone parts separated and mounted and wired on board
Sets of questions and answers

THE CONFERENCE METHOD

"Conference" is a popular term used rather loosely to describe all kinds of meetings. As used here, it applies when a group of experienced men, under the guidance of a conference leader, exchange freely their ideas and opinions and pool their experiences in the process of analyzing and solving a problem or arriving at some decision.

A conference may deal with a real problem, or, as a training device, with a hypothetical situation. In the second instance the objective for the conference is that of developing more intelligent thinking on the part of the individual men, so that, when confronted with similar situations in the future, they can think their problems through and arrive at better decisions.

With reference to "Efficiency on the Job", discussed on page 24, the conference can be used with the more experienced guards for developing "job judgment". Well conducted conferences will stimulate their thinking, assist them in considering all angles of a problem or situation and in separating the important from the unimportant, facts from opinion, and this will result in better performance of their job.

Types of Conferences

Conferences may be divided into two types, the Free Conference and the Guided Conference.

The Free Conference deals with problems for which there is no standard answer or for which the answer is not known. The problem may originate with the leader or with the group.

To illustrate: The fire chief on a large fire calls his foremen together after they have come in off the fire in the evening. He addresses them by saying, "I have called you men together because I need your help. We have lost considerable "line" today and I thought if we would get together we probably could figure out what has been going wrong and determine what needs to be done tomorrow to materially cut down the amount of lost line." Ensuing discussion brings out reasons for line being lost on several sectors, followed by conclusions as to what needs to be done about it. A conference of this type would be known as a Free Conference in which the problem originated with the leader, in this case the fire chief.

After the first problem has been threshed out, the fire chief says, "Is there anything else, now, that should be taken up while we are all together?" One of the foremen speaks up, "It's been kind of hard to get work out of the men today". The fire chief replies, "Well, what do you think is the matter?" The foreman answers, "For one thing, the breakfast was stone cold this morning". Another foreman contributes, "Something

held up the water on my sector today; the men were without water for about three hours". Still another foreman volunteers, "There seemed to be altogether too much noise around the camp last night". This will illustrate a situation where a problem originates from the group, the problem being conditions which lower the morale of the fire fighters. The conference would center around a determination of what is wrong and what needs to be done about it.

The Guided Conference deals with problems selected by the conference leader the solution to which he already knows but prefers the group to arrive at, under his guidance, for themselves. To illustrate: A ranger is leading a conference, the group being composed of experienced guards (smoke chasers). The leader's objective for the conference is to bring out correct step by step procedure in suppressing a small fire. The Ranger is well aware of the correct procedure, but through the medium of the conference he proposes to have the guards think through the several operations involved in suppressing a small fire and further to arrange these operations in their proper sequence.

Panel Method: There are a few occasions where it is desirable to develop a problem on a conference basis but where the group is entirely too large to permit participation by all. In a situation of this kind, a small group would be selected as conferees to develop the topic, being seated in front of the entire group and carrying on in regular conference fashion. During the development of the topic, the remainder of the group listen in as auditors but do not take an active part in the discussion. After the small conference group has arrived at some conclusion, the topic is thrown open for further discussion by the entire group. The small selected group are known as the "Panel". The procedure as a whole is known as the "Panel Method".

Use of the Conference in Connection with Guard Training.

Where the guards have a considerable degree of experience, the conference method can be used to advantage for such topics as (1) Job Analysis, for example, the job of the fire chief, sector bosses, foremen, straw bosses, camp boss. (2) For clarifying responsibilities and authority. (3) to analyze and work out problems in connection with fire suppression. (4) to gain support for a proposed policy. (5) To develop an appreciation and understanding of existing policy. (6) Problems of law enforcement. (7) Dealings with the public. (8) To improve cooperation in an organization.

Situations in which the Conference Procedure is not Suitable

The conference is entirely unsuited to certain situations, of which the more important are:

(1) Where the problem is one in which the group has had no experience. To illustrate: To discuss fire suppression technique with a group who have had no fire fighting experience.

(2) Where the answer to a problem should be determined by physical measurement or examination rather than an exchange of ideas or experience. To illustrate: A discussion of the use and care of a "fire finder," or of how to run a compass course.

(3) Where the answer to a problem is the application of a rule or regulation which already has been determined. To illustrate: A discussion of how long men should be worked on a fire when rules covering this matter are clearly set forth in the fire control handbook.

Controlling Factors for a Successful Conference

Size of the Group: The conference group for training purposes should consist of not less than six nor more than twenty members. Experience has shown the ideal group to be from ten to eighteen members. If the group is too small, there is a lack of experience to pool. If too large, it becomes hard to handle and participation by all of the members of the group is difficult to secure.

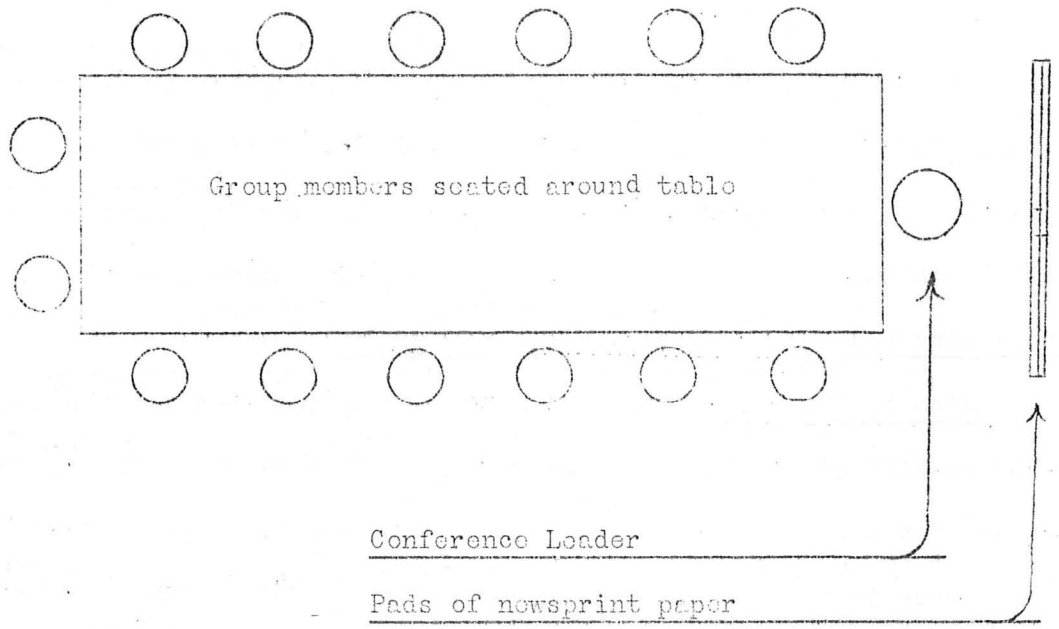
Composition of the Group: To be successful, the conference group must be homogeneous particularly as to levels of authority. Members of the conference group in the presence of their immediate superiors do not think and speak as freely as desired in the well conducted conferences.

It is also important that the members of the group have a background of common experience. If fifty per cent of the group lack a common background of knowledge or experience, the conference is almost sure to result in failure. With reference to "levels of knowledge and ability" discussed on page 22, the group should qualify for the two upper levels.

Working Conditions: The room or location of the conference should be free from distraction, well lighted and ventilated, and provided with

tables and comfortable chairs. The conference room should not resemble a class room with rows of chairs or desks suggestive of the pupil and teacher. A small group should be seated around one table. Larger groups may require two or three tables side by side or in the shape of a U. The leader should use the same table as the group rather than have a separate table placed between himself and the group.

The diagram below shows an ideal arrangement for the conference group.



If the members of the group are used to smoking, provision should be made for their doing so, since it is essential to the success of the conference that members be entirely at ease and in an atmosphere which will permit greatest freedom of expression.

Length of Conference Sessions: The total time needed to accomplish the objective for a conference is dependent on the topic under discussion.

Experience has shown that the ideal length of time for a conference will vary from one to two hours; a conference of less than an hour usually does not allow for a full discussion; prolonging a conference beyond 2 hours without an intermission will unduly fatigue the conferees to a point where little effective results will be accomplished.

Stages of the Conference

Following the presentation of the problem by the leader or the isolation of the problem by the group, the conference advances through four stages as follows:

The First Stage -- The assembling of ideas, facts, or experiences which may have some bearing on the problem.

The Second Stage -- The selection of facts or experiences which bear directly on the problem.

The Third Stage -- The evaluation of functioning facts or experiences.

The Fourth Stage -- The conclusion or decision.

Note: Some conference leaders include a Fifth and a Sixth Stage. The Fifth Stage, the formulation of a plan for carrying out the decision. The Sixth Stage, the execution of the plan.

In practice, it would be difficult to say, "this is the end of the First Stage and the beginning of the Second Stage of the conference". The group constantly refer to material developed in the First Stage in working through the Second Stage.

In most instances the Third Stage of the conference is purely a mental process. The evidence is sifted out in seeking those factors which are essential to solving the problem.

In guard training, the Fourth Stage of the conference usually should bring about a clear-cut conclusion. Exceptions would be made in certain conference topics dealing with problems, for example, certain phases of fire suppression and intangible topics such as co-operation and morale.

Illustration of the Conference Method

Conference Leader - the District Ranger.

Conference Group - 12 experienced fire guards.

Topic - Factors which influence fire behavior.

Objective - To bring about a realization on the part of the individual group members that there are several vital factors which influence fire behavior and that their relative importance will vary on different fires, to the end that each individual will use better judgment in sizing up and suppressing fires.

The First Stage: (Purpose, "The assembling of ideas, facts, or experiences which may have some bearing on the problem.")

The leader opens the conference by stating, "You men have all had considerable fire fighting experience and are acquainted with the conditions which have a bearing on the rate of spread of a fire. For instance, you know that the moisture content of the fuel has a lot to do with how hot a fire will burn". The leader then puts the following heading on the chart and underneath it the leading point, which was suggested by himself:

What are the Factors which influence Fire Behavior?

1. Moisture content of the fuel.

With this lead, the group contributes additional points as follows:

2. Ground cover.

3. Wind.

4. Ground composition.
(Mineral earth or rocky soil.)

5. Rolling logs.

6. Rolling rocks.

7. Moss.

8. Snags.

9. Soil moisture.

10. Depth of humus.

11. Size and experience of crew.

12. Distance of travel to the fire.

13. Slope.

14. Use of power machinery.

15. Arrangement of fuel.

16. Use of fire pumps.

17. Humidity.

18. Condition of vegetation.

This initial list includes all the points which the leader is desirous of bringing out. It also includes other points which have no bearing on fire behavior and which will be eliminated in the Second

Stage of the conference.*

The Second Stage: (Purpose, "The selection of facts or experience which bear directly on the problem.")

The conference leader's next job is to separate the vital factors which influence fire behavior from the irrelevant items in the list which has just been compiled from suggestions made by the group. He addresses the group as follows: "Suppose we take a few minutes and review this list for the purpose of selecting the points which are of most importance in determining fire behavior." The conferees, after a certain amount of discussion, select eight points, and these are added to the chart by the leader, making it read as follows:

Major Points Which Determine Fire Behavior

1. Moisture content of fuel.
2. Fuel.
   a. Ground
   b. Top story
   c. Arrangement
3. Wind.
4. Humidity.
5. Slope.
6. Snags.
7. Condition of vegetation.
8. Rolling logs and rocks.

Note: The 8 factors selected are primarily intended to illustrate the conference method and may not apply to all localities.

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* The reason for accepting irrelevant material in the First Stage is explained under the heading "Comments on the Sample Conference" on page 60.

The Third Stage: (Purpose, "The evaluation of functioning facts or experience.")

The conference leader now requests the group to review the second list for the purpose of determining which one of the items listed is of the most importance and which one is of the least importance. This question causes several minutes of serious study on the part of the group. Finally one individual volunteers that in his opinion humidity is of the greatest importance. This statement is immediately challenged by a second individual who says that wind has more to do with fire behavior than humidity. During the ensuing discussion other members of the group select other points as being of the greatest importance and cite certain past experiences to prove their point. During the discussion, the leader injects a question now and again for the purpose of directing the conferees' attention to some angle of the problem which they apparently have overlooked.

The Fourth Stage: (Purpose, "The conclusion or decision.")

Lively discussion having subsided, the leader now injects this question, addressing the group as a whole: "I have listened to your discussion with a great deal of interest. Each one of you has backed up his stand with some very logical reasoning. I'm wondering now if we are ready to sum up the discussion". After a few moments one of the group volunteers, "It seems to me that all eight factors we have been discussing are important and must be kept in mind when sizing up a fire for the purpose of determining what action should be taken. Some one factor may be the most important on one fire, while on another fire it may be

something else." Following this statement, the conference leader addresses the group by saying, "Are we pretty well agreed with the statement Campbell has just made, which in substance was, 'All eight factors selected are of vital importance in judging and determining fire behavior, and all of them must be given consideration when sizing up a fire and planning the action to be taken. In some instances one factor will be the most important; on another fire it may be something else.' The thing we have to keep in mind, in practice, is not to give so much weight to one factor that we will overlook the importance of the rest."

Comments on Sample Conference, Including Suggestions to Conference Leaders

Comments on First Stage - There are several reasons why the conference leader may accept "border line" material in the First Stage of the conference. The more important are: (1) "Border line" or irrelevant material suggested by the group in the First Stage is eliminated by the group in the Second Stage of the conference. (2) A contribution by one member of the group which is somewhat out of line stimulates the rest of the group to think, "Well, I can give a better reason than the one which has just been given." (3) Often there is some difficulty in getting a conference started; if the leader questions early contributions too critically, the group has a tendency to hold back for fear of being criticized.

Statements made by the conferees which are clearly out of line can be diplomatically handled in a number of ways. (1) The leader can say, "The question which I have asked you (or, which was written on the

chart) is not very clear," and then review and clarify his question. (2) The leader can ask some other member of the conference group what he thinks of the statement which has just been made. (3) The leader can ask the conferee who made the statement, "Just how does that apply to the topic we are discussing?" In all cases, the leader should attempt to have the conferee voluntarily concede that his statement does not apply to the immediate discussion, after which he is free to cross it out if it has been written down.

It is not unusual to have one or two individuals in a conference who are inclined to do all the talking. When faced with this situation, the leader could say, looking at or addressing the talker, "We seem to be doing more than our share of the discussion. I wonder what the rest of the fellows think about this?"

Comments on the Second Stage - In the Second Stage of the conference, the "vital factors" which influence fire behavior were rewritten for the purpose of emphasis. Other ways of isolating material which has a direct bearing on the problem are explained elsewhere. In this very important stage of the conference, the leader must be constantly on the alert in guiding the group in order that they may select the important factors having to do with the problem and reject those which are unimportant. Suggestive questions are the conference leader's most useful device in this process.

Comments on the Third Stage - The Third Stage of the sample conference is intended to show that the conferees go through a mental process of weighing one factor against another. The leader's question was intended not to have them select some one factor as being most important, but rather to have them consider all of the points and to decide for

themselves that the controlling factor may vary on different fires.

Comments on the Fourth Stage - The leader's strategy in this stage of the sample conference was that of having one of the conferees summarize the discussion, after which the leader restated the summary in the nature of a question to the group as a whole. For further emphasis, the leader could have written out the conclusion.

The question might be asked, "Why should the ranger in this instance take from one to two hours to bring out the vital factors which influence fire behavior when he might have told the guards in five minutes what they were?"

The answer is that telling or writing has been tried time and again and that it does not lead to satisfactory results. By use of the conference as outlined in the sample, all of the guards had some part in stating the answer (determining the vital factors which influence fire behavior), and as a result of this constructive thinking process they are more likely to call the points to mind when sizing up and planning the attack on some future actual fire.

Planning the Conference

The guided conference is used in practically all cases in connection with guard training, and it is therefore possible for the conference leader to work out a comprehensive plan for the conference in advance. The following outline is useful as a guide for this purpose.

Outline for Planning Guided Conference

1. Write out the objective of the conference
   (a) major
   (b) minor
2. Decide on the method of attaining objective
   direct _____
   indirect _____
3. Determine method for getting the conference started

(a) Direct statements (oral
(written.
(b) Suggestive questions (written
(oral (overhead
(direct.
(c) Citing an experience - written or oral, followed by "leading" chart headings.

4. Chart headings (visualize space on chart, and plan to use space to best advantage and develop in an orderly manner.)

5. Prepare a list of points which should come out in first stage of the conference.

6. Determine cases, illustrations, and questions which can be used for stimulating discussions and bringing out essential facts or data.

7. Plan how essential facts will be selected.

8. Consider a tentative plan for evaluating essential facts or experiences.
   (a) mental evaluation on the part of individual conferees.
   (b) group evaluation.

9. Plan for arriving at a decision or conclusion
   (a) written
   (b) oral
   (c) in each conferee's mind.

10. Best use of time - used in evaluating a conference episode rather than in planning.

The first requisite of conference procedure is that the leader have a real topic or problem for discussion. Intelligent, worthwhile thinking cannot be promoted on trivial problems. In most cases the objective is stated in the topic. Sometimes it is advantageous, in order to obtain full discussion and consideration of all angles of the problem, for the leader to keep his objective in the background.

The direct approach may be considered as positive and the indirect approach as negative. To illustrate: The conference topic might be "Better Fire Line Construction." The positive approach to this topic would be to have the group consider what constitutes good fire line construction and how to bring this about. The negative or indirect approach would be the topic "What Goes Wrong in Fire Line Construction."

After the list of the things that go wrong is obtained, the leader would direct the group into consideration of what action is necessary to prevent these things from happening. Incidentally, his objective, as well as his approach, would be indirect.

The first job of the conference leader is to get his conference started. The leader will often find that a written statement will produce quicker results than an oral statement. A suggestive question should be used in preference to a direct statement because it promotes thinking. An over-head question is a question which the conference leader directs to the group as a whole. The direct question is one that is directed to some individual in the group. Often the conference leader can select an experience, real, second-hand, or mythical, cite this experience to the group and from it, by leading questions, get his disucssion started.

Chart headings should be given careful consideration. They should be so worded that only one interpretation is possible. Sub-headings may be used under the main heading as a device for leading and controlling the discussion. In the guided conference, the leader can visualize in advance how his chart will develop and arrange his material accordingly.

In the free conference, the leader has no way of knowing in advance what material will develop as a result of the discussion and consequently will have no predetermined points to bring out by suggestive questioning. However, he should be able to determine whether or not the group is considering all angles of the problem and direct discussion accordingly.

The conference leader must sense the real problem and assist the group in isolating it. Unless this is done discussion will run rampant in irrelevant topics, resulting in waste of time and of the opportunity for worthwhile accomplishment.

In the guided conference, used as a method of training, the leader should know in advance what points should come out in the discussion. Suggestive questioning, either over-head or indirect, is used to accomplish this.

Reserve cases, illustrations, and questions may be considered as the conference leader's ammunition for stimulating discussion and bridging tense situations when they tend to develop.

The selection of essential facts is done by the group. The plan for isolating the essential facts must be determined by the leader. The simplest way of doing this is by underlining or circling the number of each item. Rewriting the essential facts selected, on a separate chart, might be considered as a leader's device for focusing group attention on these points. It is the leader's job to guide the group in the selection of essential facts and the rejection of those which are not essential. This may be done by suggestive questioning or by citing a case which will bring out an angle to the problem which the group has overlooked.

The evaluation, as previously stated, may often be a mental process on the part of each individual in the group. The leader must decide whether or not an outward show of evaluating is desirable.

In beginning his plan for the conference the leader must have his immediate objective clearly in mind. He must decide whether or not a group conclusion is desirable. He should keep in mind that majority opinion may not in all cases change individual opinion. The ultimate objective of the conference is to promote intelligent thinking. Much time can be wasted in trying to force the group to reach a conclusion when none is necessary.

The conference leader must keep his conference moving in such a way that the group do not feel that they are being hurried. Time must

be taken for full discussion and consideration of all angles of the problem.

The conference leader can lose much time by permitting discussion on irrelevant material. He must tactfully swing the discussion back onto the main track. If the conference topic fails at first to command interest, the leader must approach it from another angle. If this fails, it may be advisable to drop it for the time being and revise it at a later date.

Typical Column Headings for Chart Analysis - Well worded chart headings are the conference leader's most useful device. They provoke thinking and very materially assist in keeping discussion on the problem. The following illustrations are made of "stock" headings; the wording can be changed to suit the topic under discussion.

Case	Cause	Effect	Cost	Remedy

What	How

Pro	Con

For	Against

Advantages	Disadvantages

Troubles	Remedies

Errors	Causes	Remedy

Trouble	Reasons	What to do

Conference Leader's Job

The conference leader should --

1. Start and close conference on time.
2. Be a director of group thinking - not an instructor.
3. Keep his own prejudices, opinions, or ideas to himself.

4. Be impersonal, yet radiate interest.

5. Be alert to the consensus of the group.

6. Be extremely patient with members of the group.

7. Discourage the debating spirit.

8. Keep the attention of group centered on the problem.

9. Obtain equal participation from all members.

10. Show enthusiasm over the progress of the conference.

11. Tactfully keep members even tempered.

12. Possess a sense of humor.

13. Show appreciation for each member's contribution.

14. Keep group from taking itself too seriously.

15. Preserve an atmosphere of informality.

16. Be free from academic habits.

17. Keep problem progressing towards a conclusion.

18. Keep discussion alive until "all facts are in."

19. Express each problem clearly, definitely, in words of one or two syllables.

20. Word the problem in a form that will promote though and reduce debate.

21. Select conference devices suitable to the nature of the problem.

22. Judge progress of the group in solving the problem.

23. See that all ideas and conclusions are recorded.

24. Combine with other educational methods when necessary.

25. Avoid anti-climax of interest toward end of conference.

Some of the conference leader's more important duties are as follows:

1. To promote and stimulate discussion along lines which has some bearing on the objective for the conference.

2. To effect an even distribution of discussion by controlling "the talker" and encouraging the more reticent members to take part.

3. To keep members of the group from entering into personalities or in some way attempting to "show up" some person inside or outside the group.

4. Good hot arguments are in order, but the leader must guard against their becoming "too hot".

5. To assist the members of the group in expressing their ideas; this does not mean to think for them.

6. To refrain from contributing his own ideas or forcing them on the group.

7. To be familiar with and select the conference devices which will assist the group in arriving at the proper solution.

8. To head off private conversations and discussions which are irrelevant to the topic or problem under consideration.

9. The conference leader should try to get acquainted with the members of the group as quickly as possible and to see that the members of the group get acquainted with each other.

A selected list of "DON'TS" for the conference leader

1. Don't assume the attitude of a teacher.

2. Don't stand up throughout the conference - be at ease.

3. Don't allow yourself to be drawn into the discussion, except to clear up a situation.

4. Don't talk too much.

5. Don't allow discussion to continue on irrelevant questions.

6. Don't answer questions - bounce them back to the group; in case the leader is the only one who can answer a question which is holding up the conference, it is in order to do so.

7. Don't criticize any member of the group for any statement he may make. Engineer the situation so he will be criticized by another member of the group.

8. Don't stop discussion to give your own opinions.

9. Don't allow one or two people to do all the talking.

10. Don't give your opinion on the subject - if you don't like the trend of the discussion, raise embarrassing questions and force a member to discover error, if such exists.

11. Don't stop a good "hot" discussion as long as it is on the topic and does not become personal.

12. Don't let the discussion get away from you.

The Job of the Conferees

The members of a conference group should --

1. Give the group the benefit of their experience.

2. Be impersonal toward the problem and other members.

3. Subdue any desire to show off or make a speech.

4. Keep their own prejudices from cropping out.

5. Attend alertly to the discussion.

6. Be patient when results are slow in coming.

7. Appreciate the other fellow's point of view.

8. Avoid the temptation to argue.

9. Talk on the problem at hand.

10. Assist chairman in getting results recorded.

11. Avoid trying to prove their points.

12. Be prompt at meetings.

13. Attend meetings regularly.

14. Be good sports when their contributions are not appreciated.

15. Avoid monopolizing the discussion.

The Conference Devices

*Cases by Leader: Cases may be used by the leader to start a conference, bring discussion back on the "main track", illustrate a point, control a tense situation, and stimulate discussion. Cases may be real or hypothetical, first hand or second hand; names or places need not be mentioned. Prior to the conference the leader should consider his topic and objective and supply himself with suitable cases. Cases by the leader have a high value at the beginning and through the first stage, gradually tapering off in the second stage.

Cases by Group Members: The members of the conference may take a little time before citing cases which have a bearing on the topic for discussion. Often the group will take some time in "sizing up" the leader. By example and skillful questioning the group can be started. The leader must guard against "being trapped" into stating his opinion concerning certain cases that may be highly controversial or have to do with policy, superior officers, etc.

Direct Statements by Leader: Direct statements by the leader have a high value at the beginning of the conference in presenting and clarifying the problems for discussion. As the conference progresses direct statements are occasionally used to furnish needed information and control discussion. The leader must realize too many direct statements tend to transform the conference into a lecture; they also tend to slow up or stop the thinking of the group.

Questions by the Leader: Questions by the leader have a high value in starting the conference and continue to be used for controlling

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* A case is a happening or an experience.

and stimulating the discussion through all four stages. Questions may be "direct" - to a member of the group; "overhead" - to the group as a whole; "informational" - "How many forests in Region 6?"; and "suggestive" "Why should we be concerned with land use planning?" The leader should cultivate the habit of using questions rather than statements.

Direct Statements by Group Members: Direct statements can hardly be classed as a conference device. They do indicate certain things to the leader; for instance, that thinking is taking place; that a conclusion has been reached by the "fast thinker" as a result of the conference, ahead of the rest; or that someone has jumped to a false conclusion. Sometimes a conferee is motivated to make direct statements for some concealed reason. Direct statements have a high value in summary or reaching conclusions.

Discussion: Discussion is the essence of the conference. The leader must start and control the trend of discussion. It must have some bearing on the problem, it cannot be personal in nature, and it should be well distributed. It usually tapers off near the end of the third stage. The kind of discussion and to where it is leading are the principal measuring stick of the conference leader. The chart or blackboard is the conference leader's most valuable aid in stimulating and controlling discussions, recording and evaluating pertinent data, and reviewing what has transpired.

Analysis: An analysis is the process of "breaking down", or separating into its several elements, something such as a job, responsibility, an organization, a procedure, or a fire record. In many cases a chart or graph can be used in combination with an analysis to good effect.

List of Functioning Facts: Functioning facts are listed on the chart or blackboard, as a usual procedure. Occasionally the leader will list the pertinent data coming from the group on a piece of note paper, and review to the group what has transpired from time to time. The leader is responsible for keeping track of what is being contributed.

Illustrations by Leader: Illustrations may be cases by the leader, or may take some other form. Cases and illustrations usually are one and the same. The illustration's peak value usually occurs in the third stage.

Evaluation of Data by Rating: Evaluating by rating means placing relative values on the contributed data according to their importance, desirability, convenience, possibility, or practicality. This can be done, for example, by numbering on a scale of 1 to 10, by rearranging, or by elimination. Evaluation by some form of rating begins and "peaks" in the third stage.

The Graph: The graph, when used, is built up on the results of some rating scheme. Its chief value lies in making the result more striking or forceful. Its use begins and peaks in the third stage.

Suggestions from the Group: There is very little difference between "direct statements" and "suggestions" from the group. Some suggestions from the group may be sought by the leader; others may come and not be "in order" or wanted. In any event, the leader must be prepared to do something about them. Suggestions are usually in the nature of a "trial decision" or conclusion; if there is no point in reaching a formal conclusion, the leader should terminate the conference rather than promote a prolonged argument.

Majority Opinion: Unless there is absolute need for majority opinion, it should not be used in conference procedure.

Often through compromise a decision can be reached in which all concerned will be satisfied. Voting is used in the fourth stage. Be cautious about voting at the beginning of a conference; it puts the group on record and may make it embarrassing to retract.

Report: A condensed report should be made of each conference session. It should include a brief introduction, the essential data from the work board, diagrams, graphs, evaluation rating, and the conclusion, if any was reached. When chart paper is used the report can be compiled from the sheets after the meeting. It is not considered good practice to have a stenographer in the meeting taking notes on everything that is said. The feeling that a word for word report is being kept has a dampening effect upon the group as a whole; discussion should be spontaneous, and not inhibited by careful choice of words.

Conference devices which promote group thought are:

1. Taking time to state problem clearly, definitely, and concisely.
2. Stating problems in terms of "what", "how", "when", or "who".
3. Writing statement of problem where all can see it.
4. Analyzing a case or situation.
5. Listing advantages or disadvantages of a course of action.
6. Listing the possible solutions of a problem.
7. Listing remedies for a troublesome situation.
8. Selecting standard of action or policy by voting.
9. Voting on the "order of importance" of items in a list.
10. Listing "order of operations", or "steps in procedure".
11. Constructing a rating scale.

12. Analysis of relationships by means of charts or diagrams.

13. Breaking and re-breaking problem into smaller elements.

14. Analysis of problem for related and unrelated facts.

15. Allowing discussion to take its course, leader sitting back.

16. Defining clearly words or terms used in discussion.

17. Studying members of group to make use of their strong qualities.

18. Directing questions to group or individual.

19. Effecting common understanding by group of each contribution.

Difficult conference situations, and devices to overcome them:

1. In order to get a discussion started-

   a. Submit cases, questions, or points for discussion.

   b. Direct questions to individuals.

   c. Start a list of responsibilities or duties.

   d. Start a list of problems facing the group.

   e. Start a chart of organization relationships.

   f. Construct a graphic chart or scale of qualities.

2. Lack of attention

   a. Direct a question to an individual.

   b. Start a list to which group contributes.

   c. Use same devices used to start discussion.

3. One or two individuals dominate the group.

   a. Appoint such individuals as secretaries.

   b. Let them write down conference material on blackboard.

   c. Let them take down cases as brought out by members.

   d. Ask them thought provoking questions.

   e. Tactfully correct them individually after meeting.

4. Some members do not talk.

   a. Ask them for opinions.

   b. Direct a few easy questions their way.

   c. Gain their confidence outside of conference.

   d. Avoid embarrassing them in any way.

5. Apparent lack of interest.

   a. Subject may be talked out.

   b. Subject may not have a general appeal.

   c. Subject is being treated in too general a way.

   d. If in early stages, abandon the problem.

   e. Conference may have wandered from subject.

   f. Shift attack on the problem.

   g. Change to another device.

   h. Tell a funny story or joke.

   i. Call a brief recess.

6. Discussion drifts to irrelevant matters.

   a. Cite cases or points.

   b. Review discussion and lead it back.

   c. Appoint shrewd member to watch out for drifting tendency.

7. Discussion gets out of control.

   a. Direct a question to group.

   b. Direct a question to individual.

   c. Contribute a case or point.

   d. Ask offending members to direct their remarks to group.

8. Leader selects wrong device - it doesn't work.

   a. Stop at once.

   b. Summarize discussion so far.

c. Attack with another device, transferring material.

9. Thinking is faulty.

a. Use "pro and con" analysis.

b. List advantages and disadvantages of a course of action.

c. Analyze causes and remedies of a difficulty.

d. List functioning and non-functioning factors.

10. Minds are biased or viewpoints narrow.

a. Same as #9 above.

Time Saving Devices in Using the Conference Method in Guard Training.

1. The instructor must have some training in conference leading, before he is given such an assignment in the guard training program.

2. The conference leader must make adequate preparation. Reference is made to Page 62-63. Above all he must state the problem clearly.

3. A more liberal use of the "case method."

To illustrate: The conference group is composed of fire camp managers all having had some experience. The objective for the conference is to bring out how a fire camp should be laid out. The conference leader opens the conference by displaying a large sketch of a fire camp, which depicts the usual fire camp layout; the kitchen, garbage pits, warming fire, latrines, equipment enclosure, "bedding" grounds, road, and stream. Some of these features are properly located, others are not. After explaining the purpose of the conference the leader requests the group to study the sketch for a few minutes, after which he directs their attention to some one item on the sketch, say the kitchen, and raises the question, "Is it properly located? The sketch shows it's too close to the road." Each of the remaining items are taken up in a similar manner. Some comments are written on a chart relative to each camp feature

as to right and wrong practice. The leader then displays a second chart on which the same road and creek are shown. In the light of the previous discussion and conclusions, the group actively participate in locating all the features shown on the first sketch in their proper place on the second sketch.

The same general idea can be used with a group of fire chiefs (fire bosses) to bring out good and bad practice in fire fighting strategy.

4. The leader should be aggressive rather than languid in leading his conference; his attitude is directly reflected in the group. He must constantly be on the alert in following the discussion, planning and thinking in advance of the group at the same time. If planned conference devices do not work he should drop them, rather than stubbornly hang on, and try some other device.

5. The leader should help the conferee in expressing his thought, without misconstruing it; summarize contributions from the group rather than ask the conferee to summarize.

THE PROBLEM OR CASE METHOD

This method of instruction consists of preparing problems, real or hypothetical, and presenting them, orally or in writing, to the individual or group for solution.

The method lends itself more to advanced than to initial instruction, since it is usually considered that the person must have some knowledge of the subject, acquired through training or experience, before he can be expected to be able to solve problems encountered in connection with a given job.

The problem method may be and often is used in connection with other recognized instructional procedures. For example, each trainee could be given a problem for solution in Step 4 of the Four-Step Method of instruction, or a conference could be started with, and center around, a problem for group solution.

In order that this may stand out as a distinct method of instruction (in reality a method of advanced training), it is assumed that each individual will work out the solution for himself.

Methods of Presenting the Problem.

Problems may be presented to the trainee in a number of ways; the usual methods are;

1. Oral presentation by personal contact.
2. Oral presentation by telephone.
3. Writing, with or without sketches.
4. Enlarged photographs, with explanations and statement.

5. Motion pictures and lantern slides, accompanied by or incorporating a statement of the problem.

6. Under actual field conditions.

Whichever method is used for presenting the problem, there are two essentials: (1) All the data necessary to solution must be provided; (2) the objective to be attained by the trainee must be clearly stated. Certain types of problems are designed to develop judgment; others to stimulate a study of the Guard Handbook, the fire plan, forest maps, forest data, recreation areas.

Application of Problem Method.

There is a wide field for application of the problem method in connection with the guard's job. A partial list of the subjects includes:

1. Dispatching
2. Lookout problems
3. Fire suppression technique
4. Getting men out of hazardous situations
5. Calculation of probabilities
6. Law enforcement
7. Public contacts

Problems in dispatching could be presented orally (methods #1 and #2) or could be written. To illustrate, the ranger would say to his dispatcher, "Allen, one of these days we are going to have a lightning concentration that will start several fires at about the same time. I have "doped" out a problem similar to a real one we had two years ago. I am going to give you 5 lookout reports, just as you would make them out if they were phoned in to you. Your job will be to plot your fires from these reports and see that adequate initial action is taken. As this

is being done to give you practice, instead of calling our regular "smoke chasers" you ring me in my office and in each case I'll take the part of the guard you would call. I'll make notes on your instructions. After we are through I will come back here and talk the whole problem over. Here are the reports; start in five minutes."

There are many ways of presenting problems in fire suppression technique. They can be sketched on a chart or laid out on a map. Sketches and maps require considerable mental picturing which can be overcome to a large extent by using enlarged oblique aerial photographs or lantern slides.

Sound motion pictures offer interesting possibilities for presenting fire situations, but probably would be costly.

On the subject of "calculation of probabilities", there is no substitute for actual field conditions. To illustrate: The forest supervisor and one of his rangers (or the ranger and one of his guards) are traveling on a forest road. The supervisor says, "Jim, let's stop here for a few minutes". They stop. "Jim, the weather has been so and so for the past two weeks, the humidity is 20 right now; I'd judge we have a 15 mile wind from the east. A fire starts about here. How much do you think it would spread in the first hour, "free" burning? Five men get on the fire an hour after it's reported; they are unable to hold it. You can get up to 200 men in here within 4 hours. The question is, how big will your fire be by that time, and how many men should you send in?" That's the problem. If the ranger's or guard's reasoning and answers are correct, they go on; if not, mistakes are pointed out -- in-place training.

Cases having to do with law enforcement and public contacts can be presented orally or in writing. They may be real or hypothetical. The question to be answered by the guard is, What would you do? or,How would you handle it?

To illustrate - law enforcement: You come across a fisherman in the "back" country. He is cleaning a mess of fish in a stream. Would you arrest him? - explain that it is contrary to a Federal or State law? - or say nothing about it? Write out your answer, giving reaons for action you would take and quoting authority.

To illustrate - public contacts (written problem submitted to a lookout). A party of school teachers (women) pay you a visit. They want to come up in the tower and look around. Will they be more interested in the names of visible mountain peaks or the mechanics of the fire-finder? Give reasons for your answer. One of them will say, "Why bothertо protect the "scrubby" trees up here, they are no good for lumber". How will you answer this question? What other services rendered by the Forest Service to the public will you explain to this party of visitors?

DRAMATIZATION

Dramatization, or the dramatic lesson, as used in connection with guard training, is a portrayal of a situation or problem intimately associated with the guard's work. It can be used to good effect for subjects such as law enforcement and public contacts. Its use should be confined to actual or probable situations, avoiding the improbable and the comedy.

Dramatic lessons may be carried out in one act or in two acts. A one act drama portrays correct procedure only. The two act or comparison drama portrays wrong procedure in the first act followed by a portrayal of correct procedure in the second act.

Methods of Dramatization.

There are three usual methods of presenting the dramatic lesson.

(1) A one or two act drama portraying some phase of the guard's job.

(2) Motion pictures.

(3) The silent drama.

Where the first method is used, the characters are usually selected from the instructors at the guard training camp. Preference has been given to the two act comparison drama in Guard Training over the one act play for the reason that the comparison drama lends itself better to the training job for which the method is applicable.

The two act comparison drama consists of three distinct parts.

Part 1. A dramatic presentation which includes a mixture of right and wrong practices or questionable methods bringing out the major points involved.

Part 2. After Act 1 has been completed, a discussion leader will guide the group in seeking out incorrect practice as portrayed in Act 1.

Part 3. The second act deals with the same problem as before; this time correct procedure is emphasized and the trainee's mind is directed from the wrong impression towards the correct method or practice.

The effectiveness of the dramatic lesson will be in proportion to the skill with which it is enacted. No subject matter should be injected into the drama which will tend to divert attention from the moral taught by the lesson.

In preparing the lesson plan for a two act comparison drama, two stories of the case should be outlined, one for the first presentation and one for the second. Using new characters, props and locale for the second location might add to the interest, but there might be a loss in psychological value. It is suggested, therefore, that the same characters, props and locale be used in both cases. The first act should show the negative or wrong methods with perhaps a few proper points. The second act should show the constructive "ideal" way to handle the situation.

The dramatic lesson cannot be worked up and put across on the spur of the moment. To be effective, at least the following conditions are essential:

1. Definite leadership
2. Definite plan or plot
3. Proper selection of characters for different parts.
4. Point to be brought out must be recognized by characters.
5. Adequate preparation and rehearsal
6. Proper setting
7. Dramatization can be entertaining and educational at the same time, but we, as amateurs, cannot make it comic and educational at the same time.

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The following suggested outline will illustrate the two act comparison drama:

Building and Extinguishing Campfire. Improper: A campfire or simulated campfire (a real fire is always better) built in a dangerous place, not cleared around. Guard very hardboiled. Informs camper in no uncertain terms that fire is in a dangerous place. Mumbles to himself that such city people should not be allowed in the woods. Picks up bucket of water or coffee and drowns campfire. Tells the camper that he had better stay out of the woods if he is such a tenderfoot he doesn't know how to build a campfire properly. Shows no interest in instructing the camper in the proper method of putting a campfire out, and does not help him to select a proper spot. Camper is angry and leaves with ill feelings toward the Forest Service and all employees.

Proper Procedure: Campfire same as above. Guard drifts in. Chats pleasantly with camper. Looks around, comments on wind springing up. Brush and grass getting dry. Sure would be tough to have to fight a forest fire today. Camper agrees. Guard looks at fire. Wonders if it isn't in a rather dangerous spot. Points out how easily it might spread. Points to another spot, asks camper if he doesn't think the fire would be safer over here. "We don't want to get burned out, do we?" Camper agrees, grabs bucket of water and puts out fire. At this point the guard takes advantage of the opportunity to show the camper how to put his fire out properly, explaining the necessity for stirring the bed of coals so as to allow the water to seep down through. Guard says it takes a gallon or more of water to do the job, that's why we require a gallon bucket. Camper agrees. Says he is glad now they made him bring along a shovel, too. Guard points

out safe spot. Camper clears spot under guard's courteous suggestions, digs a fire pit. Guard feels for roots of snags in fire pit, explaining their danger in spreading fire. Suggests to camper that,"A little fire, and a bed of coals will cook your food but not your face." Guard leaves, wishing camper a good meal and pleasant dreams, "and don't forget to use that gallon bucket again when you're through". Both laugh good naturedly.

Motion Pictures.

Motion pictures and especially sound pictures offer real possibilities for typifying correct procedure in such subjects as law enforcement and public contacts. Dialogues and acting could be carried out by Forest Service personnel who are especially qualified in this field

This method of instruction to date, has not been developed to any great extent. It should and no doubt will receive serious consideration in the near future.

The Silent Drama.

The silent drama involves no characters but rather portrays a situation. An example of a subject for which it can be used to advantage is "The Proper Care of a Forest Guard's Headquarters". This portrayal necessitates the preparation of two identical guard cabins or camps with similar contents. In the first cabin things often found wrong are depicted, such as dirty dishes, littered floor, unmade bed, and wearing apparel strewn about. In the second cabin everything is in proper shape, and furniture and other items in the cabin are placarded to draw attention to how they should be according to standards set up.

During the course of the guard training camp each trainee is required to visit both cabins, being instructed to visit cabin No. 1 first. While in cabin No. 1 he is to note carefully on a piece of paper everything in and around the cabin which is wrong or out of place, put his name on the paper, and deposit it in a box in the cabin. He then goes on to the second cabin in which everything is in order. By seeing the right and wrong ways of taking care of the cabin, the trainee should learn the right way.

THE LECTURE

Lecturing is a method of imparting information. The instructor has information which the group does not have. He presents this information to the group mainly by telling them about it.

The lecture when used as a method of instruction is divided into two steps. In the first step, the instructor passes out the information; in the second step he requires that the information given be reproduced. The instructor carries out the second or test step by asking questions, which may be oral or written, or by requiring the members of the group to restate in their own words the substance of the lecture. The lecture is suited more to advance groups whose additional attainments have already familiarized them with this procedure than it is to other groups who have not had these advantages. Where members of a group are already familiar with a method or procedure for doing a piece of work, modifications for old methods or old procedures may well be explained to them by a lecture. As an example, the forest supervisor may, by means of the lecture, explain changes in policy to his staff or to a group of forest rangers.

There is certain limited use for the lecture in connection with guard training for the purpose of giving the trainees certain background information. For example, an understanding of the Forest Service fire control organization, its makeup, its purpose and their place in the organization.

Devices to Strengthen the Lecture Method.

If, as a last resort, the lecture is used to furnish instruction in guard training it may be strengthened in a number of ways. The three most important ways are (1) the use of illustrations, (2) taking notes on the lecture, (3) printing or mimeographing copies of the lecture.

Ordinarily, lecturing (telling) is received by the group's auditory sense only; that is, they use only their ears. To be more effective, the lecture should make use of maps, drawings, sketches, photographs, and objects, which reach the group's visual sense. Some people are said to be "visual minded"; this means that they remember the things which they see better than the things they hear.

Taking notes is considered as an aid, since the trainees in writing the material gain visual retention as well as auditory retention. However, in guard training work it is generally impracticable, since the members of the group are not accustomed to taking notes and take them so slowly as to interfere with the lecturer's natural speaking habits.

Printed or mimeographed copies of the material, presented by the lecturer after the lecture has been concluded, give the trainees an opportunity for further review and study.

Limitations of the Lecture Method

The limitations of the lecture method in guard training should be clearly understood. Most guard training jobs require that the trainee learn to do some practical job or learn to use some tool; and one cannot transmit doing ability or skill by lecturing. When used to develop a doing ability, a lecture may be regarded as a last resort of a poor instructor. Teaching a group of fire guards to construct a fire line with a McCloud tool by the lecture method is an example of gross misuse of the lecture.

The average mind can receive only a limited number of ideas at a given time. This number is usually fixed somewhere between three and nine.

The effectiveness of a lecture will vary conversely with the number of points presented. If the lecturer presents three points the group may remember them; but if he presents 30, they will probably not remember more than three and these may be among the least important.

Written Instructions

Written instructions, if used as the sole means of conveying certain information to trainees, are merely lectures and for training purposes are subject to the same limitations. It is no more possible to teach a man a doing job by written instructions than it is to teach him by telling. Written instructions on how to do a job which has already been taught by more effective methods are valuable to the trainee as a means of review and future reference.

Preparation of the Lecture

To be effective the lecture requires as much or perhaps more preparation than some of the other training methods. One of the failings of most untrained lecturers is the tendency to ramble all over the subject. Another is to make the lecture entirely too long. Attention wanders during the long lecture. By good preparation the instructor can usually give all of the essential material of the long lecture in a very much shorter period of time. However, the preparation time increases as the presentation time decreases. That is, a lecturer may be able to ramble for an hour as a result of one hour's preparation, but to condense his material to a 15 minute talk may require four hours of preparation on his part.

Attaining an Acceptable Degree of Proficiency

It has been pointed out that instruction is only part of training -- the first part. Instruction alone usually cannot be expected to develop in the trainee the high degree of proficiency that is expected and desired in his work. What is needed is repeated practice of the skills or jobs taught during the instruction. The man who has been taught by instruction how to pack a horse can pack a horse, but not with the speed or efficiency of an expert packer. This speed and efficiency he can acquire only by continuous practice.

This example illustrates the development of speed and skill by practice following instruction. In a similar manner, judgment can be developed to an acceptable standard only by the exercise of judgment. Although a guard may have been instructed in how to judge the rate of spread of a fire and the number of hours of work needed to corral it, he needs to test his judgment of these factors against a number of actual situations.

The above does not mean that only those things actually occurring in the guard's work can be developed. Those things in which he was instructed and which are not used regularly but which might have to be used should not be neglected. That which a man does not use he soon forgets.

It is the responsibility of every forest officer who visits a guard station in a supervisory or inspectional capacity to help the guard review these items of his training, to correct mistakes picked up in learning, to recall half forgotten things, and to impress upon him the necessity for review and practice of those things in which he has been trained.

Checking for an Acceptable Degree of Proficiency.

The inspector can determine acceptable proficiency only by having the guard demonstrate his ability by doing those things he is supposed to do and explain those things which he is supposed to know, and which go to make up his job.

PART I - SECTION III

TRAINING INSTRUCTORS

Of the five methods of instruction outlined in the previous section, the Four-Step Method and the Conference, respectively, have the widest application in the guard training program. The following material suggests a plan for training Forest officers in these methods.

Training Instructors in the Use of the Four-Step Method

Effective instruction is dependent upon the instructor's ability to analyze the instruction job, for the purpose of determining what operations are involved in doing this job and what knowledge is required. So the training officer's first job in training instructors is to demonstrate and explain the need of breaking a job down for the purpose of bringing out Operations Required and Essential Knowledge Required.* Reference is made to Page 107 for a sample job analysis. The trainees should be given considerable practice in analyzing a variety of jobs.

After the trainees have reached an acceptable degree of proficiency in job analysis, the training officer presents the Four-Step Method of instruction.

The Four-Step Method of instruction can be put across by use of the Four-Step Method. The training officer must keep his objective clearly in mind in working out and executing his plan of action. Subsequent material will be much easier to understand if the following typical situation is visualized: A group of 6 or 8 rangers or experienced guards are assembled

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* This may be accomplished by use of the Four-Step Method of Instruction.

and are to be given instruction in the Four-Step Method. The training officer who will give this instruction is going to use the Four-Step Method.

THE TRAINING OFFICER'S JOB: To instruct a group in the use of the Four-Step Method.

The Training Officer Proceeds as Follows:	Training Officer's --
1. Stimulates the trainee's interest in the instruction method.	Step I.
2. Briefly outlines the Four-Step Method.	
3. Presents the method by demonstration lesson.	
4. By suggestive questioning sets up point by point what took place in the demonstration lesson.	
5. Separates the points into the four instruction steps.	Step II.
6. Elaborates further on the purpose of each step.	
7. Refers back to previous instruction on how to analyze a job.	
8. Demonstrates how to make a lesson plan.	
9. Gives individual assistance to each trainee in making his first lesson plan.	
10. Has trainees try out their lesson plan.	Step III.
11. Gives constructive criticism on each demonstration lesson.	
12. Requests trainees to make a second lesson plan.	
13. Repeats 9 and 10.	Step IV.
14. Inspects the instructors.	

The Plan for Carrying Out the Foregoing Points

Point 1.

By direct statements and suggestive questioning, the training officer will establish the thought with the rangers that one of their major responsibilities is that of instructing their subordinates. For a group of guards the training officer will secure their interest by informing them that in view of their knowledge and experience they are going to be used as instructors in guard training.

Suggestions for Securing Interest

1. Your work as a ranger becomes very difficult and aggravating when the men under you make mistakes or do poor work. Some rangers attempt to over come this by trying to do the work themselves.
2. If the men under you understand and have an interest in their work, your job in supervising them is much easier and the work runs along more smoothly.
3. An individual or crew of men will do effective work in proportion to the quality of training they have recieved.
4. Even the simplest kind of work requires a certain amount of instruction. As the complexity of the job increases, the need for thorough instruction increases.

5. A method of instruction has been developed and thoroughly tested out, and has proved to be both effective and practical.

6. This method is commonly called the Four-Step Method of instruction. I will explain and demonstrate to you how it works in practice.

Point 2.

The training officer briefly outlines the Four-Step Method. Reference is made to page 28 for an outline that may be used. Following his explanation, the training officer demonstrates the Four-Step Method by instructing one or more of the group how to do some simple job (a job in connection with the guard's work is to be preferred). The training officer should keep in mind that the balance of his training program will hinge on how well this demonstration instruction is carried out. He should have his lesson plan worked out in the same way that he will expect his trainees to work out their lesson plans at a later stage.

Point 3.

The training officer's objective in the demonstration lesson is that of showing the trainees just how the method works in practice.

Point 4.

By suggestive questioning, he will now have the group recall what took place in the demonstration lesson from beginning to end and list these points on a chart in consecutive order. For example: If the lesson had been on "How to make an emergency splice in telephone wire", the chart development would be about as follows:

By Suggestive Questioning the Training Officer Brings Out.	Training Officer's:
1. Telephone communication is essential to fire control.	
2. The line will break occasionally.	Step I.
3. Necessary tools are not carried for making a standard splice.	
4. Need for knowing how to make an emergency splice.	
5. Instructor demonstrates how to make an emergency splice.	Step II.
6. Instructor explains parts of splice and asks questions.	
7. Each member of the class is given an opportunity to make an emergency splice.	
8. Instructor supervises and checks for errors.	Step III.
9. Instructor asks questions about the splice.	
10. Trainee makes a second emergency splice unaided.	Step IV.

Point 5.

After the training officer has developed these points on the chart, it is a simple matter to separate them into the four steps of the lesson.

Point 6.

With this background the training officer is now in a position to elaborate further on the purpose of each step in the lesson, and to suggest ways in which each step may be carried out. The following will illustrate a chart that may be used:

The Four-Step Method - Condensed Form

Step	Purpose	Method for Carrying Out
I.	Basis for lesson. Secure interest-creating value or need. Secure desire to learn.	Suggestive questioning for recalling past experience, previous lesson; or to show value - need for knowing. Illustrations. Demonstrations.
II.	Instructor presents lesson.	Demonstration Illustration Explanation Suggestive Questioning
III.	Trainee does job. Instructor supervises, assists if necessary, checks for essential knowledge.	By having trainee do the job. Instructor asks suitable questions for checking essential knowledge.
IV.	Trainee does the job without help.	By having the trainee do the job unaided. Questions (Written (Oral Situations changed when possible, principle learned in Steps II and III the same.

Point 7.

The training officer reviews previous instruction on how to analyze a job, and brings out the importance of thorough analysis by emphasizing that an incomplete analysis of the job may result in certain important points being overlooked in the instruction process and ultimately result in the trainee's inability to do the job.

Point 8.

The training officer will present each trainee with a copy of the lesson plan which was used by himself in the demonstration lesson followed by an explanation on the procedure for making a lesson plan. Reference is made to Page 41 for complete instructions on how to make a lesson plan.

Point 9.

The training officer will find that a certain amount of assistance is necessary when the trainees are making their first training plan. Considerable difficulty can be avoided if the training officer assists in the selection of jobs for which the first plan is to be made. He should also give each training plan a careful final check before the trainee is requested to try out his plan in the nature of a practice lesson.

Point 10.

When the training plans have all been completed and checked, each member of the group will try his plan out, one or more of the group acting as the trainee for each temporary instructor. When arrangements can be made there is some advantage in having the trainees try their lesson plans out on inexperienced persons brought into the training meeting for that purpose.

Point 11.

Following each demonstration lesson, the training officer should systematically review what transpired, and, in a diplomatic manner, bring out the weak points of the lesson. This review following each lesson has an unappreciated value in that it offers the training officer additional opportunity for repetition and, when needed, elaborating on his previous instruction.

LESSON CHECKING CHART

1. What was the lesson topic? _____

2. What was the objective of the lesson? _____

3. Could you identify a Step I (method used)? _____

4. Did the instructor have a Step II? _____

   (a) What method was used in presenting the material?
      1. Demonstration and explanation _____
      2. Illustration and explanation _____
      3. Explanation _____
      4. Suggestive questioning _____

   (b) Were the instruction points arranged in proper learning sequence? _____
   (c) Were explanations and questions "clear-cut"? _____
   (d) Was emphasis placed on essential points? _____
   (e) Clear explanation of technical terms _____

5. Was there a Step III? _____

   (a) Was the trainee permitted to do the job? _____
   (b) Was help given when needed? _____
   (c) Were suitable questions asked to determine essential knowledge? _____

6. Was there a Step IV? _____

   (a) Could the trainee do the job unaided? _____
   (b) Does he possess the essential knowledge? _____

7. Were the necessary materials for the lesson on hand and conveniently located? _____

8. Did the instruction show evidence of "advance planning"? _____

9. Were too many instruction points included in the lesson? _____

10. Did the instructor stick to his instruction topic? _____

Point 12.

The training officer requests the trainees to make a second lesson plan. He should give them some assistance in selecting an instruction topic. If his previous instruction has been thorough, the second lesson is in the nature of a test.

Point 13.

The same procedure is followed as was previously outlined in Points 9 and 10.

Point 14.

There is only one way in which the training officer can check on the effectiveness of his instruction, and that is by observing the trainees (now instructors) when they in turn are instructing an individual or a group as a regular assignment. It may be found on inspection that a certain amount of additional training is necessary from time to time. The amount of additional training is dependent to a large degree on how thoroughly the original training was carried out.

Training Conference Leaders

The same general procedure outlined for training instructors in the use of the Four-Step Method can be used with minor modifications for training conference leaders.

The following material suggests a training officer's topical outline for instructing a group in how to lead a conference.

The Training Officer's Topical Outline

1. Explain the meaning and purpose of a conference.

   Distinguish from other instructional procedures.

   Define and illustrate the Free Conference and the Guided Conference.

   Reference page 51.

2. Explain the four stages of the conference. Touch briefly on the Fifth and Sixth Stages. Reference page 55.

3. Lead a demonstration conference; select a problem which will bring out the four stages of the conference.

4. By suggestive questioning, assist the trainees in identifying the four stages of the demonstration conference.

   Pass out printed copies of material presented up to this point.

5. Lead a second demonstration conference. Call the trainees' attention to the conference devices which are being used during the progress of the conference.

6. Elaborate on conference devices applicable to each stage of the conference.

   Pass out printed material on conference devices. Reference page 70.

7. Review the difference between a Free Conference and a Guided Conference. Emphasize that the Guided Conference is best suited to training and that it can be planned in advance. Explain that the Free Conference is used more for solving real problems and that a good understanding of the fundamentals of conference procedure is necessary in order to guide it to a worthwhile conclusion.

8. Pass out copies of "Outline for Planning the Guided Conference", page 62. By use of this form develop an outline for a conference on the chart. Bring out that the outline cannot be adhered to one hundred per cent in practice, but it will serve as a reminder list.

9. Assist the trainees in the selection of a simple conference topic and render individual assistance in the preparation of a conference plan. Be sure to give each individual's plan a final check. It is important that their first conference leading experience be successful.

10. Have each trainee lead a practice conference.

    Important. - Be seated near the trainee while he is leading his conference - help him when he needs help. Do not let him get into serious trouble.

11. Review the practice conference. Use the "Outline for Planning the Guided Conference" as a check list for systematic review. The review should begin with a statement as to the objective for the conference. Do not overlook the opportunity for presenting additional instruction when reviewing each practice conference and other ways in which the conference could have been handled to better advantage.

12. Have the trainees select a more difficult topic or problem for a second practice conference. Follow the same procedure as outlined in Points 9, 10 and 11.

13. If possible, have the following pamphlets and books on conference leading available for the group:

(1) The Training of Foreman Conference Leaders - Bulletin #125.
(2) Report of a Training Course for Foreman Conference Leaders - Bulletin #164.

The foregoing may be secured from the Superintendent of Documents, Washington, D. C.

(3) Conference Manual for Training Foreman - by Shellow & Harmon, Harper & Brothers Publishers, New York.

(4) Foremanship & Supervision - by Frank Cushman - John Wiley & Sons.

(5) Managing Minds - by Allen & Teeman - The Century Co.

14. Arrange for a systematic followup for the purpose of checking the trainees under actual working conditions and render such additional assistance as may be needed.

The foregoing outline for training conference leaders does not include all of the material included in the handbook on the conference. The training officer should assign a certain amount of reference reading during the training course and discuss such assignments with the trainees at opportune intervals.

Knowledge of the fundamentals of conference leading may be imparted by instruction, proficiency in leading a conference can only be attained by experience.

PART II - SECTION I

DETERMINATION OF TRAINING NEEDS

In preparing to train a man for the work he must do, the instructor's first concern is to determine what duties must be performed to fill the position satisfactorily. This involves breaking the position down into its component parts or jobs. (See Chart No. 1.) Anything to be analyzed must first be broken down into its main divisions. Then each division is further broken down into parts that make up the division. Then each part is further broken down into the things which make up the part. Only through orderly procedure can anyone undertake to train another and be assured that all which must be learned has been covered.

The mere listing of jobs or duties that an individual may be called upon to perform is wholly inadequate from the standpoint of determining what should be taught. In order to have proper instructional material, each job in the original breakdown must be further separated into the physical operations necessary to accomplishment.

The final step is determination of knowledge and manual skill required to perform these operations. Job analysis simply means that a job is viewed in detail in order to see just what the man does and what he must know to do it. A sample lookout position analysis follows:

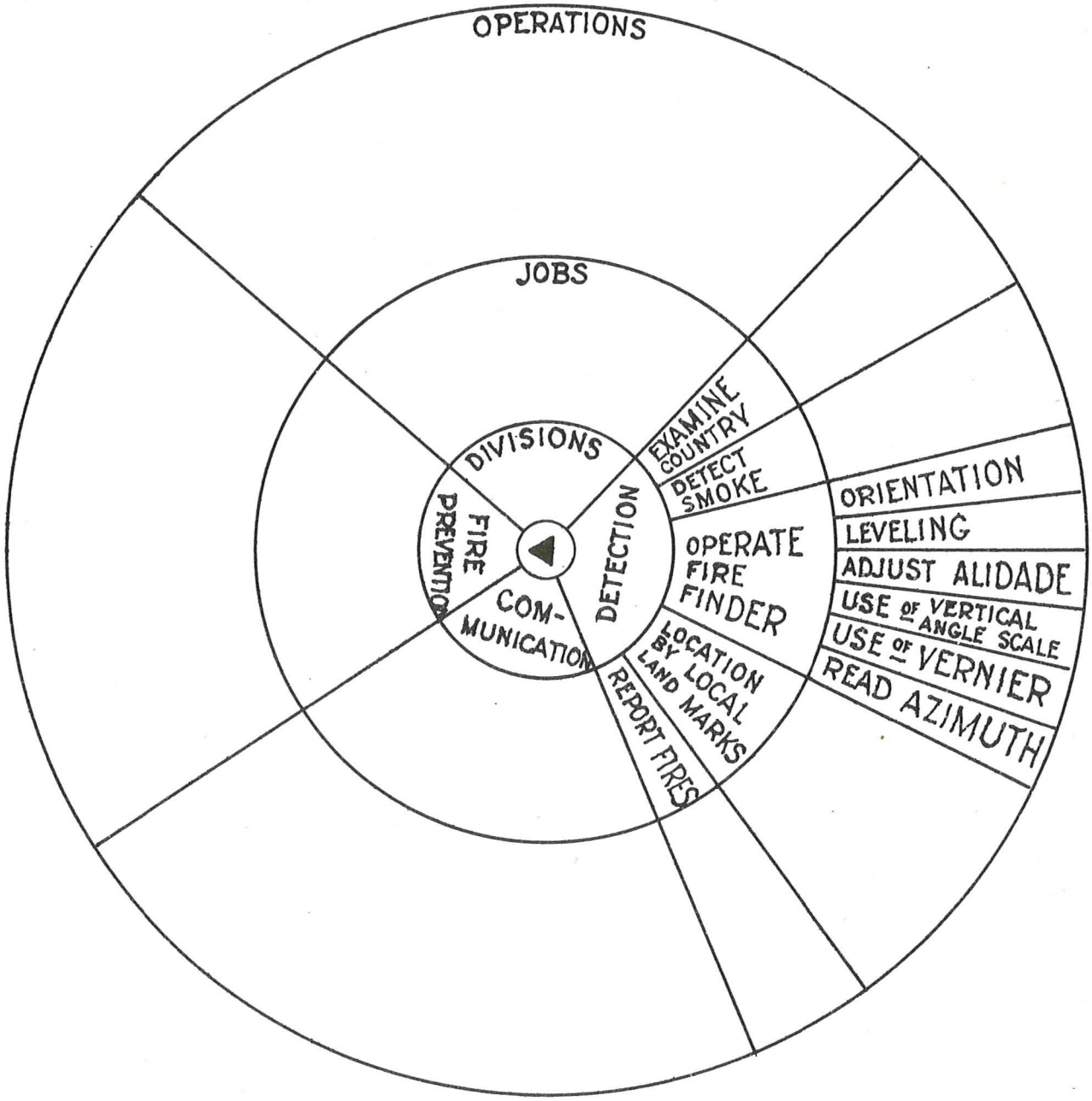

OPERATIONS
JOBS
DIVISIONS
FIRE PREVENTION
COM-MUNICATION
DETECTION
EXAMINE COUNTRY
DETECT SMOKE
OPERATE FIRE FINDER
LOCATION BY LOCAL LAND MARKS
REPORT FIRES
ORIENTATION
LEVELING
ADJUST ALIDADE
USE OF VERTICAL ANGLE SCALE
USE OF VERNIER
READ AZIMUTH

CHART 1.

POSITION PRIMARY LOOKOUT

Station _____ Ranger District _____

Main Divisions of Position	Jobs Comprising Divisions
Detection	Examination of Country
	Detecting Smoke
	Care and Operation of Fire Finder
	Locating Fires by Local Landmarks
	Reporting Fires
Fire Prevention	Conducting Public Contacts - or - (Greeting Visitors)
	Register Visitors
	Explanation of Job to Visitors
	Purpose of Forest Fire Protection
Communication	Locate & Repair Ordinary Tel. Instrument Troubles
	Locate & Repair Ordinary Trouble in Lightning Protection
	Inspect & Repair Ground Connections

ANALYSIS OF A LOOKOUT POSITION

Jobs to be Performed	Operations to Accomplish	Knowledge Required
Operate Firefinder	Level Firefinder	How to use spirit level. How to level firefinder by use of thumb nuts.
	Check Orientation	How to determine true north. How to check and adjust meridian on map so that it fits firefinder plate properly. How to adjust firefinder plate.
	Check adjustment of Alidade	How to plum sights. How to adjust hair. How to adjust tape.

Jobs to be Performed	Operations to Accomplish	Knowledge Required
Operate Firefinder	Use of Alidade.	How to turn alidade. How to sight correctly. How to use scale on tape.
	Use of Vertical Angle Scale.	How to adjust sight. How to read scale.
	Use of Vernier.	Purpose of Vernier.
	Reading Azimuth.	
Detect Smoke	Systematic Examination of Terrain.	How to make systematic survey of country visible.
	Distinguish between real and false smoke.	Be able to identify fog, dust, smoke. Location of industrial smoke.
	See smoke quickly.	Ability to keep constantly alert.
Locate Fires accurately	Sight on smoke.	How to sight.
	Read firefinder.	How to read firefinder.
	Locate fire on map by Section, Township, Range.	Understanding of map features.
	Locate by streams, ridges, etc.	Knowledge of country.
	Recheck	Appreciate importance of accuracy.

Jobs to be Performed	Operations to Accomplish	Knowledge Required
Record location of fire and other information and report to Dispatcher.	Enter on report Azimuth, S.T.R., topography, location, type, cover, size, behavior, wind, etc. Check for accuracy.	Understanding of report form. Different smoke colors and their meaning. How to estimate size of fire.
	Transmit to Dispatcher.	Who to report to and how.
Make Progress Reports on Fire.	Current Observation of Fire.	
	Estimate Spread.	How to measure size of fire.
	Report wind velocity and direction changes.	How to determine wind velocity and direction.
Make Weather Observations.	Measure precipitation.	How to read measuring stick.
	Take wind velocity readings.	How to dial and convert from chart.
	Measure humidity.	How to operate psychrometer.
Watch for and Report Progress of Lightning Storms.	Estimate distance	How to determine distance by storms relation to landmarks of known distance.
	Determine whether dangerous or cloud to cloud.	What is meant by cloud to cloud and cloud to ground.

Jobs to be Performed	Operations to Accomplish	Knowledge Required
Watch for and Report Progress of Lightning Storms.	Record Strikes. Report progress to Dispatcher.	What types of cloud formations are dangerous. Understanding of common terms used on forms.
Care of Tools, Equipment, and quarters.	Sharpen and oil tools. Store equipment to avoid damage, police quarters daily. Repair broken windows, steps. Paint.	How and when to do.
Make Regular Schedule Test. Reports to Dispatcher	Telephone dispatcher on time. Keep lightning protection and phone connections in order.	Know time schedule. How to check and maintain communication system.

Our analysis will not fully accomplish its purpose of indicating what to teach a lookout unless things that go wrong most often on a lookout and cause serious failures are emphasized. They can then receive special attention, and more time can be allocated to them when preparing the class programs or training in-place schedules.

What goes wrong	Reasons for failure
Wrong azimuth reported	Alidade out of adjustment
Fog or dust reported as fire	Cannot identify smoke
Does not see fire soon enough	Lack of systematic observations
Telephone or radio out of order	Lack of proper lightning protection

After the positions have been analyzed and determination made of the knowledge required by the individuals to perform the tasks correctly, appraisals must be made of the men to be trained. The individual's knowledge, skill, and ability should be appraised and balanced against the requirements and demands of the job. It is just as essential to make this appraisal of the individual as it is to make a detailed breakdown of the job. The individual's deficiencies in knowledge and skill to perform the tasks or duties of the position constitute his training needs. This applies to new unseasoned men, as well as to experienced men.

There are a number of ways to appraise an individual's knowledge. If the employee is new he will be interviewed and may be given an examination before selection; or his knowledge, skill, and ability may be tested.

In the case of men who have been employed during former years, inspection reports or records of the individual's training for the previous year may be used. Observation and personal knowledge tests and examinations offer additional means of appraisal.

When the position to be filled has been broken down into jobs and the jobs in turn into their operations, the training jobs defined for each operation should be transcribed to the form entitled "Appraisal of Individual's Training Needs", under the caption "Knowledge and Skill Required". See page 113 of this section. Similarly when the knowledge, skill, and ability of the trainee have been determined as accurately as possible, they should be set down on the form in the column entitled "Trainee's Present Knowledge and Skill".

By thinking through the points listed under "Knowledge and Skill Required", the Forest officer is in a better position to determine the training needs shown under the major "Operations" of the job, which appear in the first column. Too often the tendency is to assume a man possesses certain knowledge when actually he does not understand and cannot perform the operation correctly. Such erroneous assumptions result largely from mistaking experience and years of service on the job for knowledge. If the plans are based upon such conclusions, the training program surely will fail in accomplishing its purpose. It is better to retrain and make sure the job is thoroughly known than have partially trained men in responsible positions.

(SAMPLE)

APPRAISAL OF INDIVIDUAL TRAINING NEEDS

Division Detection — Anstett Employee

Job: Operate fire finder — L.F. Position

Operations	Training Needs as Checked	Knowledge and Skill Required	Trainee's Present Knowledge and Skill
A. Level fire finder	X	A.(1) How to use spirit level	o.k.
		(2) How to level fire finder by use of thumb nuts	No
B. Check Orientation		B.(1) How to determine true North	o.k.
		(2) How to check and adjust meridian on map so that it fits fire finder plate properly	o.k.
		(3) How to adjust fire finder plate	o.k.
C. Check adjustment of alidade	X	C.(1) How to plumb sights	o.k.
		(2) How to adjust hair	No
		(3) How to adjust tape	?
D. Use of alidade	X	D.(1) How to turn alidade	o.k.
		(2) How to sight correctly	o.k.
		(3) How to use scale on tape	?
E. Use of vertical scale	X	E.(1) How to adjust sight	?
		(2) How to read scale	?
F. Use of vernier		F.(1) Purpose of vernier	o.k.
G. Reading azimuth		G.(1) How to read azimuth	o.k.

(The above will be carried out for all of the jobs connected with the position Anstett is to fill.)

PART II - SECTION II

PLANNING THE GUARD TRAINING PROGRAM

Training, to be effective, must be thoroughly analyzed, organized, and planned. Just as blue prints and detailed drawings are prepared prior to a construction job, so carefully prepared plans must be made for undertaking a training job.

Assignment of Training Responsibility

On each Forest the responsibility for guard training should be definitely assigned to some individual. In most cases this is the staff officer responsible to the Supervisor in fire control. In this capacity the individual becomes the training officer in fire control subjects for the Forest. It is his responsibility to:

1. Work with and assist rangers in analyzing the training needs of the fire guard organization, including cooperators and key men, and in development and preparation of individual training plans.

2. Assist rangers in determining types of training:

   a. Group training subjects

   b. Training in-place "

   c. Follow-up training "

   d. Pre-camp training "

3. Program the training job.

4. Arrange for and supervise training camp set-up.

5. Select instructors, assign teaching topics, supervise lesson planning, and train instructors to each.

6. Set up and maintain a record of training accomplishments.

7. Conducting camp. Establish class periods and other necessary camp schedules, and see that they are followed. Instruct camp-boss in his duties. Observe teaching practices and see that the course of instruction is given smoothly and effectively.

8. Check on follow-up and "place" training practice.

9. Assist ranger in giving place and follow-up training.

10. Maintain cost record for group training.

Other staff officers have definite training responsibilities with relation to the fire guard organization. In connection with inspection and general supervision, they will find many opportunities to give training in place and follow-up. It should be understood, however, that in this training activity they are representing the district ranger. In addition, they will act as instructors in group training under the direction of the training officer.

The district ranger's responsibilities in training may be listed as follows:

1. Determine the training needs of his men, assisted by training officer.
2. Prepare individual training plans.
3. Assist training officer in group training, as instructor.
4. Assist training officer as necessary in establishing and dismantling camp.
5. Get his men to group training camps.

6. Mark, list, and check supplies and equipment furnished training camp from his district to facilitate its return.

7. Training in-place and follow-up training on his district in accordance with approved training plans.

8. Pre-camp training.

9. Cooperator and key man training, in-place, pre-camp, and follow-up.

Some training activities may be delegated to a guard under the general supervision of the district ranger.

The Individual Training Plan

Training an individual is not static but is a continuing process. It then follows that a training plan for an individual should be developed which will set forth specific training needs of the man for his entire employment period. Individual training plans or programs are predicated on an analysis of individual training needs. As previously discussed in Part II, Section I, these training needs, as well as the training jobs themselves, are determined through the process of job analysis and appraisal of individuals. Five operations must be carried out in development of an individual training plan. These are:

1. Job analysis list of doing jobs (what must be done?).

2. Determination of knowledge required (what must be known?).

3. Appraisal of individual (what can he do and what does he know?).

4. Weighing and balancing job demands against individual's knowledge, skill, and ability (the doing and the knowing must be correlated).

The techniques of performing operations listed above are outlined in detail in Part II, Section I.

5. Listing training needs of the individual. This operation constitutes the initial step in the development of the plan and consists of listing the guard's knowledge or skill deficiencies in which the man is in need of training. The next step is the determination of how the training job is to be done. This involves decision as to the type and method best suited for each training job and, in addition, the time, place, and to whom the actual job of training will be assigned.

A training plan outlining all of an individual's training needs (sample which is given on page 118) is essential to good training and is a tool or mechanical means for aiding and directing training efforts. Individual training plans should be prepared for each trainee in accordance with the methods outlined. The sample form shows that the plan when prepared would not only indicate training needs but would, through use, be a training record. Specific training jobs can be assigned and the training of the individual thus carried out in a systematic manner.

(Sample)

INDIVIDUAL TRAINING PLAN*

Name _____ Title _____

Station _____ Ranger District _____

Experience _____ Year _____

1. Training Jobs	2. Type of Training	3. Method of Training	4. To be done by	5. When to be done	6. Has been trained	7. Inspected or tested	8. Remarks
Orientation of firefinder	P	4-step	Dist. Rgr.	July	J.F.C. 7/5/36	J.F.C. 8/1/36	O.K. - J.F.C.
Preparation of lightning storm report	G	4-step	In-struc-tor	June	yes	7/2/36	Needs follow-up
Inspection of a tourist camp	G	Conf.	Leader	June	yes	7/4/36	O.K.
Care of tools	P	4-step	Dis-patcher	June			
Care of Quarters	G	Drama		June	yes	7/7/36	Needs follow-up
Weather Observations and reports	T		Dis-patcher	June	No	No	

*Columns 1 to 5 constitute the individual plan of training;
Columns 6-8, a record of training given and of follow-up training needed.

G-Group Training Camp P-Training in place T-Training by telephone

(SAMPLE)

Name Kelly Title L.O.

Station Goat Pk. Ranger District Pasayten

Experience New Year 1936

* 1. Training Jobs	2. Type of Training	3. Method of Training	4. To be done by	5. When to be done	6. Has been trained	7. Inspected or tested	8. Remarks
Law Enforcement	G	Conf.	Rgr.	June			
Public Contacts	G	Conf.	Rgr.	June			
Care of Field Stations & Camp	G	Dram.		June			
Tool Assemblies	G	4-step	Rgr.	June			
Rain Gauge Anemometer	G	4-step	Rgr.	June			
Haze Meter	G	4-step	Rgr.	June			
Psychrometer	G	4-step	Rgr.	June			
Communication Telephone	G	4-step	Rgr.	June			
Communication Radio	P	4-step	Rgr.	July			
Operation and Care of fire finder	G	4-step	Rgr.	June			

* Columns 1 to 5 constitute the individual plan of training.
* Columns 6-8 a record of training given and of follow-up training needed.

G-Group Training
P-Training in place
T-Training by telephone

(The above program will be carried out for all of the jobs connected with the position Kelly is to fill.)

Subsequent to determining individual training needs, the training job may be done by:

(1) Preliminary training prior to employment.

(2) Individual training on the job.

(3) Group training.

Individual Training

In-Place or on the Job. The major part of training or developing an individual is accomplished by training on the job or in-place. It is evident and experience proves that intensive group training of men for a limited period does not produce qualified and thoroughly trained men. While a well conducted guard training camp will supply a part of an individual's training needs, other important training jobs must be done on the job. Place training, as well as group training, to be effective and worthwhile, must be carefully planned, assigned, and scheduled.

District rangers or assistant rangers and, where qualified, guards must handle job training. Some assistance may be given by staff men, but the district ranger is responsible for meeting the training needs of his men.

This matter of training one man in a job involves a great deal more than telling him how to perform a given operation. The teaching principles used for group training apply to in-place training and must be observed. It is of utmost importance that the ranger or other officer charged with the responsibility for guard inspections approach the job with a full consciousness of the training aspect of the contact. He should keep in mind that it is just as necessary to use the approved methods of training here as it is at the Guard Training Camp. The

individual's training plan should be consulted, and training jobs designated for in-place training handled promptly and systematically.

Copies of individual training plans should be carried by district rangers on all guard inspection trips, the plans being referred to while with the man and the training needs then covered. The fire guard, employed for six months at the most, receives a maximum of six days' or around forty-eight hours' actual training. This brings out the importance of making the best use of training time by organization, by planning, by effective instructing, and by supplementing job training with telephone training.

The general purposes of inspection are:

1. To compare the quality of the work with established standards.
2. To determine the underlying reasons for failure to meet the standards.
3. To determine and give additional training needed.
4. To stimulate and inspire the employee to better future performance.

Where inspections reveal that additional training is required to enable the employee to perform his job satisfactorily, it should be given before the inspector leaves the station. Unless this is done, the inspector has missed one of the finest of training opportunities and from the training standpoint has failed to redeem his responsibility.

Each man should have a copy of the inspection outline and be required to make self inspections. The following composite form is suggested: see page 122. The left-hand column, or items of inspection, will vary in different regions and even on forests within a region,

but the form itself is desirable since it provides space for the employee to record the results of self-inspections. It also provides adequate space for the use of inspectors throughout the season.

SAMPLE

INSPECTION OUTLINE AND GUARD TRAINING LIST

Name _____

Station _____

Forest _____

Month _____ Year _____

I - Improvement Required

S - Satisfactory

E - Excellent

Items of inspection	Training Camp Record	Guard's Self-inspection				Inspection by Rangers & Others			
		Date & Initials	Date & Initials	Date & Initials	Date & Initials				
Fire fighting objectives and policy									
Immediate action									
Initial attack									
Staying with									
Checking									
Corral, control, out									
Law enforcement									
Campfire permit law									
Axe, shovel, water container									
Smoking while traveling									
Federal laws throughout year									
State Laws									
Power of arrest									
Equipment and quarters									
Fireman's outfit									
Car - tires, gas, oil									
Horses and equipment									
Quarters, condition									

Telephone Training. The telephone is a fine medium for handling some phases of personnel training. In general, this type can be highly effective but is often neglected. Dispatchers and protective assistants can aid materially in the program by discharging a part of their training responsibility by telephone.

Short-term men should be encouraged to seek advice and instructions via the telephone. Jobs suitable for training by this method should be designated on each individual's plan and so handled. No attempt should be made to train a man exclusively by long distance methods, but where practicable such a medium should be used.

Definite scheduling of assignments to an instructor on the individual training plan and listing the jobs for the dispatcher or P. A. aids in accomplishing the program. This method has possibilities, and by experimentation District Rangers can determine the training jobs possible to handle by telephone. The effectiveness of the training given by telephone should be checked on the ground during subsequent inspections. This check will also serve to determine the efficiency of the instructor.

Group Training -- Guard Training Camp

The guard training camp, when used with individual training on the job, is an extremely valuable means of handling a part of the individual's training. The limited time devoted to instruction at the guard training camps will not thoroughly prepare the guard for his job. It must be kept in mind that relatively few jobs can be adequately presented and not all jobs lend themselves to group training.

There is immeasurable value in the training camps aside from the actual training accomplished. It is very desirable to get the fire guard organization together just prior to or immediately after their entry on duty in order that they meet one another and exchange ideas and experiences, thereby learning much of value to the Service through personal contacts with other men engaged in the same kind of work. At the training camps the men meet not only their own ranger but also other forest officers; and through these contacts is developed a spirit of team work which serves as a powerful incentive to do good work in the organization. For example, at the camp the relationships between the various positions in the protection organization are brought out and the importance of each man doing his full share of the work is emphasized. A lookout is made to realize that if he fails to detect, locate accurately, and report fires promptly, he may cause a fireman a great deal of difficulty and hard work as well as spoil the fire record of the unit. He comes to know that an avoidable failure on his part is sure to be censored by his co-workers, as well as by his superior officers. In addition, at the training camp forest officers are able to compare the protection men one with another, and often certain characteristics or deficiencies are detected which might not be apparent without such comparison.

Preliminary Plans. The time and the place for the group meeting should be decided at least six weeks in advance of the actual meeting date. Careful planning and thorough preparation are essential. The success of the camp will depend largely on how well these jobs are handled. Where practicable a group meeting of rangers and the training officer should be held and all preliminary plans discussed. Wherever possible this meeting should be held several weeks in advance of the time it is expected the camp will be held.

Ordinarily the training camp is scheduled in late spring or early summer, which is during an extremely busy season for field men. District Rangers must have ample opportunity to prepare for the camp and arrange their work accordingly.

Careful management and control of the finances are essential in order to obtain maximum instruction and training for each dollar expended. The training officer is responsible for keeping a record of the costs and for seeing to it that the allotment available is not exceeded. In making the plan for the guard training camp he should prepare a financial sheet, stating amount available, estimate of costs by major items, and the total of actual expenditures. These records will be found of value in planning camps in future years. A sample of such a financial sheet follows:

Sample Estimate of Guard Training Camp

Guard Training Allotment			480.00
Salaries guards not on duty - 3 da.		109.00	
Groceries		170.00	
Cook --(1) 5 da.		20.00	
Cook's Helpers -- (2) 5 da.		28.00	
Bull Cook -- (1) 5 da.		17.00	
Transportation			
Trucks - Fulton	300 mi.		
Floe	100 "		
Olander	50 "		
Mapes	50 "		
Hough	200 "		
	700 " @ 7¢	49.00	
Guard Mileage Est. 600 mi. @ 5¢		30.00	
Fire truck (Mapes) Est. 210 mi. @ 14¢		30.00	
Supplies		25.00	
Total Expenditures			478.00

Time Set-up for the Camp. The subjects to be covered at the group training camp will be determined from the summary of individual training needs. It is of great importance that sufficient time be provided to do a thorough training job in each subject. Experience over a period of more than fifteen years has proved that the fundamental subjects in which the protection force must be trained require not less than three days. More often than not, more than three days' actual instruction time should be provided. Certainly, if any subjects are introduced at these camps which are not fundamental to the actual handling of the fire control problems, the required additional time to handle them should be provided.

The Camp. Some forests have developed the fire camp method in which conditions resemble as closely as possible a project fire camp. Others have adopted the improved camp system, where better accommodations are provided. Some forests have used one central camp, others two, and still others have had a camp for each ranger district. On some forests the locations of the camps have been changed from year to year, while on others permanent camp sites have been developed.

From the training standpoint central, improved, permanent camps are most desirable. Some forests, however, may find it necessary, because of differing periods of employment on different parts of the forest or because of high transportation cost, to hold more than one camp. The central, improved, permanent camp provides closer supervision of the instruction given and more effective use of the instructor's time. Learning conditions are improved as a result of more comfortable

accommodations for both instructors and trainees. It is easier to assemble material and equipment needed for instruction and distribute them as needed. Permanent, well-planned problems can be laid out and used from year to year.

Camp Planning. Construction of improvements and the laying out of problems permanent in character should be based on a well developed plan insuring the best returns for amount expended, over a period of years. (A suggested plan appears on page 130.) In preparing such a plan, space allowance for various improvements and activities should be given careful consideration. Following is a reminder list for preparing a plan for a training camp layout:

Reminder List - Training Camp Layout

Quarters for trainees (by squads)	Parking space
Quarters for instructors	Recreation court
Quarters for visitors	Flag Pole
Quarters for campboss	Toilet
Quarters for kitchen help	Garbage
Place for camp equipment and supplies	Road
Place for subsistence supplies	Water system
Kitchen	Washing facilities

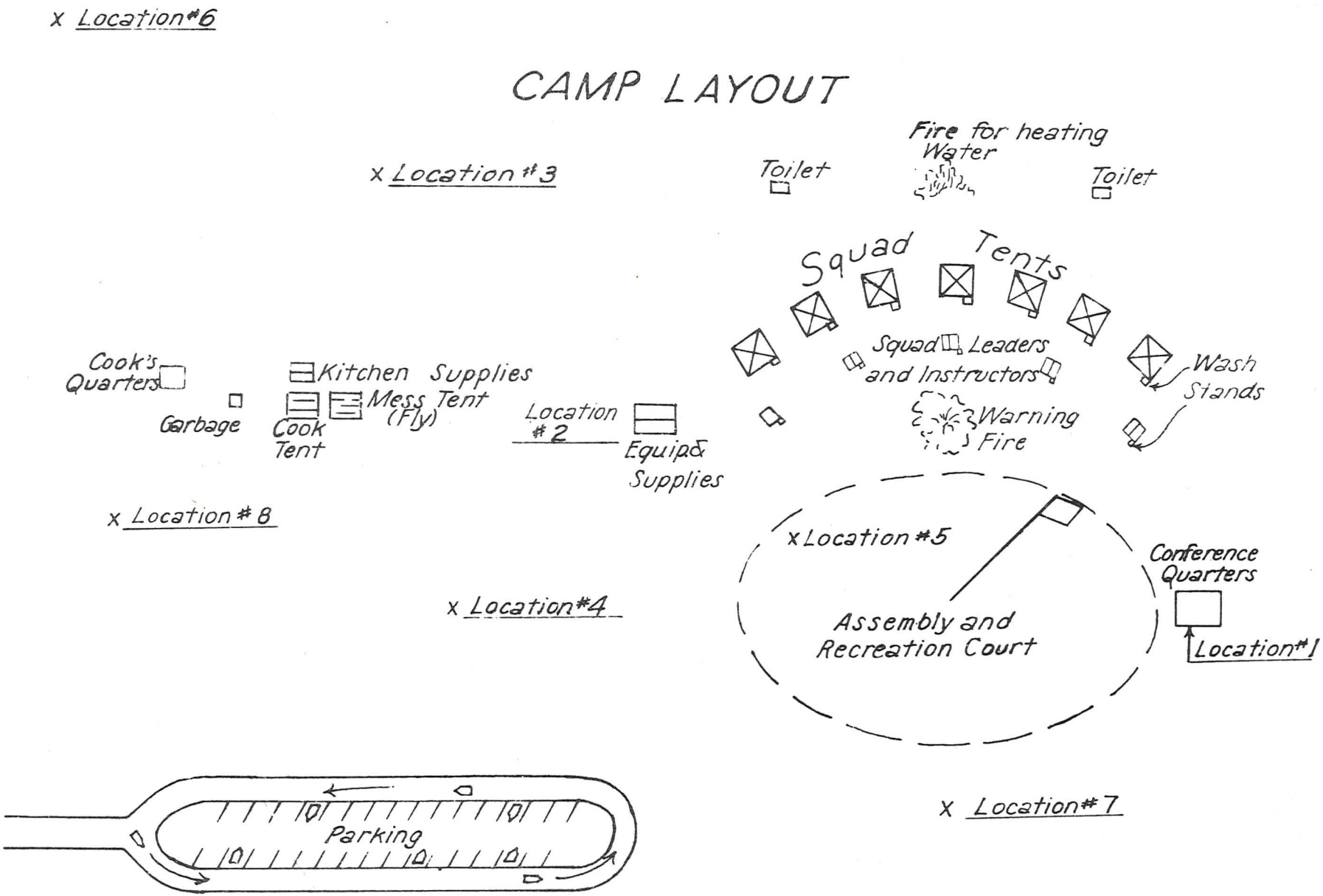
Covered mess with tables and benches	Warming fire
Place for conference meetings	Water heating facilities
Place for class instruction	Headquarters problems
Field problems	

The Camp Manager. The training officer needs assistance in handling details before, after, and during the camp period. The following list indicates a number of activities which may be delegated to the camp manager.

1. Lay out problems.
2. Set up and break camp.
3. Order and check supplies.
4. Distribute and keep record of tools and equipment.
5. Supervise kitchen force.
6. Attend phone calls.
7. Dispatch messages.
8. Keep check on sanitation.
9. Keep time of men and training camp cost records.
10. See that parking rules are observed.
11. Attend flag.
12. Check camp policing.

Supplies and Equipment. Because of the various kinds of camp equipment used on different forests, no standard list is presented. It is advisable, however, for each forest to prepare such a list for reference.

CAMP LAYOUT


x Location #6
x Location #3
Toilet
Fire for heating Water
Toilet
Squad Tents
Squad Leaders and Instructors
Wash Stands
Warning Fire
Cook's Quarters
Kitchen Supplies
Mess Tent (Fly)
Garbage
Cook Tent
Location #2
Equip & Supplies
x Location #8
x Location #5
Conference Quarters
Assembly and Recreation Court
Location #1
x Location #4
x Location #7
Parking

Camp equipment which can be used at other training camps from year to year should be stored and added to as funds permit.

All material and equipment needed for instruction should be listed and assembled in advance of the training camp. The main source of information for material needed is the lesson plans. In addition, minor incidental items may be called for by instructors. This material should be delivered to the camp manager, who is the property custodian, and it should be kept at one central place ready for distribution as called for by instructors.

Lesson material such as charts, blackboards, and other special teaching devices which can be used year after year should be designed and built for permanent rather than temporary use.

Problem Layout. Space for the various classes should be laid out so that the training of one group will not interfere with the training of others. Places for charts, blackboards, and other necessary equipment should be selected in advance so as not to delay the program. Where transportation is available it should be remembered that proper location of problems is of enough importance to justify hauling men considerable distances. Many problems can be laid out with permanent field markings and sketches made to be used from year to year.

Conduct of Camp. If for no other reason than the building up of morale, instructors should adhere closely to camp schedules. When not engaged in training, they should keep fully occupied in reviewing the material

to be presented at their next class, or in assisting the man in charge of the camp as he may direct. Trainees will be quick to notice apparent idleness.

The matter of having one instructor assist another instructor should be given considerable thought and planning. There must be a clear-cut understanding as to which instructor is in direct charge. Unless due care is exercised, the course of instruction is more than likely to end in an argument between the two instructors as to the best way a certain job should be done. The occurrence of such a situation not only wastes time but tends to cause the trainees to lose confidence in the instructors and the organization.

During times when the trainees are not engaged on scheduled program work, some form of recreational activity is very desirable. Also within a lesson requiring mental concentration with little physical activity, a break should be made with a short recreational period. Another benefit derived from recreational activities is development of a group spirit, which is desirable in the organization.

Considering the fact that the men who will attend guard training camps have been hired for their dependability and good conduct, it is considered better practice to test their character by relying upon their honor rather than to set up disciplinary rules and demand their observance. A few simple rules to insure best utilization of training time sometimes are necessary.

Programming the Guard Training Camp. After the determination has been made of training topics or training jobs to be presented at the camp, the next step is the preparation of the guard training camp program.

The first step is to prepare "the Summary of Group Training Needs" form for the entire forest or other training unit. Reference, page 134a. This form combines all training jobs listed for presentation at the camp on the trainee's "Individual Training Plan," form. (Refer to page 118 of this section). This is best done by listing the entire training needs for a unit or an entire forest on a single form. On this form the individuals to be trained at the camp are listed by name, and the positions they will occupy and the jobs in which they are to be trained are indicated.

The men are listed by position groups, and needs are checked in appropriate columns. The time requirement for each subject as determined by the training officer is indicated at the top of the form. Half-hour subjects are very difficult to program unless paired in such a way as to fill in the full hour. The same is true of a three-hour subject unless it is paired with a one-hour subject. If the subjects checked for any one man exceed the total instructional time available, it will be necessary to cross off one or more subjects.

Topics designated for presentation in the guard training camp which, for lack of time, cannot be given should be so designated on the individual's training plans, and such omissions should be handled by in-place or telephone training.

(A copy of the "Summary of Group Training Needs" follows.)

The second step is the preparation of the Master Program for the camp, the program being prepared for each day. Care must be exercised in developing the master program so that the proper sequence of subjects is observed, with elementary lessons preceding advanced lessons. For example, pacing instruction should be given before compass work is taken up and map reading should be given before detection instruction is given.

The third step is to make out the instructor's program for the camp. Each instructor should know the subjects he will be responsible for teaching, the size and experience of the group or class, in ample time prior to the training camp. Sample of instructors' program on page 140 of this section.

The fourth step is to make up the individual trainee's program (sample on page 141). The individual's schedule gives the topics, location for his group and time and day for the training topic. The trainees should be given their schedules at the first assembly. Meeting places or training locations should be suitably marked or numbered and carefully explained to the men. This will insure men being at class locations on time and avoid confusion.

Note: It is suggested that the instructor's program and the guard's program be typed on stiff paper.

Grades should be inserted on the instructor's program for each man immediately after the lesson is finished, using the rating symbols as shown on page 122 of this section.

SUMMARY OF GROUPS TRAINING NEEDS

SYMBOLS:

✓ Indicates men needs instruction.

E Class or general assembly during evening.

Name	Position	Station	Sec. A Fire Prevention: Law Enforcement	Public Contacts	Care of Field Stations & Camps	Sec. B Tools Equipment - Quarters: Small Tools (4-Step)	Felling Tools (4-Step)	Tool Assemblies Care & Use Anemometer	Hose Meter	Psychrometer Operation	Telephone (4-Step)	Communication Radio (4-Step)	Equipment Readiness (4-Step)	Sec. C Detection: Operation and Care of Firefinder (4-Step)	Firefinder (Experienced)	Use of Lookout's Forms and Records (4-Step)	Use of Lookout's Reading, Recording, Strikes	False Smoke (4-Step)	Mirror Flashing (4-Step)	Care of Lookout Station (4-Step)	Training Other Lookouts (4-Step)
Lesson No.																					
Time Schedule			E	E	E	1	2	½	½	½	1	2	½	4	1	1	¼	¼	½	½	
Kelly	L	Goat Pk.	✓	✓	✓			✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	
Jones	"	Dixie	✓	✓	✓			✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	
Brown	"	Buck Pk.	✓	✓	✓					✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
Anderson	"		✓	✓	✓					✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
Bowen	L.F.		✓	✓	✓						✓				✓						
Nehr	"		✓	✓	✓						✓				✓						
Miexner	"		✓	✓	✓									✓							
Anstett	"		✓	✓	✓						✓				✓						
Dean	"		✓	✓	✓						✓				✓						
Olson	"		✓	✓	✓						✓			✓							
Coxen	"		✓	✓	✓						✓			✓							
Adams	"		✓	✓	✓						✓				✓						
Rugg	"		✓	✓	✓						✓			✓							
Bardwell	"		✓	✓	✓						✓				✓						
Gunn	"		✓	✓	✓						✓				✓						
Rogers	"		✓	✓	✓						✓				✓						
Kepplinger	F.		✓	✓	✓						✓										
Johnson	"		✓	✓	✓						✓	✓									
Ritter	"		✓	✓	✓						✓	✓									
Blair	"		✓	✓	✓						✓	✓									
Lewis	P.		✓	✓	✓			✓	✓		✓										
Fulton	"		✓	✓	✓			✓	✓		✓										
Engles	"		✓	✓	✓			✓	✓		✓	✓									
Strattford	"		✓	✓	✓			✓	✓		✓	✓									
Thomas	P.A.		✓	✓																	
Beedon	"		✓	✓																	
Langdon	"		✓	✓																	
White	"		✓	✓																	
Paine	Road For.		✓	✓							✓										
Garrett	"		✓	✓							✓										
Clark	"		✓	✓							✓										
Arthur	"		✓	✓							✓										
Lee	Tr'l For.		✓	✓							✓										
Wilson	"		✓	✓							✓										
Clum	"		✓	✓							✓										
Edwin	"		✓	✓							✓										
Richards	"		✓	✓							✓										
Paul	"		✓	✓							✓										
Rose	Coop.		✓	✓																	
Dort	"		✓	✓																	
No. of Trainees			40	40	24			6	6	4	4	33	7		8	8	4	4	4	4	4
No. of Classes			1	1	1			1	1	1	1	4	1		1	1	1	1	1	1	1

Name	Sec. D Fire Chasing: Maps (Inexperienced) (4-Step)	Maps (Experienced) Review	Field Markings (4-Step)	Panoramic Pictures (4-Step)	Topographic Maps (4-Step)	Pacing (4-Step)	Compass Orientation (4-Step)	Compass (Experienced) Review	Direction on L.O. Line of sight to find fire (4-Step)	Locating Fire Point (4-Step)	Locating Fire 2-Point Intersection (4-Step)	Gridiron Problem (4-Step)	Locating Fire Gridiron (4-Step)	Fireman Protector (4-Step)	Mapping L.O. Line of sight (4-Step)	Fire Pictures (4-Step)	Sec. E Small Fires: P-Men Fire (4-Step)	Mop-Up Conf.	Small Fire Suppression Conf. - Real Fire - Conf.	Sec. F Forms General: Forms, General (4-Step)	Sec. G Advanced Training: Teacher Training (4-Step)	P.A. Dispatcher (4-Step - Conf.)	Timekeeper (4-Step - Conf.)	Camp Boss (Conf.)	Straw Boss (Dem. Conf.)	Foreman, Crew Boss (Conf.)	Fire Chief (Conf.)	Scout (4-Step - Conf.)	Pump Operator (4-Step)	Hose Crew (Conf.)	Pick Crew (Dem. Conf.)	Killefer Crew (Dem. Conf.)	Recognizing Hazardous Burning Conditions (Conf.)	Cooperative Crews (Conf.)	Sec. H General: Eyesight Test	Total Hours
Lesson No.																																			
Time Schedule	1	1	1	½	½	1	2	1	4	4	1	1	3	1			3	1	6		1	8	12	4	12	4	4	8	4	2	4			1			
Kelly	✓			✓			✓		✓					✓					✓																		24
Jones	✓			✓			✓		✓					✓					✓																		24
Brown		✓		✓					✓								✓		✓																		24
Anderson		✓		✓					✓								✓		✓																		24
Bowen		✓					✓	✓	✓								✓		✓										✓								24
Nehr		✓					✓	✓	✓								✓		✓							✓											24
Miexner	✓				✓	✓			✓								✓	✓	✓																		24
Anstett		✓					✓	✓	✓																✓												24
Dean		✓					✓	✓	✓								✓		✓							✓											24
Olson	✓				✓	✓			✓					✓			✓	✓	✓																		24
Coxen	✓				✓	✓			✓					✓			✓	✓	✓																		24
Adams		✓					✓	✓	✓																✓												24
Rugg	✓				✓	✓			✓					✓			✓	✓	✓																		24
Bardwell		✓					✓	✓	✓								✓		✓							✓											24
Gunn		✓					✓	✓	✓								✓		✓							✓											24
Rogers		✓					✓	✓	✓								✓		✓							✓											24
Kepplinger	✓				✓	✓			✓					✓			✓	✓	✓							✓											24
Johnson		✓	✓				✓	✓	✓								✓	✓	✓																		24
Ritter		✓	✓				✓	✓	✓								✓	✓	✓																		24
Blair		✓	✓				✓	✓	✓								✓	✓	✓																		24
Lewis	✓		✓			✓		✓	✓								✓	✓	✓																		24
Fulton	✓		✓			✓		✓	✓								✓	✓	✓																		24
Engles			✓				✓	✓									✓	✓	✓							✓											24
Strattford			✓				✓	✓									✓	✓	✓							✓											24
Thomas																						✓		✓													24
Beedon																						✓		✓													24
Langdon																						✓		✓													24
White																						✓		✓													24
Paine											✓		✓				✓	✓	✓									✓				✓					24
Garrett											✓		✓				✓	✓	✓									✓				✓					24
Clark											✓		✓				✓	✓	✓									✓				✓					24
Arthur											✓		✓				✓	✓	✓									✓				✓					24
Lee			✓				✓	✓	✓		✓		✓				✓	✓	✓										✓			✓					24
Wilson			✓				✓	✓	✓		✓		✓				✓	✓	✓										✓			✓					24
Clum			✓				✓	✓	✓		✓						✓	✓	✓								✓					✓					24
Edwin			✓				✓	✓	✓		✓		✓				✓	✓	✓								✓					✓					24
Richards			✓				✓	✓	✓		✓		✓				✓	✓	✓								✓					✓					24
Paul			✓				✓	✓	✓		✓		✓				✓	✓	✓								✓					✓					24
Rose																	✓	✓	✓										✓								18
Dort																	✓	✓	✓										✓								18
No. of Trainees	9	13	13	4		5	9	19	22	21		10		15			32	24	34			4		6	8	4	6	3						10		
No. of Classes	1	1	1	1		1	1	2	3	3		1		2			4	2	2			1		1	1	1	1	1						1		

MASTER PROGRAM

FIRST DAY

7:15 - 7:45 Opening Talk	8:00 - 8:55	9:00-9:30	9:30-9:55	10:00 - 10:55	11:00 - 11:55	1:00 - 1:55	2:00 - 2:55	3:00 - 3:55	4:00 - 4:55	Evening 8:00-9:00	Evening 9:00-10:00
	Telephones Trouble Shooting Sec. B-5 4-Step	Tool Assemblies Sec.B-3 & 4d	Weather Instruments 4-Step	Radio Sec.B-51 4-Step		Locating Fire from Known Point Sec. D-5 4-Step				Law Enforcement	Care of Field Station & Camps
	Inst. #1 Brown Anderson Bowen Nehr Anstett Dean Adams	Inst. #3	Kelly Jones Lewis Fulton Engles Strattford	Inst. #3 Brown Anderson Johnson Ritter Blair Engles Strattford		Inst. #4	Johnson Ritter Blair Lewis Fulton Engles Strattford	Lee Wilson Clum Richards Edwin Paul		Entire Camp	Entire Camp
	Telephones Trouble Shooting Sec. B-5 4-Step	Maps (Experienced) Review Sec. D-1b 4-Step		Compass (Experienced) Review Sec. D-3f	Firefinder (Experienced) Review Sec. C	Getting on Lookout's Line of Sight to Find Fire Sec.D-4b 4-Step					
	Inst. #2 Bardwell Gunn Rogers Paine Garrett Clark Arthur	Inst. #4 Brown Anderson Bowen Nehr Anstett Adams	Bardwell Gunn Rogers Blair Johnson Ritter Dean	Inst. #4 Bowen Nehr Anstett Dean Adams Bardwell Gunn Rogers	Inst. #4 Bowen Nehr Anstett Dean Adams Bardwell Gunn Rogers	Inst. #2	Anderson Bowen Nehr Anstett Dean Bardwell Gunn	Adams Rogers			
	Compass (Experienced) Review Sec. D-3f	Pacing Sec. D-2 4-Step		Compass Elementary Sec. D-3 4-Step		Getting on Lookout's Line of Sight to Find Fire Sec.D-4b 4-Step					
	Inst. #4 Johnson Ritter Blair Engles Lee Strattford Wilson Clum Edwin Richards Paul	Inst. #5	Miexner Olson Coxen Rugg Kepplinger	Inst. #5 Kelly Jones Miexner Olson Coxen Rugg Kepplinger Lewis Fulton		Inst. #1	Kelly Jones Miexner Olson Coxen Rugg Kepplinger	Brown			
	Maps (Inexperienced) Sec. D-1a 4-Step	Fireman Protractor Sec.D-9a 4-Step		Gridiron Problem Sec.D-7 4-Step	Recognizing Hazardous Burning Conditions	2-Man Fire Sec.E-1 Fire & Conference			Mop-Up Conference		
	Inst. #5 Kelly Jones Miexner Olson Coxen Rugg Kepplinger Lewis Fulton	Inst. #1 Paine Garrett Clark Arthur Lee Wilson Clum Richards Edwin Paul		Inst. #1 Paine Garrett Clark Arthur Lee Wilson Clum Richards Edwin Paul	Inst. #2 Paine Garrett Clark Arthur Lee Wilson Clum Richards Edwin Paul	Inst. #7 Assist. #1	Paine Garrett Clark Arthur Rose Dort		Inst. #7 Assist. #1 Paine Garrett Clark Arthur Rose Dort		
	Inst. #6	P. A. Dispatcher (8 hours) Sec.G-2 4-Step & Conference Thomas Beedon Langdon White									

MASTER PROGRAM

SECOND DAY

8:00 - 8:55	9:00 - 9:55	10:00 - 10:55	11:00 - 11:55	1:00-1:30	1:30-1:55	2:00 - 2:55	3:00 - 3:55	4:00-4:30	4:30-4:55	Evening 8:00 - 9:30
	Operation and Care of Firefinder Sec.C-1 4-Step			Haze Meter Sec.B-4e 4-Step	Psychrometer Sec.B-4c 4-Step	False Smoke / Observing Signals Mirror Flashing / Reading & Sec.C-7 4-Step/Recording Strikes	Use of Lookout Forms & Records Sec. C-3 4-Step	Panoramic Pictures Sec. D-1e	Care of Lookout Station C-9 4-Step	Public Contacts Sec. A-2
Inst. #4	Kelly Jones Brown Anderson Miexner Olson Coxen Rugg			Inst. #2	Kelly Jones Brown Anderson	Inst. #4	Kelly Jones Brown Anderson	Inst. #4	Kelly Jones Brown Anderson	Entire Camp
	Locating Fire from Known Point Sec. D-5					2-Man Fire Sec.E-1 4-Step			Mop-Up Conference	
Inst. #2	Bowen Nehr Anstett Dean Adams Bardwell Gunn Rogers					Inst. #7 Assist. #1	Miexner Olson Coxen Rugg Kepplinger Johnson Blair Ritter Lewis Fulton		Inst. #7 Asst. #1 Miexner Olson Coxen Rugg Kepplinger Johnson Blair Ritter Lewis Fulton	
	Getting on Lookout's Line of Sight to Find Fire Sec. D-4b 4-Step					Scouting Practice and Conference Sec. G-8b 4-Step and Conference				
Inst. #1	Kepplinger Johnson Ritter Blair Lewis Fulton			Inst. #5		Bowen Lee Wilson				
	2-Man Fire Sec. E-1 4-Step	Mop-Up Conference				Foreman and Crew Boss Conference Sec. G-6				
Inst. #7 Assist. #1	Engles Strattford Lee Wilson Clum Richards Edwin Paul	Inst. #7 Assist.#1 Engles Strattford Lee Wilson Clum Richards Edwin Paul		Inst. #5		Clum Edwin Richards Paul				
	P. A. Dispatcher (4 hours) Sec. G-2 4-Step					Straw Boss Conference Sec. G-5				
Inst. #6	Thomas Beedon Langdon White			Inst. #1		Nehr Dean Bardwell Gunn Rogers Engles Strattford				
						Camp Boss Conference Sec. G-4				
				Inst. #3		Anstett Adams Thomas Beedon Langdon White				
	Fire Chief Conference (8 Hours) Sec. G-7									
Inst. #8	Paine Garrett Clark Arthur Rose Dort									

MASTER PROGRAM

THIRD DAY

8:00 - 8:55	9:00 - 9:55	10:00 a.m. - 4:00 p.m.	4:00 - 5:00		
Telephones Trouble Shooting Sec. B-5 4-Step	Fireman's Protractor Mapping L.O. Line of Sight Sec. D-9a 4-Step	Small Fire Suppression Conf. - Real Fire - Conf. Sec. E-2	Ranger District P.A. and Guards' Meeting		
Inst. #1 Kelly Jones Olson Coxen Rugg Kepplinger Johnson Ritter Blair	Inst. #6 Kelly Jones Olson Coxen Rugg Kepplinger	Entire camp except those taking Camp Boss job training.	Suggested that men from each ranger district meet with District P.A. to clear up problems, questions, etc.		
2-Man Fire Sec. E-1 4-Step					
Inst. #7 Assist #1 Brown Anderson Bowen Nehr Dean Bardwell Gunn Rogers					
Camp Boss Job Training Sec. C-4					
Inst. #3 Anstett Adams Thomas Beedon Langdon White					
Telephones Trouble Shooting Sec. B-5 4-Step	Field Markings Review Sec. D-1d				
Inst. #2 Lewis Paul Fulton Engles Strattford Lee Wilson Clum Richards Edwin	Inst. #5 Paul Fulton Blair Lewis Ritter Johnson Lee Wilson Clum Edwin Richards Engles Strattford				
Making Ready for 6-Hour Fire Problem					
Inst. #8 Paine Garrett Clark Arthur Rose Dort					

In setting up the time schedule in the sample Master Programs, the last five minutes of each hour is definitely allotted for changing from one class to another when necessary. Unless the trainees move promptly from one class to the next, some of the instructors will be short on their allotted time.

Topics such as Law Enforcement and Public Contact are programmed for evening sessions. This makes 2 to 4 additional daylight hours available for training in fire finding and suppression. Great care should be exercised, however, to avoid too long or frequent evening sessions. Failure to do this may result in mental fatigue on the part of the trainees and the instructors, and may actually retard the training program.

The last hour of the last day is scheduled for a meeting of the men from each ranger district with the District P. A. for the purpose of answering questions and clearing up problems that may have come up during the camp program. Experience has shown that men will ask questions of the P. A., the alternate, or the dispatcher which they would hesitate to ask the district rangers. The meeting also develops a friendly feeling between the P. A., alternate, or dispatchers and the men he will work with, and directs them to him as the one to whom they can go for help.

It is desirable to plan for a certain amount of play in connection with the guard training program; however, care must be exercised so that sports do not interfere with or overshadow the serious business of training.

When the guard training camp program, the master plan, and instructor and trainee schedules have been prepared, the training officer must work with the men who will act as instructors and assist them in the working up of their assignments. Lesson plans must be carefully worked out in advance. The planning of lessons is given in Part One, Section II.

In addition it is highly desirable to have instructors report to the training camp a full day in advance of the meeting date for rehearsal. This additional time required is more than justified by having each instructor or trainer go through his plans on the ground prior to the presentation. It increases his confidence, and enables others to suggest betterment of technics, and the actual practice itself is extremely valuable. Furthermore, the instructor can arrange his demonstration material and have all of his teaching materials in readiness. Often in presenting dramatizations, participants have not been able to prepare adequately and rehearsal before presentation aids in making them more effective.

In order to clarify and more clearly illustrate the mechanics of programming the guard training camp, the following sample is given, following the procedure as outlined on pages 133-134 of this section.

For instance, Guard Kelly is assigned to the Goat Peak Lookout position on the Chelan Forest. The first thing to be considered is that this is a lookout job. The job of a lookout has been analyzed. (Refer to Part II, Section I). Kelly is considered in the light of his past experience and present knowledge. His training needs

are then checked on the form "Appraisal of Individual Training Needs". (See sample on Page 138). The training needs listed on that form are then listed on the "Individual Training Plan". (See pages 118-118a). On the latter certain subjects are scheduled for the Guard Training Camp, and these subjects are indicated on the "Summary of Group Training Needs". (See sample page 134a of this section.) If it is found that the total time required for the subjects listed for the Guard Training Camp is in excess of the camp schedule, it will be necessary to eliminate some of these subjects and plan for telephone or in-place training. Such changes should be indicated on the "Individual Training Plan", and provisions made for accomplishment.

The "Master Program" is then made. (See pages 134 b,c,d.) All of the guards are routed through this program in such a way that they are instructed in all subjects listed in the Summary.

Instructors are then assigned to the various classes, and individual "Instructor Programs" are made from the "Master Program". (See page 140).

The last and final operation is to make the individual's "Guard's Training Camp Program", by referring to the "Master Program". (See page 141).

(SAMPLE)

APPRAISAL OF INDIVIDUAL TRAINING NEEDS

Division Detection — Kelly Employee

Job Operate fire finder — L.O. Position

Operations	Training Needs as Checked	Knowledge and Skill Required	Trainee's Present Knowledge and Skill
A. Level fire finder	x	A.(1) How to use spirit level	No
		(2) How to level fire finder by use of thumb nuts	No
B. Check orientation	x	B.(1) How to determine true North	No
		(2) How to check and adjust meridian on map so that it fits fire finder plate properly	No
		(3) How to adjust fire finder plate	No
C. Check adjustment of alidade	x	C.(1) How to plumb sights	No
		(2) How to adjust hair	No
		(3) How to adjust tape	No
D. Use of alidade	x	D.(1) How to turn alidade	No
		(2) How to sight correctly	No
		(3) How to use scale on tape	No
E. Use of vertical scale	x	E.(1) How to adjust sight	No
		(2) How to read scale	No
F. Use of Vernier	x	F.(1) Purpose of vernier	No
G. Reading azimuth	x	G.(1) How to read azimuth	No

(The above will be carried out for all of the jobs connected with the position Kelly is to fill.)

INSTRUCTOR'S PROGRAM

Instructor #3

Day 1st. Hours 9:00 - 9:55 Tool Assemblies and Weather Instruments Sec. B-3 & 4

	Grades		Grades
Kelly		Fulton	
Jones		Engles	
Lewis		Stratford	

Hours 10:00 - 11:55 Radio Sec. B-5

	Grades		Grades
Brown		Blair	
Anderson		Engles	
Johnson		Stratford	
Ritter			

(This will be carried for the full three days)

GUARD'S TRAINING CAMP PROGRAM

Name Kelly

Subject	Meeting Place	Hour	Day
Maps (inexperienced)	Location #5	8:00-8:55	1
Tool assemblies and weather instruments	" #3	9:00-9:55	1
Compass, elementary	" #5	10:00-11:55	1
Getting on L.O. line of sight	" #1	1:00-4:55	1
Law enforcement	General Assembly	8:00-9:00	1
Care of field station and camps	" "	9:00-10:00	1
Operation and care of fire finder	Location #4	8:00-11:55	2
Haze meter and psychrometer	" #2	1:00-1:55	2
False smoke, mirror flashing observing storms and recording strikes	" #4	2:00-2:55	2
Use of lookout forms and records	" #4	3:00-3:55	2
Panoramic pictures and care of lookout station	" #4	4:00-4:55	2
Public contacts	General Assembly	8:00-9:30	2
Communication, telephone	Location #2	8:00-8:55	3
Fireman protractor, mapper L.O. line of sight	" #6	9:00-9:55	3
Small fire suppression	" --	10:00 a.m. -4:00 p.m.	3
Meeting with district P.A.	" --	4:00-5:00	3

PART III

REPRESENTATIVE TRAINING JOBS ARRANGED IN SECTIONS - MAIN TRAINING TOPICS

Section A. Fire Prevention

1. Law Enforcement

   State and Federal fire laws and regulations

   Local closures and restrictions

   Designated Forest camps

   Authority in law enforcement

   Recognition of industrial hazards

   Serving Forms L.E. 1 and 2

   How to assist in removing hazards

   Collection of evidence and handling cases
   (Six points involved)
   a. Camp fire case

   b. Closure violation case

   c. No Smoking, or Axe-Shovel-Bucket case

   d. Permit required violation case

2. Public Contacts

   Personal appearance

   Appearance of quarters

   Issuing permits

   Giving information to public

   Use of give-away material

   Use of auto tags

   Building a campfire

Extinguishing a campfire

Educating public in fire prevention

Inspecting a tourist camp

Contacting camper groups

Cooperation with public

3. Care of Field Stations and Camps

Section B. Tools, Equipment and Quarters

1. Care and use of small tools

   a. Hazel hoe

   b. Axe

   c. Shovel

   d. Pump can

   e. Pulaski tool

2. Use of falling tools

3. Tool assemblies

   a. Fireman's outfit, assemble and check

   b. Tool caches, assemble and check

   c. Use of tool cache list

4. Special equipment

   a. Torches

   b. Gas and electric lights

   c. Psychrometer

   d. Rain gauge, anemometer

   e. Haze meter

5. Communication

   a. Use of telephone line tools

b. Battery hook-up

c. Telephone hook-up

d. Grounds

e. Telephone protection

f. Telephone troubles

g. Emergency splice, #9 wire

h. Use of emergency wire

i. Radio set-up

j. Radio operation

6. Quarters

a. Care of quarters sign

b. Fire protection

c. Rodent protection

d. Closing for season

e. Equipment readiness - outfit, car, horse, report forms

f. Station maintenance

g. Station sanitation

7. Packing

a. Horse packing

b. Back packing

Section C. Detection

1. Operation and Care of the Firefinder

a. (Setting up firefinder
(
(
(Placing map on instrument

b. Leveling instrument

(Sighting
(
c. (Reading azimuths
(
(Reading vertical angles

d. Orienting instrument

e. Learning country with firefinder

f. Estimating location and distance

g. Measuring width of fires.

h. Care of instrument
Minor repairs

2. Check lock system

3. Forms and records

a. Use of lookout report - reporting fires

b. Lookout Manual

c. Lightning storm report

4. Observing storms

Reading and recording strikes

5. False smoke record

6. Weather Instruments, Observations, and Records

a. Rain gauge and stick

b. Psychrometer and tables

c. Hazard Sticks

d. Anemometer

e. Haze meter

f. Wind direction

g. Condition of sky

h. Recording observations

7. Mirror flashing

8. Powder signaling

9. Care of lookout station

10. Training other lookouts

Section D. Fire Chasing

1. Maps and Surveys

   a. Map reading, inexperienced men

   b. Map reading, experienced men

   c. Use of maps, orientation by landmarks, locating position

   d. Field markings

   e. Use of panoramic pictures

   f. Topographic maps

   g. Knowledge of country, geography hazard, transportation routes

2. Pacing

3. Compass and Use (Elementary)

   a. Parts of the compass and care

   b. Magnetic declination

   c. How to hold and read

   d. Turning 90° angles

   e. Running compass course and pacing

   f. Compass Review

4. Getting on Lookout's line of sight to find fire

   a. Correlation of map and ground location problem

   b. Getting on Lookout's line of sight problem

5. Locating fire from known point on road or trail

6. Locating fire by 2-point intersection

7. Gridiron method

8. Explanation and use of Tangent offset

9. Use of Fireman's protractor

   a. Mapping Lookout's line of Sight with fireman's protractor

   b. Locating position with Fireman Protractor

10. Finding fire by panoramic pictures.

Section E. Fire Suppression, Small Fires

1. A. 2-Man fire

   B. Fire Suppression - Small Fires

      1. Initial action

         If man-caused, clues

         Sizing up burning material

         Weather

         Topography

         Draft and wind direction

         Volume of work

         Tools, number of men, where to get men

         Point of attack

      2. Line construction

         Location of line

         Type of line

         Control methods

         Spot fires

         Line clean-up

3. Mop-up

Snag falling

Reduction of volume of fire by water, dirt, moving material

Removing line hazards by burning out hot spots and moss and reproduction clean up

Determining when fire is out.

Section F. Forms, general

1. Log and diary
2. Campfire permit
3. Receiving lookout report, recording information on map
4. Telephone diagram or map
5. Organization maps
6. Firemen's report
7. Contracts of hire, authority to hire
8. Job lists

Section G. Advanced Training

1. Teacher training
2. Dispatchers, Protective Assistants
   a. Lookout summaries
   b. Platting
   c. Panoramic photos in dispatching
   d. Use of base plans

      Use of detection plan

      Hazard map

Status record

Organization map and chart

e. Executing fire plan

Fire responsibility

Calculation of probabilities

Emergency fire plan

Dispatching suppression force

Hire and routing trucks and pack stock

Calling in follow-up crew

Checking fire progress

Dispatching follow-up crew

Handling supplies and equipment orders

Keeping fire records currently

f. Contacting short-term force

Routing schedules

Use of guard job lists

Lookout orientation

Follow-up training

g. Assembling and checking caches

Testing station fire equipment

h. Office contacts with public

Giving information

Issuing permits

Handling law enforcement cases

i. Switching, communication system

j. News notes

k. Miscellaneous forms and records

Offic log

Form 929

10-day fire report

Weather records and observations, sending to field

Industrial and false smoke record

Use of Forms L.E. 1 and 2

Fire equipment lists

Purchase order and requisitions

Compensation forms

Property transfer

Special Forest forms

l. Systematic work methods

Work devices; notes, promise cards, job-lists, office neatness

Daily work planning; job grouping, job concentration, job completion routing mail, supplies, equipment to field

Correspondence procedure

Accounting procedure

3. Timekeeper

a. Time slips, time books, regulations and pay schedules

How to get time from line

Labor, stock, and equipment contracts

Commissary

Compensation forms and cases

Use of 877

Use of timekeeper kit

b. Ordering supplies and equipment

Assembling and returning surplus equipment

Estimating fire costs

Reporting fire progress

Maintaining satisfactory sanitation and health

4. Camp Boss

a. Responsibility to chief

Organizing and supervising camp force

Camp arrangement

Ordering and distributing men

Establishing and maintaining communication

Establishing and maintaining transportation

b. Instructing and checking timekeepers

Assembling and recording fire accounts

Commissary accounting

Compensation

c. Ordering and distributing supplies

Checking and estimating needs for supplies

Ordering and distributing tools and equipment

Checking and estimating tools and equipment needs

Reconditioning

Returning surplus

5. Strawboss

a. Responsibility to foreman

Correlation of men and tools with work

Proper order of line work

Lining men out on work

Instructing men

Line timekeeping

Keeping sufficient water for men, lunches

Recognizing and guarding against danger

Caring for injured men

Adjusting work with fire behavior

Handling emergency situations

b. Methods of line construction

Keeping fire out of snags

Handling spot fires

Holding line with patrol

Line clean-up

Snag falling

Backfiring

Mop-up

Care of tools on line

Return of surplus tools

6. Foreman-Crew Boss

a. Responsibility to fire chief

Relation to camp boss

Recognizing physical factors

Judging fire behavior

Estimating work and planning attack

Recognizing water or plow chances

Correlating work and men needed

b. Organizing and equipping strawboss or foreman crews

Instructing strawbosses or foremen

Locating line

Spot fire detection

Handling spot fires

Recognizing critical points and shifting crews

Line construction methods

Handling emergency situations

Tying work together

Night conferences with strawbosses or foremen

Checking patrol and holding of line

Checking on line clean-up

Checking on mop-up

Safety precautions

Return of surplus tools

Section G. Advanced Training (Cont'd)

7. Fire Chief

a. Fundamentals of organization

Assembly of fire facts

Use of scouts

Correlation of fuel, weather and topography with fire behavior

Recognizing critical points

Selection of points of attack

General plan of attack

Volume of work

Division into camp units

Men and equipment needed

Selecting and organizing fire line

and behind-line organization

b. General planning of work

Supervision and inspection of subordinates

Correlation of work on entire fire

Recognizing, planning for, and meeting

emergency conditions

Daily conference with subordinates

Assembling, recording and mapping fire progress

Deflation of fire force and equipment

8. Scout

a. Travel over fire

Use of high points for observing

Observation and recognition of physical factors

Noting water and camp sites

Noting natural barriers

b. Sketching and recording observations

c. Judging fire action

Probable points of attack

Probable plan of attack

Estimating volume of work

9. Pumper Operator

a. Natural and artificial intake basins

Mechanics and care of pumper

Pumper troubles and repair

Set-up and operation

Tandem hook-ups

Condition, check, and assembly of outfit

10. Hose Crew

a. Crew organization

Gravity system intake basins

Gravity hose filling

Stringing hose

Location of hose line

Use of siamese and reducers

Cooling down fire with nozzle

Working line with nozzle

Mopping up with nozzle

Segregating broken hose

Rolling or coiling hose

Cleaning and drying hose

Assembling hose units

11. Plow Crew

a. Crew duties

Packing equipment on horse

Handling the plow

Recording accomplishment

12. Killefer Crew

a. Crew duties

Loading Killefer unit

Care and use of Cat

Use of Killefer

Recording accomplishment

13. Mop-up on Project Fires (Conference)

14. Recognizing hazardous burning conditions

15. Cooperative Crews

a. Duties and responsibilities

Lining up men

Qualifications of men

Contracts of hire, wage schedules, conditions of work

Hiring transportation, rate schedules

Purchase of supplies and equipment

Knowledge of country, transportation routes, hazard

Section H. General

1. Opening talk

2. Closing talk

3. First Aid

4. Fire plan conference

5. Handbook conference

   a. Hours of work on improvement and fire suppression

   b. Job list

   c. Report time - daily routine

   d. Elapsed time standards

   e. Night travel

   f. Firefighting objectives and policies

6. Law enforcement skits

7. Public contact skits

8. Eyesight tests, color and target

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