

# PACIFIC SOUTHWEST Forest and Range Experiment Station

FOREST SERVICE  
U. S. DEPARTMENT OF AGRICULTURE  
P.O. BOX 245, BERKELEY, CALIFORNIA 94701

## FIRE PREVENTION

*in the California Division of Forestry. . .*

### PERSONNEL AND PRACTICES

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Sarapata, Adam, and William S. Folkman.

1970. **Fire prevention in the California Division of Forestry. . .personnel and practices.** Berkeley, Calif., Pacific SW. Forest & Range Exp. Sta., 10 p., illus. (USDA Forest Serv. Res. Paper PSW-65)

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### — The Authors —

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### ACKNOWLEDGMENTS

We relied heavily on California Division of Forestry personnel in defining many of the substantive issues of the questionnaire used in this study. Howard E. Moore, Robert Burns, and James D. Taylor were particularly helpful in this regard.

We thank all those who took part in completing the questionnaires.

We are equally grateful to the staff members of the Survey Research Center, University of California, Berkeley, for their counsel and help. Ronald Roizen was actively involved in all stages of the study. Upon him fell most of the burden of processing the data.

People who work in fire prevention usually think of their jobs as including three kinds of activities: education, law enforcement, and engineering. Education and law enforcement are considered methods of reducing the number of man-caused fires by changing people's behavior. Primarily through hazard reduction, engineering attempts to reduce the probability of ignition by modifying the environment. In education and law enforcement, there is an interaction between the fire-prevention agency and the public.

Like many other state forestry agencies, the California Division has a fire prevention program with full-time fire prevention officers on its staff. In considering the effectiveness of such a prevention program, it is necessary to know something about the organization conducting the program, as well as know

something concerning the people to whom the program is directed. How the Division is organized and staffed is important. And we need to know something about the attitudes, values, and expectations of the employees, including those available for fire prevention work—their experience, training, and motivation. We need to know how workers at each level define the fire prevention problem and how they perceive its importance and the effectiveness of the methods and techniques used.

In 1967, the California Division of Forestry authorized a study to identify those elements of fire prevention and personnel management practices that may bear on the effectiveness of its fire prevention program. This paper reports the results of that study and suggests some conclusions that can be drawn from it.

## SURVEY METHOD

The study was done under a contract between the Division of Forestry and the University of California, Berkeley. It was conceived and developed as an integral part of the on-going cooperative fire prevention program of the Pacific Southwest Forest and Range Experiment Station and the Division of Forestry.

At the time of the study the Division employed about 2,100 persons in the forestry and fire areas on a permanent, full-time basis. Its field organization consisted of six Districts. A sample was drawn to provide proportionate representation of all permanent, full-time employees whose jobs included some contact with the public. The sampling procedure assured geographic distribution as well as proportionate representation by job titles.<sup>1</sup>

Individual job titles as they were at the time of study were grouped into these categories:

- *Administrators:* Deputy State Foresters; Assistant Deputy State Foresters; State Forest Rangers III,

II, and I; and Associate State Forest Rangers.

- *Conservation Camp Superintendents:* Conservation Camp Superintendents.
- *Assistant State Forest Rangers:* Assistant State Forest Rangers.
- *Fire Control Personnel:* Forestry Foremen I; and Forest Fire Truck Drivers.
- *Foresters:* Foresters III, II, and I; Junior Foresters; Graduate Forestry Trainees; and Forestry Aids.
- *Fire Prevention Officers:* Fire Prevention Officers V, IV, III, II, and I.
- *Forestry Foremen II:* Forestry Foremen II.

Job categories were sampled at a variable rate, from 25 percent to 100 percent, depending on the size of the population in each job category.

A questionnaire was mailed to 848 Division employees. An excellent response rate of slightly less than 80 percent usable questionnaires was obtained.

The responses of each respondent were weighted to compensate for the variable sampling fraction and variable response rate of each job category, thus providing a representation of the entire employee population of the Division. In one job category—selected clerical employees—too few questionnaires were received to include the group in the analysis.

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<sup>1</sup> Since publication of this report, the number of Districts in the California Division of Forestry has been reduced to five, and some job titles have been changed: Forestry Foreman I to Fire Captain, Forestry Foreman II to Fire Crew Foreman, and Forest Fire Truck Driver to Fire Apparatus Engineer.

## PERCEIVED IMPORTANCE OF FIRE PREVENTION

The California Division of Forestry carries out its responsibilities for protection of forests, wildlands, and rural areas of the State through a variety of activities. To determine the perceived importance of fire prevention work in relation to other activities, we asked the respondents to estimate the importance of each activity from the standpoint of their impression of Division and District priorities. The results show that the respondents do not feel that Division and District leadership consider fire prevention to be a first-order responsibility. Fire suppression and, to a somewhat lesser extent, fire detection were interpreted as being of prime importance, but fire prevention activities were seen to fall in the middle range along with most of the other Division activities. Furthermore, the two prevention activities involving contact with the public—education and law enforcement—were seen as somewhat less important to the leadership than hazard reduction. If we assume that the fire prevention responsibility of the Division is close to fire suppression in importance, then these findings are not particularly gratifying. They suggest that Division employees perceive an ambivalent leadership *vis a vis* prevention.

The respondents were found to have a general belief in the effectiveness of current prevention methods, but the ratings of specific methods varied by job-categories and by Districts. The effectiveness of law enforcement was much more highly regarded by line personnel than it was by administrators. Fifty-six percent of fire control personnel rated it "very" effective, in contrast to 37 percent of the administrators. Educational contacts with the public were more highly esteemed by the administrators. In addition, although education of the public on a person-to-person basis was viewed as important (57 percent rating it "very" effective), there was some question regarding the ability of Division personnel to perform effectively in this capacity. Only 11 percent rated "most CDF personnel" "very" effective in communicating fire prevention information in this way; 30 percent were rated "slightly" or "not at all" effective.

Respondents in Districts 3 (in central California), 5 and 6 (in southern California) were especially likely to feel that messages telling the public about actual fire law convictions were "very" effective.

## ATTITUDE TOWARD FIRE PREVENTION

Equally important as the status of fire prevention as employees perceive it to exist among administrators in the Division are the employees' own attitudes toward fire prevention. From the responses reported, it is apparent that Division employees have highly favorable attitudes about the appropriateness and desirability of prevention work for the organization and for themselves. *Almost two-thirds of the employee population would place fire prevention on the same level of importance as suppression—i.e., a much higher priority than they think their leaders give it.*

A large majority of employees indicated a desire for more prevention education and training than they now have.

More than three-fourths of the employees recommended more money being made available for preventive work. Fire prevention officers, of course, were most concerned about increasing funding, but administrators were next most in favor of increases for this purpose.

Education of the public on a person-to-person level was widely recognized as an effective method of fire prevention, 57 percent rating it "very" effective.

Fire prevention education through the schools, law enforcement, and law enforcement publicity were also considered effective methods, from two-fifths to a half of the respondents rating them "very" effective.

The more diffuse methods of the mass media were considered much less effective: 6 percent "very" effective for radio to 28 percent for motion pictures. In response to a direct question regarding where the public gets most of its information, however, television received 30 percent of the mentions, personal contacts 18 percent, and news media 17 percent. Law enforcement (meaning, presumably, the example provided by enforcement action) was at the bottom of the list, with less than 1 percent mentioning it.

The effectiveness of various prevention methods is seen to be highly variable and quite at variance with their perceived use. Yet, most of the respondents recommended more use of most methods, in some cases without a particularly strong belief in the effectiveness of the recommended method. It would appear that the prevention goal is strong enough to

over-ride doubts about effectiveness in such cases.

The most common mistakes attributed to Division personnel in relation to fire prevention included not

enough reliance on personal contact, tactlessness, timid enforcement, and inability of personnel to communicate.

## LAW ENFORCEMENT: BEHAVIOR AND ATTITUDE

A person's attitude toward law enforcement is the product of many variables. A complete inquiry into the determinants of a strong enforcement orientation among certain Division personnel might require consideration of basic personality structure, the nature of childhood environment, factors leading to selection of forestry as an occupation, and educating or socializing mechanisms experienced within the Division. Such an inquiry was beyond the scope of this study. The analysis presented, consequently, must be quite circumscribed.

The proportion of the employees who are in a position to take or recommend enforcement action is largely a function of job category. Fire Prevention Officers are most active and Forestry Foreman II, Conservation Camp Supervisors, and Foresters are least active. More than nine out of 10 Fire Prevention Officers report taking or recommending enforcement action during an average summer month, compared to less than half of the least active personnel. The average for all employees was about two-thirds taking action.

The situation, apparently, would be much different if the opportunity to take or recommend enforcement action were available. Each respondent was asked if he would take action if he observed "a minor violation of a fire law." Conservation Camp Superintendents were most likely to answer affirmatively, closely followed by Fire Prevention Officers and Forestry Foremen II. Foresters had the lowest percentage responding "yes."

Willingness to take enforcement action, otherwise, is related to the respondent's perception of the

willingness of others to do the same and his past participation in enforcement.

Administrators, Camp Superintendents, and Fire Prevention Officers were most likely to feel that fire law penalties were "just and reasonable." Foremen II and Fire Control personnel felt the penalties were too lenient. And they were most likely to favor more severe regulation of the public in the use of forest areas. Such restrictions would include more frequent closure of high-risk areas to public access, prohibition of smoking in similar areas, and more agency control over the management of private lands. Few respondents would recommend special fire danger awareness examinations for all people entering a forest area, but Fire Control personnel and Forestry Foremen II, in particular, would favor such examinations for hunters and campers.

To facilitate our examination of the determinants of commitment to law enforcement, we developed an index from responses to certain questions. Fire Control Personnel received the highest index scores, indicating high commitment to law enforcement. Fire Prevention Officers and Forestry Foremen II had the next highest scores. The greatest number of scores in all other job-categories were in the "low" range of the scale.

Age, length of service, size of home town, and length of residence in the State did not bear on commitment to law enforcement, when job-category was held constant. Education, however, was found to have a negative effect. That is, only half as many college graduates scored high on the law enforcement index as did those who had less than a complete high school education.

## FIRE PREVENTION EDUCATION

Division employees generally agreed on some of the characteristics of types of people they thought to be high risk forest users, but did not agree on other characteristics. Eighty percent of the respondents indicated that a man was a greater risk than a woman, 74 percent that an urban user was a greater risk than a rural user, and 65 percent that a non-local resident was a greater risk than a local resident. About

three-fifths considered travelers more of a risk than campers, adults than children, and less educated than more educated. Opinion was more evenly divided regarding the relative risk of out-of-State residents as against California residents, farmer against logger, and white as against non-white. But in the last instance nearly three-fifths responded "Don't know."

Little definitive information is available about the

risk ratings of different forest user types. What there is<sup>2</sup> suggests that local, rural, farmer-rancher males represent the greatest risk in terms of total number of fires. This is, no doubt, a function of the amount of exposure to high fire risk situations rather than necessarily one of a higher rate per unit of exposure. The responses of Administrators and Fire Prevention Officers reflected more closely this assessment of fire risk than did the responses of the others.

In one section of the questionnaire the respondents were requested to indicate the various tasks appropriate to the position of: Forestry Foreman I, Fire Prevention Officer, Assistant Ranger, and Forester I. Three of the listed tasks implied fire prevention work: Inspector (fire hazard), Teacher (to the public), and Advertiser (of fire prevention). Nearly everyone expected Assistant Rangers and Fire Prevention Officers to act as inspectors, teachers, and advertisers. A considerable majority saw these tasks as applicable to all four positions.

An index of commitment to fire prevention education similar to the one for law enforcement, was prepared. Score differences among job-categories were more striking for the prevention index than for the enforcement index. As might be expected, Fire Prevention Officers were found to be singularly

committed to fire prevention. Almost two-thirds of those queried scored "high." Foresters, on the other hand, were the least committed group; only 10 percent scored high, and 40 percent scored "low." Fire Control Personnel, Forestry Foreman II, Assistant Rangers, and Administrators all evidenced about the same level of commitment to fire prevention, with slightly less than one-third scoring "high" in the fire prevention education index.

In the absence of further evidence we may conclude that Fire Prevention personnel approach their job with explicit foreknowledge of a fire prevention mission, but in other job-categories the prevention mission may be present but often in a residual position.

There has been some speculation that a commitment to law enforcement is antithetical to a commitment to prevention education. However, our analysis shows that there is a positive, though modest, relationship between the two. Although some Division personnel may place greater emphasis on enforcement while others place greater emphasis on education, in general a commitment to the one is found with a commitment to the other—perhaps reflecting a more general commitment to fire prevention as a whole.

## EMPLOYEE MOTIVATIONS AND SATISFACTIONS

In our society a person's occupation is generally expected to meet a number of needs beyond that of simply providing a livelihood. Students of the subject have identified these additional needs as: security needs, social needs, esteem needs, and needs for autonomy and self-actualization. These five needs are listed in their theoretical order of priority. A series of questions were posed to determine the amount that each of these needs is now being satisfied by the respondent's job—*need fulfillment*, and how much respondents felt should be—*aspiration*. To the extent that there is a gap between need fulfillment and aspiration, there is a deficiency of *need satisfaction*.

The level of performance of fire prevention functions, as well as other functions, within the organization is closely related to the degree with which these various job-related needs are satisfied.

### **Need Fulfillment**

Although our main concern was with the discrepancy between the employee's impression of *what is*

and his feeling of what *ought to be*, the level of need fulfillment felt to be connected with the job, itself, is a significant factor in job morale and performance.

*Security Needs*—The ratings concerning perceived fulfillment of security needs tended to be concentrated at the high end of the scale, indicating "satisfactory" to "maximum" need fulfillment. Comparison with other need areas suggests that Division personnel view their security needs as more adequately fulfilled than any of the other needs considered.

There were small variations among employees with different job titles. Administrators, Conservation Camp Superintendents, and Assistant Rangers had the greatest feeling of job security; Foresters and Forestry Foreman II, the least.

*Social Needs*—Generally, the fulfillment of the social need was rated less favorably than that of security. Some personnel recognized problems in developing close friendships within the organization and within the community. The most serious block to the fulfillment of social needs was in the area of rewarding family life. Half or more Forestry Foreman II and Fire Control personnel described their opportunity in this area in a very negative way. Greater

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<sup>2</sup> See specifically C. C. Chandler. *How good are statistics on fire causes?* J. Forestry 58(7): 515-517. 1960.



differences were found among job-categories on this question than on any other need-fulfillment item.

*Esteem Needs*—Employees generally desire recognition both from their co-workers and supervisors and from the public at large. The responses indicated, however, that these needs for esteem often go unfulfilled. Many employees—a fifth to a third of the Forestry Foreman II, Foresters, and Assistant Rangers—gave their jobs a low rating in creating a feeling of self-esteem.

Personnel apparently feel that they are accorded more prestige by outsiders than they are by their fellow workers within the Division. Status distinctions among job-titles is common within the organization, but the general public does not recognize these distinctions. Because no independent data on the prestige of the Division in the eyes of the public are available, we cannot assess the accuracy of Division employees' impression of the public's attitude.

*Autonomy Needs*—This dimension is related to the amount of responsibility connected with one's position and with the opportunity for independent thought and action. Autonomy would appear to be an area providing a considerable source of satisfaction to most employees. With the exception of Foresters, most employees queried felt the amount of responsibility associated with their job was high. And most of them felt that they had sufficient opportunities for independent thought and action.

*Self-Actualization*—Many employees, especially Forestry Foreman II and Foresters, felt restricted in their opportunities in their job to do the things they felt best suited for, and they lacked a feeling of worthwhile accomplishment in their jobs. Mean scores for all personnel fell between 3.0 and 4.0 on a five point scale, with Forestry Foremen II averaging 3.0 and Foresters 3.1.

### **Need Satisfaction**

Lack of need satisfaction refers to the gap between one's aspirations and one's conception of the existing situation. The items in the questionnaire on which fulfillment most closely approached (and sometimes exceeded) aspiration were:

"The opportunity to develop close friendships within the CDF."

"The responsibility connected with my position."

"The opportunity for independent thought and action in my job."

"The feeling of security in my job."

All employees, with the exception of some Forestry Foreman II, apparently are relatively well

satisfied with the amount of security offered in their jobs. Likewise, most employees do not desire more responsibility than that provided by their present positions. Finally, employees generally do not look for greater opportunities to develop close friendships within the organization. Although, many felt that the opportunities for such friendships were not great, since few aspired to greater opportunities, this now appears to be a less critical complaint. Improving opportunities for developing such friendships may still be important to the Division, however, if one expects full integration and friendship among employees to be necessary in fulfilling specific goals, such as those of a firefighting team.

The specific items on which the greatest discrepancy between aspiration and actualization exists were:

"The opportunity for a rewarding family life."

"The prestige of my job in the CDF."

"The prestige of my job outside the CDF."

"The opportunity for personal growth and development in my position."

Thus, dissatisfaction tended to be greatest in the areas of social needs, esteem, and self-realization.

Administrators, Conservation Camp Supervisors, and Fire Prevention Officers are the most satisfied with regard to most needs (*fig. 1*). The Forestry Foreman II, and Fire Control Personnel are the least satisfied. Assistant Rangers fall in an intermediate position. Foresters present a more complex picture, being among the more satisfied on security and social needs and among the least satisfied in esteem, autonomy, and self-actualization needs.

In answer to a free response question, employees listed the following (in descending order of frequency of mention) as factors which would increase their satisfaction: shorter hours, better pay, more time with family, more equitable overtime compensation, more recognition, better promotion program, and more supervisory respect.

Listed as being what respondents liked best about working in the Division included: the variety of the work, being out-of-doors, the challenge, the feeling that one is helping prevent fires and conserve natural resources, a general feeling of worthwhileness and satisfaction, and security.

Most of the items in the first list are what some researchers who have studied job satisfaction have called "hygiene" factors. They may lead to extreme dissatisfaction when not provided, but are more or less taken for granted by modern workers when provided. The second list is largely made up of what

have been identified as growth or *motivator* factors that are intrinsic to the job itself and lead to continuing job satisfaction.

### Job Satisfaction

Respondents were asked to consider their job satisfactions in six areas: (1) Fighting fire; (2) my work (other than fire fighting); (3) my supervisors; (4) my co-workers and subordinates (in general); (5) the public; and (6) station or conservation camp life (in general).

Respondents were asked to judge the six areas by selecting appropriate adjectives from a list provided. Some adjectives were associated with concrete, objec-

tive aspects of the situation, others got at more subjective feelings. A balance was maintained between positive and negative forms of the adjectives used.

*Opinion of Firefighting*—Generally, respondents within particular job titles held similar opinions about firefighting. Most employees, regardless of their primary job responsibilities, characterized firefighting as being "useful," "challenging," and "satisfying." The majority also applied the terms "hazardous," and "exhausting" to fire fighting. Only two-thirds used the term "appreciated." Those whose primary responsibility was firefighting shared these opinions. They also were more inclined to consider firefighting

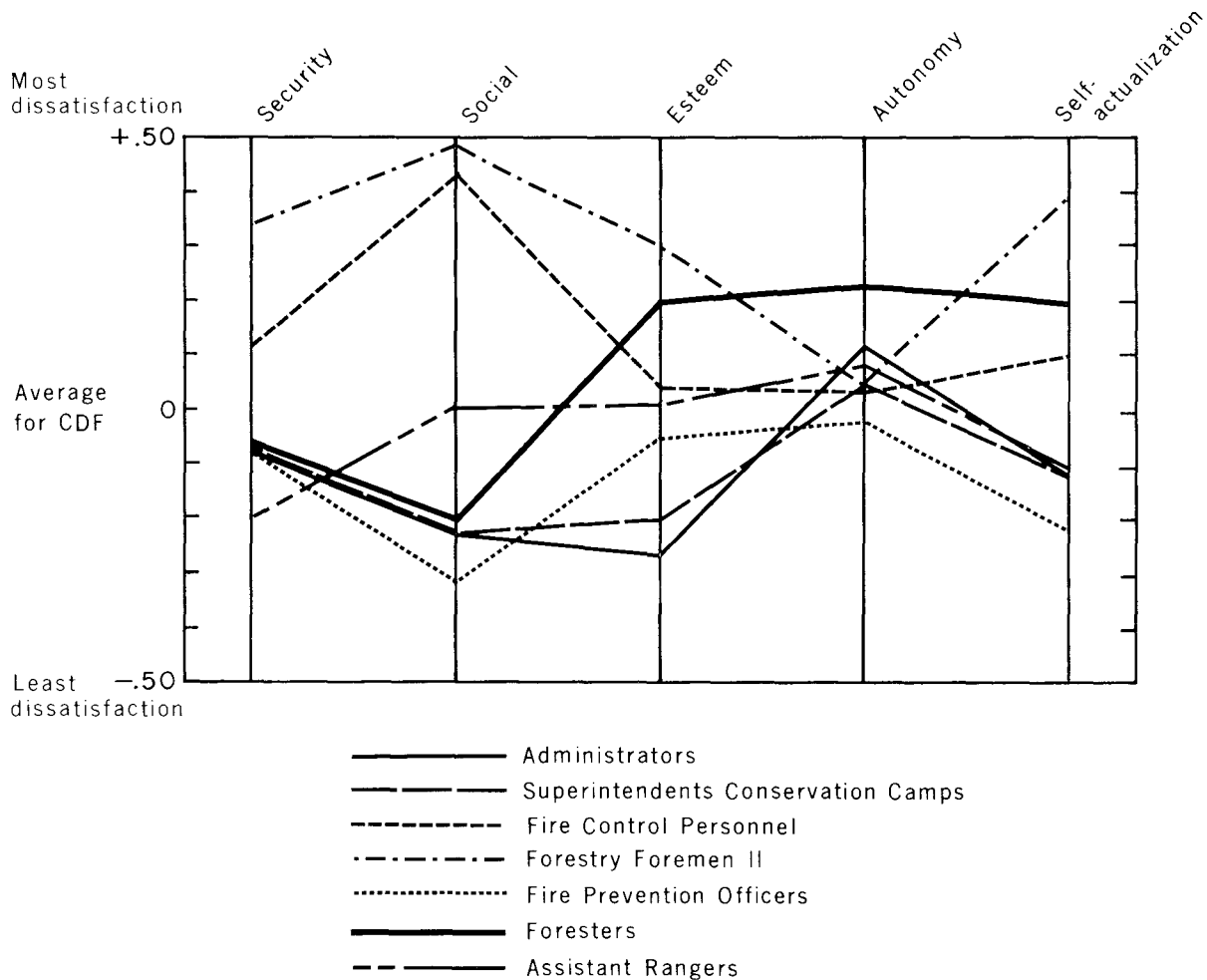


Figure 1—Seven categories of California Division of Forestry employees were asked to express how well their jobs met five basic needs. Positive values show that their dissatisfaction exceeded that of the average Division worker; negative values show that it was less. Great differences among job categories were in feelings about social fulfillment and esteem, and self-actualization.

"lonely," but less apt to consider it "(un)healthy" or "(un)pleasant," than were those who had other major job activities. Nearly two-thirds of the firefighters considered their *non firefighting work* "routine."

Non-firefighting jobs were also typically described as "useful," "challenging," and "satisfying." They were, however, more commonly described as "routine" than was firefighting. Among Conservation Camp Superintendents, Forestry Foreman II, and Assistant Rangers, 40 to 60 percent of them applied the adjective "routine" to their work. Forestry Foreman II were less likely than other job-categories to see their work as "satisfying" and "pleasant" and more likely to report it as "boring," "exhausting" and "hazardous." Foresters were most apt to consider both their regular work and firefighting to be "frustrating."

In response to a direct question on what was considered the worst job in the Division, the most frequently mentioned position was that of Fire Fighter. The principal reasons given were: less pay, long hours, dangerous work without recognition, temporary position, and too little authority. Other Fire Control jobs—Forestry Foreman and Fire Truck Drivers—were also often mentioned as "worst" jobs. "Poor personnel" was the most often mentioned reason given for low grading the supervisory position.

*Opinion of Supervisors*—In looking at supervisors, co-workers and subordinates, the concern is not with what abilities, skills, and qualifications they may actually have, but rather with the impressions other personnel in various job-categories have of their capabilities. *Although these impressions may not be correct, it is upon these impressions rather than the objective facts that actions are based—actions which help determine the functioning of the organization.*

Adjectives used to describe the characteristics of supervisors were selected to obtain in a general way opinions on their personal characteristics as well as their professional and managerial qualifications.

Although every effort was made to assure the respondents of anonymity and to solicit candor in their replies, we must recognize the possibility of evasion. Some evidence of such evasion was expressed in free responses in some questionnaires and in preliminary talks with personnel. Thus, the picture here presented may be somewhat more favorable than actually exists. The magnitude of the bias produced in this way can not be determined.

In general, the respondents described their supervisors as "intelligent" but they were less favorably impressed with their "knowledge" and their "up-to-dateness." It should be noted that this opinion was found in all job-categories and also among administra-

tors as well.

Personality traits of a significant number of supervisors were negatively characterized as being "stubborn," "not tactful," "annoying," and "quick tempered."

Negative qualities reflecting managerial practices reveal a weakness prevalent in many organizations, that of communications breakdown. In all job-categories, "(does not) tell me where I stand" was the most frequently noted criticism. Many respondents also stressed such related characteristics as failure to "praise good work" or to "ask for advice."

In all of the items considered there was no pattern to indicate that supervisors in one category or District were definitely more favorably, or unfavorably, described than those in any of the others.

*Opinion of Co-Workers and Subordinates*—Generally, the opinions given by the respondents concerning their co-workers and subordinates were favorable, more so than that accorded supervisors. A large majority in all job-categories felt that the adjectives "responsible," "intelligent," "pleasant," and "cooperative" applied. However, "loyalty" was uniformly selected less frequently to apply to fellow workers. The most commonly selected unfavorable characteristic was "talks too much," and to a lesser extent "lazy."

The most favorable opinion of fellow workers was held by Foresters, Administrators, and Fire Prevention Officers. Fire Control Personnel and Forestry Foreman II had the least favorable opinion of fellow workers.

*The Image of the Public*—The image of the public differs among forestry employees within the various job-categories. It is more homogenous with respect to the friendly attitude of the public. The majority of employees emphasize that the public is affable and friendly, but images concerning other characteristics of the public vary. Conservation Camp Superintendents, Administrators, and Assistant Rangers held the most favorable opinion, while the least favorable was held by the Foresters, Fire Control Personnel and the Foreman II.

The public on the whole was described by most employees as: "friendly," "cooperative," "helpful," "law abiding," "not stubborn" or "dangerous," but "uninformed" and "careless." Those Division employees who dealt directly with fire or forest management, and perhaps thereby dealt more with the public and the effects of their behavior, most frequently found the public "dangerous," "stubborn," and "careless," and prone to the violation of forestry and fire laws.

Attitudes toward the public are reflected in

indications of how the public should be dealt with. Respondents who were most favorable in their opinion of the public were: (1) Less likely to undertake enforcement action if they observed a minor violation; (2) less likely to appraise present fire laws as "much too lenient"; (3) less likely to approve of stricter enforcement of fire laws; (4) less likely to be unfavorable in the evaluation of the effectiveness of prevention methods. Conversely, they were more likely to approve of educational methods; and (5) less likely to consider people as "a bother in wildlands."

*Images of Station or Conservation Camp Life*—The picture presented by the data indicates that, while nearly all employees accept the necessity for Station and Conservation Camps, a large number are seriously dissatisfied with some aspects of life in these places.

Some of the more predominant disadvantages reported were: (1) Not good for morale; (2) poor for family life; (3) not good recreation facilities; (4) sexually frustrating; (5) not fun; and (6) monotonous.

The most common unfavorable opinion came from those employees who dealt with the station or camp life daily, that is Fire Control Personnel, (Truck Drivers and Forestry Foreman I), Forestry Foreman II, and Superintendents.

*Difficulties of New Employees*—The most frequently reported difficulties encountered by new employees included (in descending order of mention): adjusting to long hours, adjusting to station life, inadequate training, unclear policy, and adjustments in family life.

### **Opinions of Management Practices**

The subject of this section is closely related to that of several of the previous sections, such that the response in one may color that in the other, and vice versa. Here, however, we will deal with specific questions, as they related to the respondents' impressions of management practices affecting their jobs.

Employees generally believed that their jobs provided considerable opportunity for discussing their work with their supervisors, for personal contact with

their supervisors, and for independent thought and action in their jobs. Even administrators, however, felt that they had little opportunity to make, or even influence, high-level decisions.

Those holding different jobs did not vary greatly in their perceived opportunities to discuss their work with their supervisors. Rather substantial differences by job-category were observed, however, in reported opportunities for personal contact with supervisors, opportunities for independent action, and opportunities to influence and make high-level decisions. Administrators and Fire Prevention Officers rated their jobs higher in most of these areas than did those in other job-categories. The lowest average ratings were made by Foresters, Forestry Foreman II, and Fire Control personnel.

There was considerable variance in the ratings given in response to these items by employees within the same job-category. This variance may reflect differences in local situations and practices, as well as differences in assigned responsibilities.

Employees were asked to report how much of these characteristics *should be* connected with their jobs, in addition to indicating the amount existing. In each area, aspirations exceeded reported present situations.

Although respondents generally gave a favorable rating to the item "opportunity to discuss work with my supervisor," of the management practice items considered, this was the item in which aspirations most frequently exceeded the reported situation. Opportunity for such communication with supervisors was found to be closely linked with such critical aspects of morale as: feeling their job gives them a chance to do things they are best at, obtaining a feeling of self-esteem from their jobs, seeing their jobs as giving them an opportunity for personal growth and development, and feeling their jobs have high prestige within the Division (*fig. 2*).

These findings are consonant with results of studies that have uniformly shown effective communication to be a key element of successful management.

## **CONCLUSIONS**

Had identifying strengths been a study objective, much that is commendable to the California Division of Forestry, no doubt, could have been verified. The Division's primary concern, however, was in detecting and rectifying existing or potential weak spots in the organization's operation. Organizations, as well as individuals, have varying levels of aspiration as well as

attainment. Many of the points identified as capable of improvement might be seen by many other organizations as enviable achievements. It is within this frame of reference that these conclusions are drawn.

From the many aspects of job satisfaction and employee motivations studied the following appeared

to be the most crucial:

- The majority of employees are dissatisfied with the level of prestige of their jobs inside and outside the Division of Forestry.
- A large number feel that there is room for improvement in such areas as the opportunity for self-realization, and especially in the area of personal growth or self-actualization.
- Much criticism was given to some existing managerial practices. Person-to-person contact, which

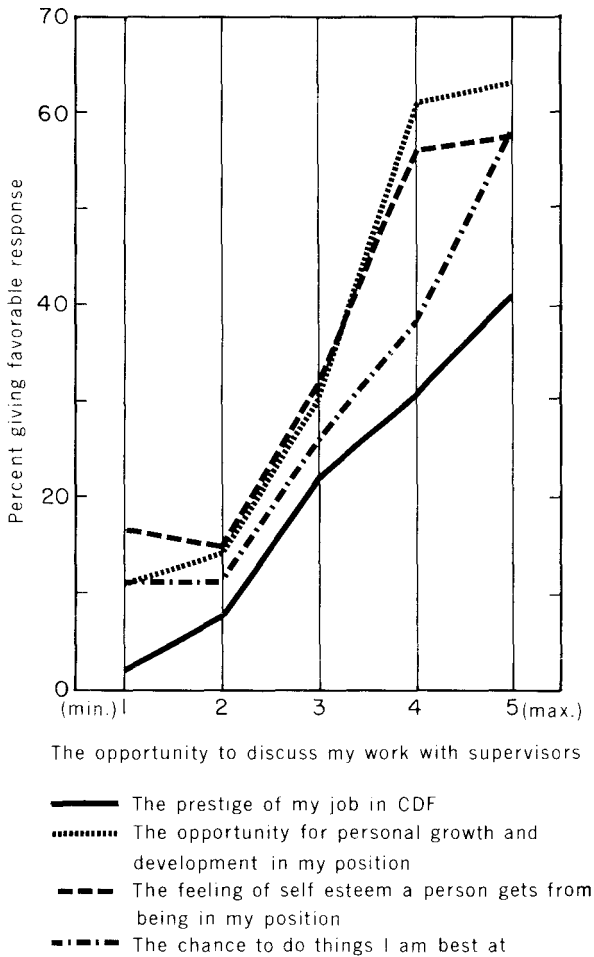


Figure 2—California Division of Forestry employees were asked to evaluate their opportunities to discuss their work with supervisors by scoring on a five-point scale (ranging from minimum to maximum opportunity). The opportunity to discuss is considered a key element in modern management practices. Employees who responded favorably to the "discussion" statement were likely to respond favorably (by scoring 4 or 5) to each of four other statements that might characterize their jobs.

is highly valued by employees, appears to be more limited between superiors and subordinates than the respondents would like. The inhibited state of communication along the chain of command may, in part, account for the divergent systems of priorities held by employees in different posts.

- Many respondents are dissatisfied with the impact of their job upon their family life. Fire Control personnel may adjust to the hazards of fire, but the difficulties created for the employee's family life are not as readily adjusted to (75 percent were dissatisfied with their opportunities for a rewarding family life).

Respondents to the questionnaire are concerned with social needs, with esteem needs, and with self-actualization needs. The situation appears to call for more attention to the interpersonal and managerial practices that operate within the Division. These are factors that lead to genuine job satisfaction. However, this attention to these factors must not be at the expense of such "hygiene" factors as working conditions and salaries, which the respondents also consider unsatisfactory.

Four elements of a successful, broad-based fire prevention program are especially relevant: (1) a general belief in the importance of fire prevention to District and Division leadership; (2) a general belief in the effectiveness of current prevention methods; (3) a general understanding and acceptance of leadership's prevention goals; and (4) a general willingness or desire to participate in and to enhance the prevention effort.

- Perception of Divisional priorities by the personnel reveals no awareness of a clear-cut priority system. Fire prevention is perceived to occupy an importance level much below fire suppression and fire detection but above the lowest rated land management advising and consulting function. Its perceived importance is not significantly different from that of a host of other Division activities (e.g., nursery and reforestation, State Forest management, and public relations). Most employees feel that fire prevention warrants a higher priority than they feel it is given by the Division. Personnel in Southern Districts, particularly in District Six, were more favorable toward their leadership's attentiveness to prevention activities.

Hazard reduction is seen as the most favored prevention method of Division and District leadership.

- The opinions of effectiveness of fire prevention efforts vary with the methods used. Education on a person-to-person level is described as "very" effective by a majority of the employees. Almost half of the

employees would describe law enforcement and its publicity, and education in schools as very effective.

Considerably lower effectiveness ratings were given to the mass media; radio was the method rated the lowest-59 percent of the respondents rated it "slightly" effective. The *use* of specific methods was not seen as being related to their relative effectiveness. Methods involving personal contacts were more highly evaluated than methods which do not. However, the effectiveness of most Division personnel in using person-to-person contacts is questioned. A great majority of the personnel were positively inclined toward all of the fire prevention methods they were asked to evaluate. Three-quarters of them indicated that each was "very" or "somewhat" effective. The highest rated method was "...telling the public about actual fire law convictions." This finding may indicate a desire on the part of employees to use admonition as a means of inhibiting behavior leading to unwanted fires—a desire perhaps stemming more from personal needs than from fire prevention pro-

gram requirements.

- The Division's fire prevention goals are widely accepted. And employees appear willing to accept even higher goals. Most respondents indicated that prevention activities should be given "a great amount of attention." Hazard reduction and prevention education are more favored than law enforcement. More than three-quarters of the personnel recommended more money for prevention.

- A large majority of employees indicated a desire for more prevention work than they currently perform. A number of new fire prevention positions were announced about the time of the study. An awareness of this announcement may have influenced this response.

Most of the employees recommend more use of most prevention methods, in some cases even without a particularly strong belief in the effectiveness of the method. They favor more prevention training, more inspections, and more treatment of roadsides to reduce fuel hazards.

## SUMMARY

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1970. **Fire prevention in the California Division of Forestry... personnel and practices.** Berkeley, Calif., Pacific SW. Forest & Range Exp. Sta., 10 p., illus. (USDA Forest Serv. Res. Paper PSW-65)

*Oxford:* (794)-U351 .78 : 432.1 : U658 .301 .

*Retrieval Terms:* Calif. Div. of Forestry; Sarapata Report; fire prevention education; job satisfaction; role perception; motivation; law enforcement.

A sample of California Division of Forestry employees whose jobs include some contact with the public were queried about job satisfaction and employee motivations, and their responses were related to the Division's fire prevention program,

The respondents interpretation of Division and District policy gives prime importance to fire suppression and fire detection. They expressed willingness, however, to give equal priority to fire prevention. The respondents were found to have a general belief in the effectiveness of current prevention methods, but the ratings of specific methods varied by job-categories and by Districts. Although some Division personnel may place greater emphasis on law enforcement while others place greater emphasis on education in a fire prevention program, in general, a commitment to both enforcement and education was found together—perhaps reflecting a more general commit-

ment to fire prevention as a whole.

The employee's job-related motivations and satisfactions were determined. These have implications beyond fire prevention job performance, but the emphasis of the analysis was to their implications for the fire prevention program. Most respondents expressed dissatisfaction with the level of prestige of their jobs. They felt limitations in the area of personal growth or self-actualization. Managerial practices which restrict such opportunities, or which inhibit communication and person-to-person contact were criticized. The respondents also expressed dissatisfaction with certain working conditions and with salaries. Positive qualities they associate with their jobs include: the general feeling of worthwhileness they derive from their efforts to conserve natural resources and to control fires; security; challenge; variety; and the opportunity to work out-of-doors.

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