

DEPARTMENT OF ECONOMICS, FINANCE AND ADMINISTRATION

Management Improvement Programs in State Highway Departments

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One of the principal objectives of the National Highway Management Conferences, jointly sponsored by the American Association of State Highway Officials and the National Highway Users Conference is to stimulate activity in the States, to help define management problems, and to indicate ways in which State highway departments may undertake management improvement projects.

More than 20 State highway departments have undertaken management conferences for executive and supervisory personnel. These follow the pattern of the National Conferences and utilize as study material a manual developed as a product of the AASHO-NHUC sponsored program. Although most States have held the management conference sessions just for the upper level executives, several States have had numerous sessions including personnel down to the project supervisors. In some cases these sessions have taken the form of management problem-solving workshops.

Several management improvement projects of a special and promising character are now under way.

• THIS PAPER is an appraisal of highway management improvement programs that have been initiated in the States, stimulated by the National Highway Management Conferences and related activity under sponsorship of the American Association of State Highway Officials and the National Highway Users Conference.

The National Highway Management Conferences—one week in

length—were initiated in 1956. Since then, there have been two each year. To meet the increasing demand for attendance there will be three National Conferences in 1962.

The purpose of the National Management Conferences is to provide for highway officials a program for discussion of management theory and practice somewhat on the pattern of the many executive development conferences carried on by industries and universities throughout the country.

The highway management conferences include academic discussion of the principles of management, consideration of what large, private businesses are doing in the areas of management improvement, and exchange of ideas between the highway administrator participants.

Although there are more than 200 still active highway administrators who have attended one or more National Conferences, over 30 of the chief administrators of the highway departments have attended, and only two States have never had a representative at a Conference, it has always been recognized that the National Conferences in themselves can do but a small part of the management improvement job. In the first place, there are thousands of individuals carrying on important administrative jobs in highway departments. The National Conferences can never accommodate more than a small percentage of this total. Furthermore, it is recognized that the Conferences are the beginning, not the end, of a management improvement program. Therefore, the States have been encouraged to carry on their own conference programs—generally called seminars—to provide the groundwork on which to build management improvement programs in the States.

STATE HIGHWAY MANAGEMENT SEMINARS

More than 20 States have had one or more management seminars. The State seminars have been patterned to a degree on the National Conferences.

Most of the States have used the "Manual for a Highway Management Seminar" as a principal text. This was published in 1957 by the American Association of State Highway Officials and the National Highway Users Conference.

The majority of the States have

limited seminar programs to one or two, with attendance only from the upper level of management.

In some cases the programs have been for a continuous full week very much like the National Management Conferences. In other cases programs have been for shorter periods—three days, for example. Also, there are instances when the seminars were scheduled for short sessions, either a day or half-day, at weekly intervals over a period of several weeks.

In contrast with the holding of only one or two seminars for top management, several States have "gone all out" with the intent, over a few years, of reaching all levels of supervision.

At least one State has a carefully scheduled program for a series of annual seminars—each three days in length—to be attended by the same groups of top and middle management personnel. One year they concentrate on one group of related topics, the next year on another.

Because of the wide variety of seminar programs, it should be possible to evaluate results and develop some conclusions as to what are good or bad programs. It would be ideal if influence of the seminars could be measured directly on the individual managers who participate. Then equations could be set up representing various elements that go into the programs and be solved for the several variables. The best that can be done, however, is to reflect one's own judgment and that of many highway administrators with respect to the influence of some of the variables in the seminar programs.

Penetration

How far down the management ladder does the seminar program go? Should seminars be limited to top management? Should they include top and middle management? Or,

should they be organized to include all managers down to first-line supervisors?

It was indicated earlier that some States have held one or two seminars just for top management personnel. In others, however, the seminars are being scheduled to reach and ultimately include first-level supervisors. In one State, there has been a seminar for top management and another for a select group of young lower-level managers. Therefore, there are at least three different "penetrations" with the seminar programs.

A seminar program should not be judged good or bad based on whether it is limited to top management or whether it is organized to include ultimately all levels of management. It may be that in different highway departments there is not the same concept of the seminar as a part of a management improvement program.

It is noteworthy, however, that the States that have extended the seminar program to lower management levels are some of the most enthusiastic and determined in their efforts to develop managers. Judging from their experience, it appears that the management seminar has great value at all management levels.

Location and Facilities for Seminars

Seminars have been held at a variety of places: headquarters conference rooms, university campuses, fairly isolated conference centers. Some were in crowded, poorly furnished rooms; others had excellent facilities.

Unfortunately too little attention is given to this problem of site and facilities. The seminar should be held at some site away from headquarters. Participants should be housed together. No one should be allowed to commute from home to seminar sessions. The seminar room should be of ample size to accommodate all participants around a

U-shaped table. Acoustics should be such that everyone can hear everyone else. Ventilation is important, as is freedom from disturbing noises. Consideration should be given in advance to blackboards, slide and movie projectors and screens and any other facilities needed for discussion sessions. Name cards of large and legible design should be set in front of each participant. Stick-on white letters on black cards are excellent. Comfortable chairs and table arrangements are most important. The sessions are long and the participants are entitled to every consideration for their comfort.

Some seminars have been disappointing and the results not too good, and to a considerable extent this has happened simply because of a poor location and inadequate facilities.

Time Schedule

Some States have used the same schedule as the National Conferences. These run a week, starting Sunday afternoon and ending Friday night. A number of States have run three-day schedules. Several have had programs of single or partial days, repeated at regular weekly intervals.

There have been some fine programs held on each of these schedules. However, it is much more difficult to conduct a successful program on the week-to-week scheduling of a day at a time than to have the group together continuously for a longer period. There have been some programs scheduled from week to week that have not been satisfactory in the view of the State personnel themselves. On the other hand, there are no reports indicating dissatisfaction with programs scheduled for a full week.

There are some real values in getting participants away from their jobs for as long a period as possible. To get the maximum value from the

seminar, they need to adjust to a different atmosphere and a new routine. This takes time.

When the National Conferences started in 1956, experienced executive development conference leaders said that this kind of job should not be tried for less than two weeks. They emphasized that it was not just the scope of the subject matter but, equally important, the need for people to adjust to the conference atmosphere. At that time, it did not seem possible to get highway officials away from their jobs for two weeks, so the conference was held for one week. This proved highly successful. If it could have operated two weeks it might have been even more successful. Three-day State conferences have also apparently been quite successful. It is probable that they would have been even more successful on a full-week schedule.

Size of Seminar Group

There have been seminars with as few as 20 participants. There also have been groups as large as 40. There can be no categorical position on this. If the seminar is conducted primarily as a discussion group, and not as a lecture course, with great emphasis on active participation, there are obvious advantages in a small number of participants. However, it may be found unfeasible or uneconomic to carry on programs with very small groups. This would most likely be the case if the program is to be extended to all levels of management where the total number of individuals ultimately to be accommodated is large. Furthermore, by using committees as work groups it is possible to generate broad participation even though the total number in the seminar may be as high as 40.

It must also be recognized that the length of the seminar, the management experience level of participants, relationships already existing be-

tween individuals, prior experiences, etc., are all factors influencing the group and individual response.

It is concluded from the experience with the National Conferences and work with the States that for a one-week seminar, with top management people and using committees as work groups, 30 represents a desirable seminar enrollment.

Selection of Seminar Participants

It has been suggested to States, as they undertake programs, that they start with top management in the initial seminar. It is apparent that any management improvement program, starting with seminars and continuing with other activities, must always have the understanding and full support of top management.

Several questions immediately arise, however. Should the very top boss or bosses be included—the highway director, the chief engineer, the chairman of the commission? Should any individual attend with his direct superior also in attendance? Can all the top managers be away from their jobs at the same time?

The first two questions, to a degree, are the same: should a man attend a seminar at which his direct superior is in attendance? The answer is definitely no. In most instances at a number of seminars where bosses and immediate subordinates are attending the same seminar, the subordinate will not participate in the same way he would if he were attending on his own, which is a perfectly natural and understandable situation. The effective superior-subordinate relationship contemplates that when they attend a meeting together, the superior speaks for the organization. In their own sphere of work activity they may have differing views and discuss them freely, but when they move into sessions with people from other segments of the organization,

or with outsiders, they have only one position with regard to their work and that is generally presented by the boss.

The management seminars deal with principles and with hypothetical problems and need not get down to problems involving the work area of the individual. This is generally true, although it is very effective to have participants bring up problems from their own areas of work. However, even in discussion of principles and non-highway problems the subordinate—by training—defers in the group meeting to his superior.

It is a rare situation to get the same participation from subordinates with and without their bosses present. Many bosses sincerely do not believe this because they are so anxious that it not be true; they feel it is a reflection on them personally, on their tolerance as bosses and that it implies a lack of mutual trust and respect between them and their subordinates.

It is therefore concluded that the director, the chief engineer, and the chairman of the commission should stay away from the seminar being held for their subordinates. Most States accept this and the top officials, as well as some others in the department, go to the National Management Conferences and receive their exposure to management theory, principles, and practices.

For positions below the top, there may be difficulty in completely separating superiors and subordinates. When only one seminar is held for top management, it is almost certainly necessary to have a number of men and their immediate bosses in attendance. Though not ideal, this is better than not having some key people attend at all. Immediate superiors and subordinates would, of course, be separated on committee work assignments. If two seminars can be held for top management personnel, it is possible to set the two

groups with minimum, if any, superior-subordinate pairs in the same seminar.

The question was raised as to whether all the top managers could be away from their jobs attending a seminar at one time. In one State, literally all top brass were away for three days. The department operated in their absence without a crisis. No emergency telephone calls required the absence of any participant from the conference sessions. This might indicate that nothing was done in the highway department for those three days. However, it probably indicates the top staff people are good administrators and have things organized so their subordinates are prepared to carry on in their absence. In another State, all but a few of the top managers were away for a full week. The few excepted from attendance had been to National Conferences and represented a skeleton force of top management during the one-week seminar.

The best arrangement for top management seminars is to split the group in two. One-half attends one week; the other attends another week. As indicated earlier, this minimizes attendance of superiors and subordinates at the same seminar. It also reduces the problem created by many key people being away from their offices at the same time.

There is another problem in the selection of seminar participants: what do you do to management personnel who are not included? Unless well-defined and impersonal distinction can be made of the management levels that are included, there will be individuals who feel left out. John Smith is selected for attendance. George White, who thinks he has a comparable job, is left out. Why? Can this be explained to George?

If seminar participation includes all division or assistant division heads and all district engineers, this provides a clear and impersonal basis of

selection. If the seminar program is being extended to all supervisory personnel on an established schedule basis, this is likewise clear and impersonal. If George White was not scheduled this year, he will expect to go next year. However, if there is no firm policy for future seminars and George White feels that he has been left out, he and his counterparts throughout the organization will suffer varying degrees of demoralization.

Seminar Methods

Seminars can be—and some have been—organized with the idea of encouraging discussion by participants as much as possible. On the other hand, a considerable portion of the program can be lecture sessions and some seminars have been handled in this manner. Committee work groups can be utilized for evening problem assignments and for periods during the day as well. There is considerable variation in the degree to which this has been done. Reading assignments are sometimes distributed for advance study by participants some weeks before the seminar. Likewise, in many programs, related readings have been assigned as the seminar is in progress. Formal textbooks are used in addition to the AASHO-NHUC “Manual for a Highway Management Seminar.” Special reprints and mimeographed material are used by some discussion leaders for advance assignments and also for handouts at seminar sessions.

In attempting to appraise what has been done, it must be recognized that the individuals who are responsible for the program (the discussion leaders, primarily) have developed special techniques and established certain procedures for handling seminars. It would be unrealistic to expect them to change. Furthermore, techniques which one individual uses effectively may not be so effective for

another. Finally, it must be recognized that as a seminar program moves ahead in a State, as succeeding seminars are held, and as broader concepts are developed by participants, the character of the program and the methods for handling sessions can be modified.

In this evaluation only a few generalizations are made:

1. Some reading assignments should be sent out well in advance of the seminar. These assignments should include academic treatment of basic management principles and some readings that present practical problems and practices in big business. Much greater progress can be made during the seminar if the participants have done some homework in advance.

2. Reading assignments for evening study are desirable supplements to the seminar sessions.

3. Committee work groups are excellent means for getting extra value from the time outside of the regularly assembled seminar sessions.

4. Active participation in discussions is preferable to lecture sessions.

Discussion Leaders

It is difficult to appraise discussion leaders except to reiterate what has just been mentioned. Leaders who do a minimum of lecturing and a maximum of stimulating discussion are preferable. In any case, discussion leaders should be given advance information about the highway department organization, the highway work program, external relationships, current problems, etc. A good discussion leader will appreciate getting this background information and will make effective use of it in preparing for and conducting seminar sessions.

There is another consideration with regard to discussion leaders. Should only one or two men be used

exclusively, or should a greater number be scheduled? Should they be from the academic community? Should industry representatives be used in spots? Is there a place for highway department employees as discussion leaders? Every conceivable type and combination of discussion leaders probably has been used in the State seminars.

Some of the advantages in using a minimum number of discussion leaders for a week-long seminar are the following:

1. Leaders and participants get acquainted. They may be expected to establish a rapport that is conducive to spontaneous discussions.
2. The leaders will make changes in the handling of sessions as the seminar progresses and they learn individual interests and problems.

Some of the disadvantages are the following:

1. There is likely to be less change of pace, less variety in technique.
2. More leaders would bring more viewpoints and greater breadth of concept to the seminar.

The following are some of the advantages of having industry representatives to supplement the academic staff:

1. It provides a practical application of management principles.
2. It contributes a change of pace.

A possible disadvantage of using an industry discussion leader may be the difficulty participants have in relating their problems to the industry presentation. Only rarely should this occur, however, if the industry representative previously has been given adequate background information about the seminar program and the participants.

Using highway department employees as discussion leaders has been

successful in some cases but not in others. If participation as a discussion leader is considered a training technique, which it is, and if the department is willing to take a gamble on an occasional dull session, it is quite appropriate to use department employees as discussion leaders. It is suggested, however, that outside leaders carry the major responsibility, at least until some local talent has demonstrated unusual competence.

In any case, one man should be designated conference leader and follow through as coordinator for the entire program. Preferably, this should be a professional in the business of handling conferences.

Seminar Discussion Topics

As would be expected, the general area of discussion topics has been fairly much the same for all seminars. An effort is made to cover the principles of organization, planning and controlling, and communications. The human relations aspects of management are emphasized and appear to be new and stimulating to many of the highway administrators.

The real differences between seminars seem to be in the way the topics are handled. One extreme is to present the principles on a topic-by-topic basis, following the classical process in formal education. The other extreme is to use cases and problems as discussion topics, each providing illustrations of management situations in which certain of the management principles may be involved. The cases, like most management problems, are never susceptible to solution with a simple, single correct answer. The problem technique has been called the "Harvard Case Method" because of its development and intensive use in the graduate school program at Harvard University.

No State seminar appears to have followed the first extreme precisely. Most States have had programs that

start from this base but use cases and problems as a supplementary teaching technique. This, in effect, ends up in a combination of the classical technique with varying usage of the case method.

At least one State has conducted a seminar designed almost wholly on the case method technique. This particular seminar program was not considered really satisfactory, but there were some very unfavorable factors, which had nothing to do with the case method, that rendered this neither a reasonable nor conclusive test.

It has been observed, nonetheless, that for short-period seminars such as are involved here, the all-out use of the case method is not desirable. It is a time-consuming process, and it is a frustrating process to the uninitiated. For programs of longer duration or for individuals who have some background in the method, it is, no doubt, an excellent educational and training process.

As indicated earlier, most State seminars have been organized to use cases, problems, or incidents to supplement more formal consideration of topics. For this purpose there is a wide variety of material. There are case problems from industry, some highway department problems, and there are films that present management problems in an effective way. The trick with any of these is to select problems and evoke discussion of them to bring out the management principles. The tendency of participants new to the case technique is to try for the "one answer" rather than to explore and analyze all aspects.

Appraisals by Participants

Some States have had participants make appraisals upon completion of a seminar. After examination of some of the State and National Conference appraisals, it appears that those by participants are a waste of

time. The conference leader, who should be involved in the planning of the seminar and be present for all sessions, will be able to make an effective appraisal of the program. It is doubtful that he will find any real value in voluminous recordings of participant post-session attitudes.

If some sessions did not go over, an alert conference leader will know it when the session is going on. He will appraise the situation on the spot much more effectively than will a composite appraisal a week or so later. He will do a lot of informal visiting with participants during the off-hours and will listen in on discussions between participants that are much more revealing than a bundle of evaluation forms.

The seminar program should be appraised, but not formally, by the participants. Appraisal is the responsibility of the conference leader. Furthermore, appraisal should be directed to something deeper than an evaluation of the seminar, per se. It must be directed toward the underlying problems of the department. What has the seminar revealed as to areas of organizational conflict? What are the participants' attitudes about developing people, their (the participants') responsibilities, the department's responsibilities? These and other important management questions should be the subject of evaluation by the conference leader.

Appraisal by Conference Leader

As implied in the preceding paragraph, this is the area in which more emphasis needs to be placed if full value is to be obtained from management seminars. The seminars should be planned with two major purposes in mind:

1. They should be as they generally are, designed to give the participants an opportunity to learn something about the principles and practice of

management and to carry back to their jobs an interest in making some constructive management improvements.

2. They should be, as they generally have not been, organized with the definite concept of developing from them some guide lines for department policy and action in the accomplishment of organized department-wide management improvement activities.

If the seminars are planned with the latter objective in mind, the conference leader (or leaders) must make a continuing appraisal as the seminar is in progress. Subsequently, the conference leader should, on the basis of his appraisal, sit down with top management of the department and map an action program for management improvement. He should be admirably prepared on the basis of seminar discussions to know where improvements are most needed and the degree to which they are recognized by department personnel. This recognition is important, because a management improvement program can be effective only if it has the understanding and support of key personnel.

ACTION PROGRAMS FOR MANAGEMENT IMPROVEMENT

As indicated, one of the purposes of seminars should be to provide the guide lines for continuing management improvement programs. The point was made that this potential of the management seminars has not been adequately appreciated or exploited. However, there are continuing management improvement programs that have been initiated in a number of States. Some have been conscious products of the seminars. Others have been started fairly much as independent efforts.

A canvass of the States and the Bureau of Public Roads was made in

fall 1961 for the AASHO-NHUC Highway Management Advisory Committee to see what the individual States were doing in carrying on specific management improvement activities. Over 30 States and the Bureau of Public Roads responded with a huge array of projects. Selected excerpts from the highway department reports were distributed with an AASHO-NHUC "Management News," November 13, 1961.

Even though there is tremendous interest in management improvement and a wide variety of activities being undertaken, there are some rather obvious shortcomings in the efforts of most highway departments.

Top Management Involvement

First, there is the need for top management to set the stage, to demonstrate its vital interest in management improvement activities and to set objectives and policies that define clearly the intent of top management. Many highway departments do not have well-defined objectives and policy manuals which establish clearly the intent of top management.

Top management might well ask itself whether there is a written statement of the objectives and general policies of the organization and whether it is reviewed and revised periodically. Presumably the concept is accepted that the basic objectives of the department are "to develop and operate an adequate highway system." However, policies and objectives need to be defined clearly. They need to be reviewed constantly and to be fully understood by all management personnel.

To illustrate this, about 15 years ago the author was active in developing an in-service training program for graduate engineers in the Connecticut Highway Department. A fair job of recruiting was done and a

carefully scheduled two-year program worked out for each recruit, but there was a poor job of defining a department policy. The total problem of developing people was not examined. No cognizance was taken of the development needs of all supervisory and professional personnel. Attention was simply on the new recruits.

It is now generally recognized that a good management improvement program must be geared to providing opportunity for the fullest possible development of all supervisors and potential supervisors. Objectives and policies should be defined accordingly.

Participation

To refer again to the "ill-fated" in-service training program of 15 years ago, there was a further error in establishing the program. It was created and organized almost entirely by the author and the personnel division. However, the individuals to be trained were, of course, assigned to supervisors of divisions in headquarters and to district engineers, each of whom was told what he was supposed to do. In other words, the program was organized dependent on the line-operating personnel to carry it out.

Looking back, it is easy to see that the training program should have been set up in the planning stage with participation by all those who were to be involved. It should have been the supervisors' program, not a headquarters program.

This shows the need for top management to set policies that define responsibilities for developing people and that assure participation by all levels of management in organizing specific programs.

Attitudes

There is a need to change some attitudes to make real progress in

management improvement. It has been said that management improvement is all right for big private business, but the task is to get on with building roads and that there has not been time, as yet, to do any work-scheduling. This is not to imply that these are attitudes held by all top administrators in highway departments; however, such remarks are typical of comments that make clear that there are some who still look on management improvement as an extracurricular activity. Policy statements and examples set by the top people in the department are the best ways to change these attitudes. Quite a different, but equally frustrating, attitude is the one that implies there is no opportunity to make management improvements because of the obstacles imposed by civil service or political influences. A less specific but equally defeatist type of expression says simply that highways departments are different.

Actually, much of what might be called the art of management is directed toward overcoming the obstacles or reducing the impact of undesirable influences. In work with highway department representatives, situations have been seen where the civil service agency turned out to be a true help rather than an inflexible obstacle, but it was in response to a clear defining of the needs of the highway departments and an effective presentation to the civil service people. Also observed are situations where political highway commissioners showed a surprising understanding of the political values associated with good business practices.

Such things do not happen with a defeatist attitude. They do happen where the highway department has defined its objectives, established a plan, and then worked with civil service or the politicians to obtain their understanding, support, and assistance.

Reading Management Literature

Most highway engineer-administrators read the construction and engineering trade publications and professional journals. There are few, however, who give equal attention to current writings in the field of management. Yet the latter writings probably have more application to the highway administrator's job than do the technical publications.

There are two highway departments where an effort is made to refer to top administrators selected periodicals dealing with management topics. The response has been quite enthusiastic. Another highway department has started a management newsletter which will circulate interesting and helpful items dealing with management problems.

At the risk of being accused of conducting a membership drive, it seems as a minimum activity in this area every highway department should join the American Management Association and take advantage of the vast amount of material developed and circulated to its membership by that Association. An appropriate individual in the highway department should review the AMA publications as they appear and see that significant material is widely circulated to administrative personnel.

Changes Must Be Managed

One critical need in management improvement is the adequate management of "change." There are numerous instances where highway departments have been reorganized but the results have not reflected the intent. For example, despite the intent in some cases to decentralize authority to the field, all too many decisions are still being made at headquarters. Despite the intent to create a line and staff organization with the staff providing a planning, advisory, and service function, the

staff is actually a group of functional-operating heads each holding authority for his individual function. This is not saying a department may not be effectively operated on a centralized functional basis; rather, if it is intended to decentralize authority and create a line and staff operation, where previously authority was centralized, such a change must be carefully managed. It will not just happen because a new organization chart was prepared. It is necessary to supplement the chart with some specific definitions of the function to be delegated to key jobs, to spell out clearly the responsibilities of the key jobs, and to indicate the relationship between them. It is necessary, too, to work with the individuals who are primarily involved in adjusting to the change.

In making this kind of change, there are generally two primary problem areas. One is to get the district engineer to accept and use the authority he is presumed to have been delegated; the other, to get staff men to recognize the potentiality for important contribution in the planning field in contrast with the operating phase of the business.

The need then is to recognize the problems associated with change and to work with the people involved. This is to a considerable extent the problem of the chief administrator. He must define what he wants and guide his organization toward the objective. He may utilize the assistance of an organizational planning unit if he has one. He may engage outside counsel to provide guidance; but, most important, he must recognize that changes must be managed and be prepared to provide the management required. Otherwise, the change intended to effect a management improvement may be an empty gesture—a change on paper but not in fact.

Statistical Data for Management

All highway departments maintain vast amounts of statistical data. In some instances these data are being used for management decisions.

However, there is a vast potential for analyzing and using the statistical data way beyond the current practice. One State, during the past year, used its cost records for all equipment maintenance throughout the State to establish standards for labor requirements for maintaining each class of equipment. Manpower budgets for each repair garage are now set on the basis of the standards. They provide a completely defensible total equipment maintenance budget requirement for the highway department. In this case they promise, also, an early savings of considerable money as adjustments are made to meet the standards. Yet the standards are quite conservative.

In all of the highway maintenance activities there appear to be tremendous potentialities for more use of statistical data analyses. Comparisons of unit costs from year to year and from district to district should be regular control practices. Production standards should be established for comparable work to provide the basis for performance budgeting and control.

The results of different work methods and practices should be analyzed to take advantage of improved practices. This is an area of management improvement in which much needs to be done—and can be done—with effective utilization of data now generally being accumulated.

Development of People

It can be truthfully said that management improvement will take care of itself if an adequate job is done in developing people. In fact, there is substantial evidence that a successful enterprise of any kind will be largely

determined by its manpower development program. In the highway field particularly, the accomplishments of a department over a period of time are directly related to the caliber of its personnel, and the caliber of personnel will be a direct reflection of the total development of people effort.

What needs to be done that is not being done to develop people in highway departments begins with a good manpower inventory. Many highway departments have records of employment dates, salary, and civil service changes, but little else. There is need to have a complete record for each manager or potential manager, with his educational and experience record presented in easily-appraisable form. There is need, too, to have an appraisal of his job performance and his potential. Finally, it is necessary to know what the individual should be doing to develop himself on and off the job, and what the department and his supervisor should be doing to assist him.

This is a fairly complete package. It cannot be done all at once, but it provides the goal toward which the inventory should be directed. In any case, the beginning inventory record can be developed very quickly with much of the basic information needed.

In addition to the inventory, the project to develop people should encourage more effective superior-subordinate relationships built around performance appraisals and coaching and counseling by all supervisors. This is the most critical area of the entire development of people activity. It is critical because development occurs primarily on the job, so it is the superior-subordinate job relationship that determines whether the development will be effective or ineffective.

There has been a great deal of study and much writing on how to attain an effective superior-subordinate relationship for appraisal and coaching and counseling. There are

two points to emphasize: (a) performance appraising and follow-up interviews should be made a requirement of supervisors and (b) the superior-subordinate appraising and coaching activity should be job-oriented.

There are a variety of related activities that need to be associated with the development of people effort: (a) forecasts of management manpower requirements in the years ahead, (b) replacement schedules to provide assurance that there are competent people to fill positions when they become vacant, (c) lists of promotables from which to develop the replacement schedules, and (d) organized programs for training and development to prepare people for advancement and, equally important, to do a better job where they are. In few State highway departments, if any, are all these things being done now. Some States have made beginnings of an encouraging nature. Many States have shown a recognition of the needs in these areas and soon, no doubt, will be undertaking organized programs.

Although much needs to be done in management manpower development in highway departments, big private industry is also faced with similar problems and finds itself equally challenged. Illustrative of this are some comments by the personnel director of a large industrial organization in discussing the need for developing supervisory employees.

We know you don't hire managers, you have to make them.

Each of you, during the next ten years, must plan on replacing between 30 percent and 40 percent of the men under your supervision. Some of the jobs that will have to be filled require years of background and experience, which means that replacements must be selected well in advance of the anticipated need.

Too often still, when an unexpected managerial job opens up, we have to sit down, scratch our heads, shuffle personnel cards,

and make a curbstone decision between Tom, Dick, and Harry—and then sit back and hope that we've picked the right guy. I think the future will not be too tolerant of industrial organizations which rely on such haphazard methods.

We've got to learn to appraise a man's potential more quickly . . . diversify his experience more widely . . . and test his judgment more thoroughly . . . and well in advance of the need for him. When you need him, it's too late to train him.

What this company is ten years from now is going to depend largely on how good a job we are doing right now in selecting, promoting, and developing our people.

The author does not presume to have made a comprehensive appraisal of all management improvement activities being carried on by State highway departments. From the foregoing, however, it must be apparent that there is a great deal of interest and much effort being directed toward improved management.

In an effort to summarize the activities that have the greatest potential and toward which almost all highway departments could profitably devote increased attention are the following:

1. The conducting of management seminars in the States on a carefully scheduled basis with the ultimate objective of having all supervisors participate.

2. The development of a management guide that will define the functions, responsibilities, authorities, and principal relationships of all key positions.

3. The initiation of a development of people project to include a manpower inventory, performance appraisals, and a training and development program including a planned superior-subordinate coaching and counseling relationship.

4. Planning and scheduling highway and equipment maintenance by making better use of statistical data now available and by introducing

new management methods and establishing performance standards and training programs for maintenance supervisory personnel.

The degree to which these things may be expected to be successfully

advanced in any highway department will be dependent, first, on the establishment of clear-cut policies and objectives by top management and, second, on the assignment of competent people to provide guidance in carrying the activities forward.