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THE TRAINING OF TECHNICAL MEN FOR MANAGEMENT POSITIONS

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The revised version of this paper is to be presented at the 34th Annual Fall Meeting of the Society of Petroleum Engineers of AIME in Dallas, Tex., October 4-7, 1959.

Discussion of this paper at the meeting is invited. Written discussions for publication should be sent to the Society of Petroleum Engineers office.

ABSTRACT

Technical men have special characteristics which present unique problems in management development. They have the ability to grasp principles easily, to understand methods and procedures readily, to appreciate organization, and are orderly in their thinking and analytical in their approach. Yet they must develop new skills including the ability to deal with people's emotions, a willingness to make decisions even though complete information is not available, and the imposition of a new kind of self discipline. Several methods are given to help the technical man develop for management positions.

INTRODUCTION

The problem of helping a technical man prepare himself for supervisory, management or executive positions is an important one today. While the technical man may be a true professional in his field; i.e., he has a store of knowledge, the skills and methods to use that knowledge, and the discipline necessary to keep him ethical -- yet the transition from working as a professional engineer to a professional manager is an extremely difficult one for many individuals.

References and illustrations at end of paper

As we know, modern business is becoming increasingly complex. Today's managers direct activities which must cope successfully with complicated problems of engineering, legal restrictions, economic trends, public relations, employee relations--including dealing with local and national labor organizations, governmental regulations, and alert competition. Further, the manager who is just barely adequate today will be completely inadequate 10 years from now unless he [or someone] makes plans for his development.

Competition will not allow us to take time to permit our people to mature as slowly and as loosely as the old style supervisor did. There is not as much room for management errors. Since employees are better informed today, their bosses must have more supervisory skill, better judgment and a broader view.

Again, if a company is to find and hold good men, it must have some clear plan for providing for its people opportunities for advancement. All this then suggests that positive action is required to broaden the training and experience of technical people in order to qualify them to direct units of the modern organization.

In this paper we want to consider how we can

provide useful opportunities to technical men so that they can and will become competent management personnel.

THE PICTURE

Fig. 1 shows part of an organization structure. This is perhaps one of the most interesting and significant pictures in business today -- equally as important as statistics, curves, graphs, or financial reports. This structure has many stresses and strains. Sudden demands on it may shake it to pieces. Neglect may corrode it.

This diagram of course is just a small part of the picture. Fitting into it we have a great variety of technical people--technical men in the broad sense that they majored in one of the sciences; technical men in exploration, production, and manufacturing; engineers doing basic research in laboratories; engineers doing applied research; engineers involved in production design and development; sales engineers, etc. What I have to say applies to all these technical men as a group. As a group they have enough special characteristics to present unique problems.

Referring to Fig. 1, our problem is, how we can qualify at least one of the men in this lower group to handle the supervisor's position with a minimum of time lag and with fewest mistakes? And how can we qualify the supervisor to fill the boss' spot most effectively? How can we find men who can and will move up this ladder? What kind of framework is needed for this activity, and what kind of training is necessary?

THE PROBLEM

In facing this problem of discovering, encouraging, training and moving good technical men in an organization, we have some strengths on which to build.

Technical men certainly have the ability to grasp principles easily, to understand methods and procedures readily, to appreciate an organization of ideas or things. As we know, technical men are trained to be orderly in their thinking, analytical in their approach. They are intellectually honest; they have a high degree of skill in accumulating facts, arranging them logically, and making decisions based on this orderly process.

This is a tremendous asset. Technical men are sound and clear and firm on many things. They are confident that right answers do exist and they are positive that if they apply an orderly thought process to the problem the one accurate answer must emerge.

Now we must hold on to these strengths, but refine out the losses that they may bring. And we must add additional strengths. To be a

professional manager a man must have, in addition to his technical knowledge, another body of knowledge, another group of methods for using that knowledge, and above all, a new kind of self-discipline. Let me illustrate:

[a] Managers must constantly deal with the attitudes of people -- with their emotions -- with personal relationships -- with traditions -- with prejudices -- with ill-formed opinions. Technical men are usually irritated and troubled by such intangibles. Yet when a man makes the jump from the ranks to the supervisor spot he must be able to evaluate and use these things.

[b] Managers must frequently make decisions based on inaccurate and insufficient evidence. There may be "no time to lose". Their decisions therefore are often a combination of hunch and compromise. Managers recognize that perfection is not necessary -- that there may be several good ways of solving a problem. Technical men are inclined to resist this process. They want perfection, accuracy, thoroughness, proof. Thus they may on occasion be slower in making decisions, and their timing may be off.

[c] Managers, as well as getting the job done, must continually be concerned about developing people--for example, by delegating to them. By habit and training technical men are busy with things, with information; thus, when a skilled technical man becomes a manager he may be so firm that his subordinates lean heavily on him and thus may not develop their own full capacities, -- or he may disregard people.

[d] A supervisor or manager is a quarterback or captain. If he is to obtain the full and willing cooperation of his team, he must have earned the reputation for being friendly, sympathetic, understanding--as well as being technically sound. Technical men by habit and training are likely to go at things on their own--from a reasoning point of view [which is good] rather than from an emotional point of view. Thus their co-workers may not readily recognize the friendliness of the technical man. There is considerable evidence that firms headed by engineers have a disproportionate share of employee relations and labor problems.

[e] Managers recognize that success is the result of many things -- luck, a competitive spirit, seeing the other person's viewpoint, timing, the establishing of close personal bonds, etc. Technical men are inclined to feel that success should automatically be the result of technical competence and achievement.

These of course are dangerous generalities, but accurate enough for our present purpose. How, in view of these habits established by tradition and excellent training, how can we encourage and help technical men learn the new skills that managers must have?

AN APPROACH

We believe that the approach to the problem of developing technical men for management

positions must be a broad one. Not piecemeal, not optional, but part of a long-range company-wide plan that applies to all individuals.

Let me indicate on this chart [Fig. 2] what I believe to be the framework within which development must take place. These are the elements on which agreement must be reached in a department before any substantial progress can be made in self-development.

[a] The climate must be right. The right climate is the result of many actions which show a willingness to make changes, a pride in the company, and an awareness of the value of people. Good climate is created in part by having a well-designed and thoroughly understood organization structure where there is room for growth; by the acceptance of the idea that many of the management skills can be developed without losing technical competence; by adhering as much as possible to the policy of promotion from within.

[b] The development of technical people for management positions must be part of an overall self-development program throughout the organization. Otherwise there will be the grave danger of tagging certain individuals, of discouraging people who should be encouraged, of overlooking good prospects.

[c] The development activity must be a natural part of the company way of doing business, with a minimum of administration and tied in directly with the performance of daily work. It must be a line responsibility.

[d] Management at all levels must participate in the various procedures. This is not difficult if the procedures make sense.

[e] Position descriptions which give a reasonably clear idea of what a man is responsible for -- the scope and limitations of his job -- must be available.

[f] The concept of "pools" of promotable people rather than replacement schedules and ladders of promotion must be accepted. A pool is a group of people who have, by their performance, put themselves in a spot where they must be considered when certain jobs become available.

THE PLAN

The above we believe to be the essential framework within which plans can be coordinated for the training of technical people for top spots. We believe that before training can be effective, preliminary meetings with departments must be held to gain acceptance of this framework. Otherwise training will be spotty, spasmodic, uneven, optional.

The basis for development is quite simple in principle. The method I will mention is the one outlined by Drucker, Schleh, MacGregor, Mahler and others. Briefly, it calls for the subordinate technical man to review his job description and to decide what plans, suggestions,

and objectives he has for improving his present job over the coming twelve months.

In view of these objectives he also indicates the kind of help or experience he believes would be valuable to him. His supervisor comes into the picture only after the subordinate has given careful thought to his job for the coming year and to his own personal objectives. The supervisor helps the man to relate these objectives to the needs of the organization.

In other words the technical man is asked two basic questions: What plans and suggestions and objectives do you have for the job you are doing? How can we help you accomplish these things?

This process must not be optional but, within the framework established, must be mandatory for every supervisor. [Fig. 3].

This approach to self-development has the advantage of being a natural task for the supervisor -- talking about the job and evaluating his men by results. Further, the primary responsibility for developing his own abilities rests with the man himself.

In this process the supervisor is not trying to evaluate the participant's personal worth; he is not in the role of a psychologist. He does not need to have [or make] a deep analysis of the personal motivations of his men. He is simply trying to help them to do a better job.

The accent is on performance, not personal traits. Evaluations are based as little as possible on personal relations and as much as possible on the job to be done.

There are no uniform standards nor yardsticks. One man will set high objectives for his job and for himself and reach them. Another man may set low objectives for his job and himself and perhaps fail even to reach those.

In this approach to training, the supervisor and manager must decide what they want in the way of performance and whether or not they get it. Thus their judgments are involved. Who is in a better position to say -- and on what better basis can they make decisions?

The accumulated records of results in specific jobs should be the soundest basis on which to project future performance.

In helping men to identify these objectives for themselves a number of questions can be asked -- designed to stimulate their thinking regarding other management positions.

Suppose you had to take over your boss' job tomorrow, - what would you be worried

about? Suppose you had to leave your job to someone else tomorrow, - what would you be worried about? What are your toughest problems now? What do you do about them? What were your main worries when you took over this job? What kind of help has been most useful to you? What help would you like to have had? What do you think has held you back most? What takes most of your time now? Should it?

As we see it, this is the heart of any plan for effectively developing technical men for positions of responsibility. They themselves must sense their own needs, be led to discuss them, and within the framework outlined be provided with opportunities to carry out their own plans.

THE TRAINING

Within the framework outlined, and with a plan based on this "results" approach, the training of technical people becomes a daily line responsibility. On the basis of the objectives that have been established and agreed upon, the supervisor and employee together discuss development opportunities and attempt to work out a schedule.

The basic purpose of staff in this connection is to provide information on what kinds of opportunities are available and what has been industry experience with various development methods.

Here are some typical methods of providing opportunities for self-development:

Day-by-day Consultation

A man's learning and development are strongly affected by his supervisor's values and methods of operation -- by the aspects of the work which the supervisor indicates by words and actions to be important. Thus -- the day-by-day guidance received is probably the single most influential factor in a man's business progress because it provides strong motivation, learning by doing, and direct knowledge of results.

If together the man and his supervisor have worked out a plan of progress -- a set of goals for the individual and for the effort of the groups he supervises -- this plan becomes a charter under which they work and by which the day-by-day discussions must be guided. The periodic reviewing of progress and resetting of goals will provide the occasion for evaluating the effectiveness of this on-the-job communication.

Understudy Training

To give a man knowledge of the management responsibilities and practices of his supervisor,

it may be appropriate for him to represent his supervisor in certain meetings and group activities, to assume some of the department's supervision in special group projects, and to assume the entire responsibility for the whole departmental supervision when the supervisor is absent.

This kind of opportunity offers a man broad development in understanding the work of the department -- getting and interpreting facts, exchanging ideas and viewpoints with superiors, making decisions at a different level, etc.

Job Rotation

To develop management men with broader knowledge and well-rounded experience in the various phases of the company's [or department's] business, job rotation may be particularly helpful. This method may be applied by having two individuals of reasonably-alike organizational status exchange jobs for a specific period of time. In some departments it may be possible to create or assign special positions for this development purpose.

Committees

Some of the qualities of leadership can be experienced -- and strengthened -- by giving an individual an opportunity to work as a member of company or departmental committees. This experience will contribute to the man's wider understanding of the unit's integrated functions and needs. The importance of teamwork is highlighted, and the skills of persuasion and cooperation are seen, felt, and practiced.

Special Projects and Assignments

Sometimes an opportunity can be found, or produced, to fill a specific need an individual has for development. For example, a chance may come along for a man to work with a new group in planning a meeting, or a report, or a survey, or a special event -- and in doing this work he may gain a great deal of useful knowledge and experience, as well as establishing good relations with employees elsewhere in the company.

Temporary Replacement of Others

One of the most useful -- and easiest -- methods of providing development opportunities to men occurs when they must "fill in" for another individual who is sick, on vacation, or on special assignment. Unless this is seen as a real opportunity for training, filling in for someone else may be irritating and unproductive. If, in asking an individual temporarily to replace someone else, it is made clear that this is a real chance to obtain additional, valuable experience, then the occasion may be a most useful one all around.

Alteration of Job Content

As we know, some jobs in a company may tend to become routine after the first few months. The incumbent may then simply "keep things going," and, unless some special opportunity is created, may not put out any additional effort to develop himself.

Occasionally, therefore, it can be helpful to study the organization chart and the job descriptions, with a view to seeing how work assignments may be changed -- and how new responsibilities may be given to some individuals without changing the main work of the department. If this can be done, it will undoubtedly stimulate men to new and better effort.

Work with Consultants

The increasingly broad and complex requirements of management jobs today often require consultation with, or the active services of, competent specialists in various fields. Situations arise from time to time in which the use of one of the many consultative and service agencies is indicated. These situations can be used to provide new challenges and experiences to our own men.

University, University Extension and Night School

Training in some of the technical elements of business and industry and in some of the specific knowledge and skills required for management positions can be obtained through regular universities, and through university extension courses.

University Executive Development Programs

Executive Development Programs are now being presented by many colleges and universities throughout the country. These are full-time conferences run by universities, ranging in length from 2 weeks to 16 months. They are planned for a restricted number of executives, and registrations are usually limited to one or two from any one company.

Management Conferences, Institutes, Seminars, Workshops

Management Conferences, Institutes, Seminars, and Workshops usually are most effective in dealing with specific topics relative to business policies, practices and operations, and the techniques, skills, and methods of management.

Presented by universities, colleges, management and business services, research and counseling organizations, and professional societies, these programs vary in size from groups of 15 or 20 to several hundred. Sessions are usually

scheduled in periods ranging from one day to a week, and they vary in form from lectures to open discussion and workshop type meetings which draw completely on the resources of the members of the group.

Correspondence Schools

For some individuals home study is a particularly helpful way of achieving self-development. Also, some subjects lend themselves to individual application over a long period of time.

Business Society Activities

Not only every industry, but many branches of industry, have their own trade and business associations, and these can be extremely helpful in offering individuals new experiences in working with groups. And of course they can be a constant source of up-to-date information.

This method, perhaps more than any other, is an easy way of providing an employee with a whole new set of interests and a real opportunity for new social-business experiences that are closely tied in with his work.

Planned Reading

The individual needs that a person has for knowledge, both specialized and general, can frequently be met in large degree through a planned reading program. Management Development is an individual matter and requires personal achievements; therefore, reading can be an effective device because it can be tailored to fit the individual.

In-Company Training Activities

In most companies there are training programs in effect at any given time, and undoubtedly more individuals would profit by all or part of these activities if they were aware of them. In view of the need for managers with broad training, it is probable that training programs in one department might be of interest and value to individuals from a related department.

Management Meetings

Increasing use can be made of formal management and staff meetings for exposing men to problems and procedures they might not normally encounter. Men may attend the management sessions as observers, or might be asked to prepare and/or present certain reports. Both these actions are beneficial.

Toastmasters

One of the areas most frequently identified

as one where help is needed is public speaking. Certainly a good manager should be able to express himself well, on his feet, under all circumstances.

Much help is available through Toastmasters and other groups for the development of these skills.

Community Activities, Civic Projects

In every community there are many activities helpful not only to the individuals and groups of the community, but of special value to men representing a large company in the community. Participation in the activities, therefore, can provide real development for a manager, and at the same time, produce good public relations for the company.

Some illustrations of community activities would readily be found by reference to the local Chamber of Commerce, the Community Chest, Red Cross, Y.M.C.A., Church Groups, Scouts and Guides, PTA, etc.

Service Clubs

Many men have found a great deal of pleasure and real personal help by participating in a service club.

There are a variety of service clubs available, each with its own special kind of membership and special kind of objective.

Typical examples are: Rotarians, Kiwanis, Lions, Optimists, Sertoma.

Public Relations Assignments

A manager is constantly representing the company in the mind of the public. Therefore, in the development process, great use can be made in many cases of the opportunities that occur for a man to speak and act "officially" on behalf of the company.

CONCLUSION

We believe that if the right kind of opportunities are to be provided for technical men to prepare themselves for management positions, the development activity must be kept within a framework clearly understood and accepted by every department. This framework is designed to ensure that the same basis for appraisal is used throughout; that the process is no longer optional; that the responsibility is a continuing one for all men in supervisory positions; that men can put themselves in several "pools" of people promotable to various positions. Training must generally be tailored to the individual need, the main guidance being obtained from the objectives a man sets for his job and for

himself. Decisions on individuals can then be based mostly on performance -- which means, on the willingness and the ability of the technical man to make the effort to move ahead in management.

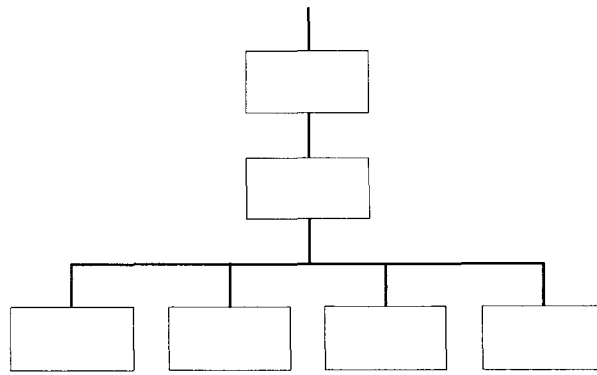


Fig. 1

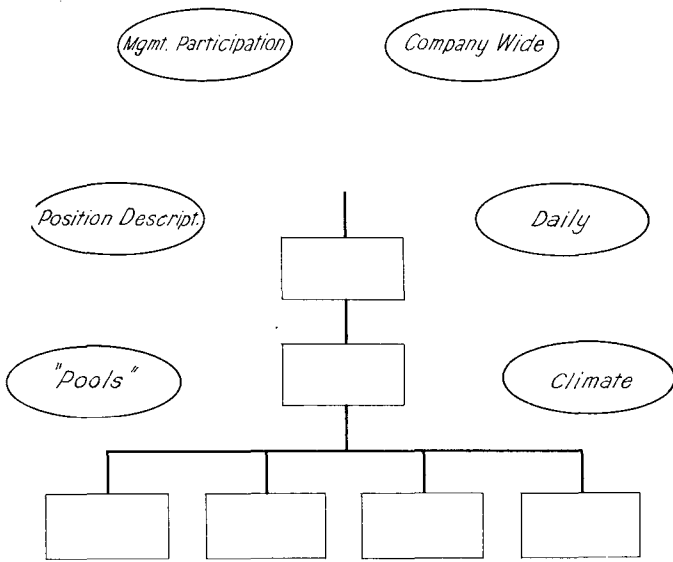


Fig. 2

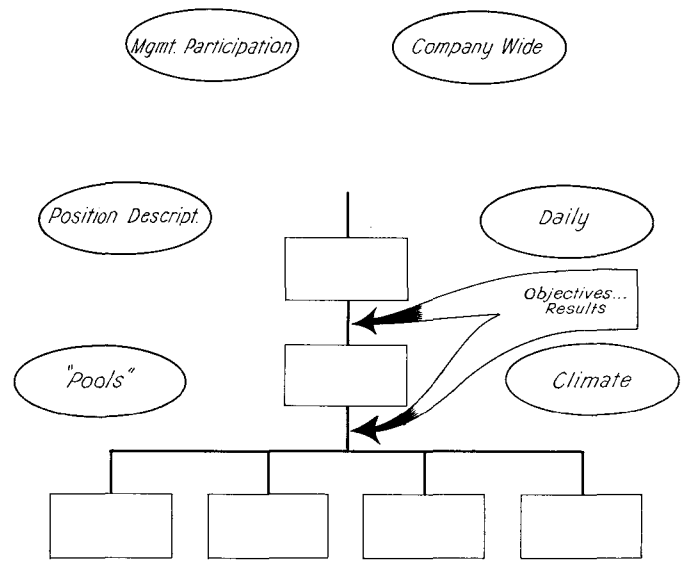


Fig. 3