

ADAPTING ADVANCED PRINCIPLES OF ORGANIZATION AND FIRE-LINE CONSTRUCTION TO CCC SUPPRESSION CREWS

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Greater use of 40-man CCC crews in some regions was foreshadowed in the April 1940 issue of Fire Control Notes (The 40-Man Crew- A Report on Activities of the Experimental 40- Man Fire Suppression Crew) by the statement: "It is believed that this system can be applied to other crews organized from picked CCC enrollees..." The Siskiyou organized a number of these crews and here reports on the success of one of them. Region 6 now advised that every CCC Camp is required to have a special 40-Man crew, and that steps are being taken to equip these crews progressively.

In 1940, special suppression crews, patterned after the original 40-Man crew organized in 1939 on the Siskiyou National Forest and located at the Redwood Ranger Station, were set-up in CCC camps and forest-guard organizations on most of the national forests in the North Pacific region. A 40-Man CCC crew was organized at the Iron Mountain spike camp, China Flat CCC camp, on the Siskiyou, in the spring of 1940. About midseason, David P. Goodwin, Assistant Chief, Division of Fire Control, in the Washington office, observed this crew on a practice demonstration and was so impressed by its action and apparent high level of morale, that he requested a report on the organization of the crew, methods of training, and accomplishments on fires. The story of experiences and accomplishments which follows might be duplicated by any one of several forests in region 6 where similar CCC crews were trained.

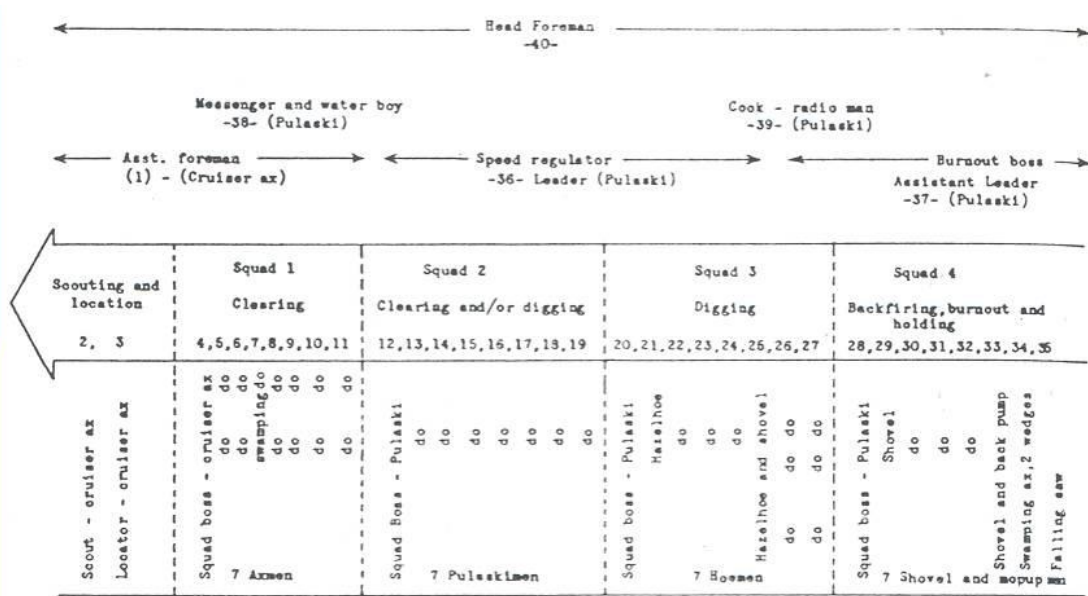
Organization of Crew

1. Selection of men.- In making up the China Flat CCC 40-man crew, an effort was made to select enrollees who were best fitted physically and emotionally for fire-fighting duties. The best men were taken from work crews on every work project. In some cases this caused a temporary handicap to current projects, but it resulted in development of a suppression crew made up of better-than-average enrollees. The majority of the men were accustomed to hard work at relatively low wage rates.

Two of the best qualified CCC foremen in the camp, Walter Barklow and Ralph Reeves, were chosen to take charge of the crew-Barklow as head foreman and Reeves as assistant foreman. These men are in charge of the road construction project on which the crew was engaged while not training or fighting fire. In this way the men on the fire crew worked under the same foreman at all times, resulting in a unity of thought and action essential for good teamwork and the up-building of morale.

2. Selection of site.- The Iron Mountain spike camp, where a road-construction project was in progress, was chosen as the most favorable site for the development of the crew. It provided work necessary for the training and conditioning of the men. It was located in a place where it could provide quick service for two ranger districts; and, not

the least important, it kept the crew in a unit during off-duty time. No outside influence interfered with the concentration of interest of every man on fire duty.



Organization chart for the CCC special 40-man suppression crew.

The men were housed in tents which were framed and floored. Mess was provided in a portable frame building. The camp met all Army regulations as to water supply, sanitation, and camp facilities.

Training

Training began soon after the spring enrollment and was carried on 1 day per week during the first half of the summer. After the crew had gained experience on going fires, one-half day per week was considered ample. Intensive training was in progress at the time of the July enrollment and the few recruits that were added to the crew were absorbed into the organization and given individual attention as needed. Training processes were segregated into five divisions: Use of tools; get-away action; fire-line construction; special job training; and off-the-job training.

Use of tools.- Fundamental training in the use of hand tools was necessary because many of the enrollees included in the crew were green recruits. The first step in training was to teach every man the correct use of an ax. Only a relatively few enrollees were judged proficient in ax work following the first tryout. Detailed instructions in handling an ax were given to each unskilled enrollee under the close supervision of the foreman. As the men became qualified in ax work they were excused from further training with this tool.

The individual detailed training was done on road right-of-way logs arranged in safe positions for the unskilled axmen. This step involved training for a minimum of 1 day to a total of 5 days before all enrollees were qualified to use the ax. After the

necessary skill was acquired in the fundamentals of ax work, practice was continued throughout the summer on the road right-of-way clearing project.

A similar system was used in teaching the use of digging tools. It was found that less time was required to gain proficiency in these less exacting tools.

Get-away action and travel to fire.- This share of training was considered vitally important because it eliminated much waste of time which would have occurred had the men not known exactly what they should do in getting away to a fire with full equipment. To facilitate assembling of men for roll call, loading into trucks, unloading and receiving packs at the point where foot travel began, the men were numbered from 1 to 40, according to position in the crew. Each man's pack was tagged with his number so that each individual would receive his designated tool. Packs and tools were stored in a separate building at the spike camp and a truck assigned for transporting them.

A separate crew, consisting of the regular spike crew cookhouse staff, who were not members of the 40-man crew, were trained to load this equipment while the suppression-crew members were getting their work clothes and loading into two passenger trucks which were assigned to the crew.

Considerable time was spent practicing get-away on fire calls and by constant practice, get-away time was reduced to 7 minutes when enrollees were at camp at the time of the fire call. Training also included unloading from the trucks at the point where foot travel began and assembling in hiking order with packs and tools. Unloading required 2 minutes and the receiving of tools about 5 minutes. The crew was then hiked over trails and cross country to gain practice and get the "feel of the pack."

Fire-line construction.- The next training step was actual fire-line construction. This training included a demonstration of what a model fire line should be, followed by practice in the construction of such fire line. The crew worked as a unit using the one-lick method of fire-line construction exclusively under all fuel types found on the Siskiyou National Forest. The important element in the one-lick method was the spacing of the men, coupled with the regulation of the speed of construction. This was taught by actual practice of line construction in the various types likely to be encountered on a going fire. Training was carried on 1 day a week until the crew had reached the necessary degree of proficiency, and one-half day per week thereafter even after the crew had gained experience on going fires. Practically all of the line constructed during training was located around slash areas where the work was needed for hazard reduction and fire protection.

Training for special jobs.- Outstanding men were given special training on fire-line scouting, line location, speed regulation, burning out, and cooking. Most of these important jobs were necessarily taught during line-construction practice, although additional training was given off the job. Cooking dehydrated rations required some experimenting which was done in camp at the cook house by the men selected for the cooking detail.

Off-the-job training.- The foregoing training was done entirely during regular CCC work hours. In addition, however, the foremen gave off-the-job training in safety, fire behavior, and similar subjects.

Recreation and Morale

Recreational facilities available were utilized as fully as possible to build morale. Each man proudly wore a red felt shield-shaped barge, stenciled "CCC, 40." Considerable competition developed among other members for the "CCC, 40" positions. When the boys went to town on recreation trips, all fire fighting equipment and clothes accompanied the crew.

Equipment and Supplies

Each member of the crew carried a pack of tools and equipment, weighing about 36 pounds, similar to the ones used by the by the 1939 Siskiyou 40-man crew. Extra tools and supplies were carried in to supply truck. Lightweight goose-down sleeping bags and ample, condensed, high-quality rations are two essential items of equipment. The ration list was adapted from the list used by the 40-man crew in 1939, and weighed $11 \frac{7}{8}$ pounds for 1 man 3 days.

Most of the food items were packed in individual sizes, but it was found most practicable not to break some of the items down into individual packages. The quantities were so distributed that each pack weighed about the same. Linen tags were attached to each pack listing the items it contained so that the cook could easily determine which pack to open so secure rations for any one meal. A few sad experiences with spilled food demonstrated that it was important that the rations be packed in cloth sacks as paper bags would not endure the wear and tear of cross-country travel.

The question of whether or not to carry prepared lunches was carefully considered in the operation of the crew. It was decided that prepared lunches would be packed of securing them did not delay get-away action and travel to fire. If the time did not allow for preparation of lunch, the first meal on the fire line was made from items requiring no cooking. Plans were made to obtain lunches if possible en route to the fire by ordering them by phone at some point along the route. This method was used in travel to one fire in 1940.

Fire packs and rations were always stored in complete readiness in the spike camp where they were hung in sequence of numbers in double rows on the walls of a special fire-equipment shed. In case of fire these packs were loaded into a truck in reverse order from which they were issued at the end of truck travel. They were placed flat in the truck bed in tiers three deep. In order to eliminate lost motion and misplacement of packs, the equipment truck driver placed all packs in the truck when loading and removed them when unloading at the point where foot travel began.

Transportation

Two truck drivers not members of the crew, ate and slept on each of the three $1 \frac{1}{2}$ -ton trucks used.

Action on Fires

The CCC 40-man crew took complete action or assisted on seven fires during the fire season. The name, size, and dominant fuel type of each of these fires are listed in the following table:

List of fires fought by the CCC suppression crew

Name	Date	Area in Acres	Held line in chains	Fuel Type
Lone Tree Creek fire	July 06, 1940	7.0	40	MM
Scott Creek fire	July 06, 1940	7.0	51	HM
Green Knob fire	August 07, 1940	32.0	80	MH
Two Mile fire	August 10, 1940	.2	7	MM
Bingham Mountain fire	August 11, 1940	30.0	85	MM
Scott Creek fire #2	August 21, 1940	23.0	126	HM
Water Pipe Creek fire	September 01, 1940	15.5	58	MH

No time studies were made on speed of line construction for this crew while on fires, but it is well known that their accomplishments were much greater than those of an average CCC crew of 40 men, and better than the average crew composed of pick-up laborers.

Six of the seven fires upon which action was taken during the season were of incendiary origin. Five of them were located on the Agness Ranger District within a 3-mile radius and were presumably set by the same person or persons. These incendiary fires were set at times when burning conditions were most critical, and the prompt control by the CCC 40-man crew with the assistance of forest guards and other CCC enrollees is considered a fine accomplishment.

The following comments on one fire based on firemen's and dispatchers notes are indicative of the rapid getaway, fast travel, and hard striking power of this fire-fighting team.

The Bingham Mountain Fire. - The CCC 40-man crew was called at 5:30 p.m., and instructed to proceed to the Bingham Mountain fire. The men were in camp at this time and no time was lost in assembling the crew. Truck travel distance to the fire totaled 31 miles. The crew arrived at the fire at 7:50 p.m., and immediately went to work. Three squads of men were already working on the fire. The 40-man crew took over the line construction work and the other squads were assigned to line holding and burning out. At 11 p.m. the crew had built 5,610 feet of fire line to control the fire trail there were a number of burning snags and these were felled as the fire line progressed. The crew did an exceptionally fine job on this 30-acre fire.

Summary and Conclusions

In organizing this crew, 40 better-than-average men were selected from all current projects. Because of loss of experienced men during reenrollment periods, many green men were also selected and much fundamental training was given in the use of hand tools.

It was found desirable that all men in the crew attain a certain degree of skill in ax work. After training the entire crew, the most adept axmen were chosen for ax work on the established crew. Learning to use the hoe and shovel is a relatively simple accomplishment after the enrollees attained a degree of skill with the ax.

As a suggestion for future crews of this type, it is believed advisable to provide a snag-falling or road-clearing project on which to train fellers and axmen beginning about 6 months before the opening of fire season. Experience has shown that at least that much time is necessary to develop green enrollees into experienced timber fellers.

Two CCC foremen are necessary for a crew of 40-men. These foremen must possess real leadership ability and should be well qualified in fire fighting, training, and morale building. Pride in accomplishment must be tactfully instilled into each member of the crew by the foreman. He must be able to mix with the crew in a judicious way and at all times keep the respect of the men.

CCC crews have these outstanding differences from civilian crews of the same type:

1. Qualifications required of candidates for the civilian crews call for experience in use of hand tools. A large percent of CCC candidates are inexperienced and must be given fundamental training in the use of tools.
2. CCC crews will respond more readily to systematic training since they are more amenable to discipline and will adapt themselves without question to the positions assigned in this form of fire-fighting team.

A high degree of morale is the most essential attribute of this type of organization. To cultivate this rather intangible spirit so necessary in a first-rate crew, much attention was given to recreation, good food, and work shifts on the fire line not excessively long with short rest periods as judged necessary by the foreman in charge.

The psychological effect of fast progress in line construction resulting in a quick decisive suppression of each fire attacked gave rise to ever-increasing confidence of each member in the strength of the unit. A series of failures would no doubt produce the reverse effect. It is especially important with an inexperienced crew that the first attempt be successful. Not the least important, from the enrollees' viewpoint, was the distinctive 40-man badge differentiating these men from other CCC men which fostered a healthy pride in the organization.

The special CCC 40-man fire-suppression crew demonstrated that CCC enrollees organized and trained in accordance with advanced principles of organization and fire-line construction were superior to the average CCC fire-fighting crew which does not have the advantage of special training and lightweight equipment; and better than the majority of civilian fire crews composed of pick-up laborers.

