*Second of Six Articles . . .*

# Motivation In Human Relations

## Part 2 — Frustration

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In part 1 of this series, we have seen that *all behavior is motivated.* Supervisors may control an employee's behavior through the principles of motivation by either augmenting or reducing an employee's means to satisfy his needs. This amounts to either rewarding or punishing the employee. Motivation may come from either inside or outside the person (intrinsic or extrinsic) and be either rewarding or punishing. The most effective motivation to learn or work comes from within the person and is rewarding.

### *Effects of Frustration*

Sometimes an employee who has been doing relatively good work suddenly appears to lose interest or begins to make an unusual number of errors or perhaps his work becomes very poor in other ways. If a supervisor makes the mistake of punishing the employee in some manner before he has determined the correct reasons for this changed behavior, he will certainly do more harm than good and will also, in many cases, find himself reproached by the other employees who may know something about the case which he does not know. This appears to be a fairly easy error to make, so we shall illustrate it with an example.

During a reorganization in a factory employing about three hundred engineers, several sections were drastically cut in personnel. A number of marginal employees were dismissed and others were recommended for transfer within the organization. Jim Allen was one of those who was highly recommended for transfer from an electrical engineering section. Mac Duff, head the chemical laboratory, needed a junior chemist, so he took Jim into the laboratory as a trainee.

Mac was surprised to discover that Jim, who was well recommended, did not seem to be learning his new work and kept returning to the electrical section to talk to his old buddies when he should have been working. Mac let this go for a few weeks to give Jim time to take hold of his new job. When it appeared that Jim was not taking hold and continued to spend time with his old buddies, Mac became enraged and fired

Part 1 — "Scientific Background" appeared in the January 1962 issue of the *Journal.*

Jim, blaming the electrical supervisor for not giving a truthful rating for Jim.

In the exit interview with Jim, the personnel officer learned that Jim felt that he had been misplaced by being transferred from electrical engineering to chemistry which he knew very little about. Moreover, he had been given jobs to do with no explanation or training and he did not understand the work. Under the pressure of this frustration, he found consolation in returning to his former buddies in the electrical department. His former supervisor also re-affirmed that Jim had done well as an electrical engineer and had not been inclined to goldbrick.

The principles of motivation tell us that behavior changes such as Jim's must have causes. A good way to learn these causes is to interview the employee. Mac should have held such an interview, but didn't because he was not trained in interviewing and had no idea of the value to be gained from the interview. As a result, Jim was fired instead of being saved for the company by this transfer.

In Jim's case cited above and in the two "Harbor Engineer" cases discussed in part I, we note that certain frustrating circumstances precipitated the employee's undesirable behavior. Since this is very often the case, it would be very helpful for supervisors to be consciously aware of the signs of frustration so that they can act to find the causes.

We become frustrated when we are thwarted in our efforts to reach a goal. It was frustrating to Jim when his section was cut so that he was temporarily uncertain of his job. Frustration is compounded when there are special reasons why we wish to reach a goal and we are prevented from doing so. Such was Jim's case when he found himself transferred from electrical engineering to the chemical laboratory. Lack of induction and training in the new job were added to Jim's frustrations and so he was unable to function adequately and he tended to return to his old station where he had once felt secure.

## Symptoms of Frustration

How can a supervisor know when an employee's behavior is a symptom of frustration?

In general, there are five main signs of frustration. They are: 1. generalized anxiety, 2. aggression, 3. childish behavior, 4. fixation, and 5. apathy. *Whenever any of these signs appears, the supervisor should be warned to look for the causes.*

It is interesting to note that none of these five types of behavior helps to solve the problem which has caused the frustration. Nevertheless, they are normal behaviors which are common to both animal and man. If the frustration is not too severe, most people will soon return to solving the problem. However, if the frustrating circumstances are very severe or prolonged, we may expect one or more of the five symptoms to remain in evidence.

## Generalized Anxiety

Sometimes when we attempt to control ourselves and avoid scenes, we nonetheless display symptoms of anxiety by the way we blush, tremble or clench our fists. People may become restless, fidget, or appear nervous in many ways. Some obvious signs are nail biting, excessive or rapid gum chewing and smoking. In

one case, it was only possible to detect nervousness in a very even tempered executive by the rate at which he puffed his cigar. Another executive gave evidence of his feelings only by the rising color at the back of his neck. We all probably display some overt symptoms of how we feel inside regardless of how much control we exert. Clearly, these symptoms are not under our direct control. The watchful supervisor soon becomes acquainted with these signs in his associates.

### Aggression

The foreman who aggressively pursues production and the salesman who aggressively follows his sales leads are not reacting to frustration. Intellectual aggressiveness in professional personnel is highly desirable.

What we should like to avoid is the hostile type of aggression which is destructive and which stems from frustration. Just as the signs of anxiety which we all display are not under our conscious control, so are our expressions of aggression and the other symptoms of frustration. Therefore, the supervisor should attempt to view these symptoms objectively as signs of frustration within the individual and NOT as aggression consciously directed at him personally. Such understanding will make it very much easier for the supervisor to handle and control the situation.

Aggression typically appears in two forms. Sometimes it is directed at the object of frustration and at other times it is displaced onto an innocent object or bystander who then becomes the scapegoat. If a machinist breaks a tool bit and he swears at the material or machine, this is direct aggression. If he swears at his foreman or the company, this is displaced aggression.

Supervisors who bawl their men out a great deal are usually reacting to their own personal frustrations which may be generated at home or on the job. Mike Hammer, construction superintendent, was a mouse at home and a grizzly bear at work. He said that the men wouldn't respect him if he let them get away with anything. And, typically, when he and the general foreman got into one of their frequent hassels, they could be heard all over the yard. In this case, Mike appeared to have been frustrated in his need to be boss at home, so he overreacted and became unnecessarily aggressive at work.

Sometimes a work group will pick on one member and blame him for anything that goes wrong. Even though the supervisor feels that this scapegoat is responsible for bringing the group's wrath upon himself, such displaced aggression usually would not occur if the entire group were not reacting to some frustrating circumstance beyond their control. This can be ascertained by removing the scapegoat. If the group turns on someone else, the point is proved and the supervisor should carefully examine both himself and the work situation to find the cause. In one case, the type of leadership exercised by a department head was at the root of the trouble. This supervisor made pretenses of being democratic by practicing some of the outward forms, like holding group meetings. But he made all of the decisions himself and in reality was a benevolent autocrat. This frustrated the decision making and leadership needs of the group members who then displaced their aggression onto a member whom the leader

disliked. Naturally, the department head concluded that the scapegoat got only what he deserved. Finally, understanding of this problem was arrived at through objective survey research by consultants.

### *Childish Behavior, Regression*

Sometimes when people are faced with difficulties they may cry, sulk, have a temper tantrum, swear, kick objects, stamp their feet, pout, dawdle, clown, or do other childish things which attract attention but do not help solve the problem. These are called acts of regression because they are, in effect, returning to childish ways. Tattling and blaming others characterize another group of regressive behaviors. Both children and adults may regress to more infantile modes of behavior when they are frustrated.

Crying and pouting are more likely to occur with women employees. These behaviors may indicate that the person is feeling sorry for herself. Often the supervisor is inclined to feel sorry for the girl who is so afflicted and offers his sympathy. Unfortunately, this only tends to increase her feelings of self-pity and does not help. Crying may increase. The best way to help is to remain calm and understanding without overtly sympathizing. By remaining objective and not criticizing or blaming, but expecting her to behave as an adult, she will be helped to return to normal behavior. Training in non-directive interviewing is especially helpful to the supervisor who is faced with such problems.

Another common form which regression may take involves returning to earlier modes of behavior which meant security to the person. Becoming homesick is an example. Another very common example is returning to the security of sleep. This leads to excessive tardiness and absences. Too much pressure and conflict will cause many people to develop psychosomatic illnesses, sometimes as a way of coping with their feelings of guilt. If we feel guilty about being tired and not being able to get up in the morning, an illness will relieve our guilt because we will have a real physical reason for not getting up. Around final examination time at college, a rash of colds appear and some students who are doing borderline work enter the infirmary.

### *Fixation*

A most peculiar effect of excessive frustration is that it may cause an undesirable behavior to become fixed so that it is repeated over and over in an uncontrolled manner. Thus, putting pressure on a person who is making mistakes may cause the errors to increase. The expression "hitting your head against a brick wall" seems to characterize the person who continues to make the same mistakes and does not appear to be able to learn from experience. Thus, too much frustration tends to prevent people from learning from experience.

When Bill, who worked for the Division of Harbors, was wasting time and goofing off in his work, his supervisor sought to cure this behavior by increasing Bill's resonsibility (See Part 1). Since Bill's behavior was a symptom caused by the fact that his job was already too difficult for him, increasing the scope of his job only increased his frustration. Thus, Bill's work suffered

even more and became loaded with errors. When finally a correct diagnosis was arrived at by the supervisor, he gave Bill jobs commensurate with his ability and trained him where he was weak. Only then did the errors disappear and Bill's work behavior improved.

When an employee makes errors in his work or has developed bad work habits, his supervisor will ordinarily undertake to correct him. If the supervisor uses a negative approach or punishment in an attempt to stop the errors or bad habits, he may only succeed in frustrating the employee. And instead of stopping the errors, they may tend to become fixed. Then the supervisor becomes frustrated and *his* behavior may become fixed so that he is unable to change his own incorrect training methods. Finally giving up in disgust, the supervisor may declare that the employee is just too dumb to learn a simple job.

Clearly, a negative or punishing approach to training is dangerous. It is best to treat errors or bad habits as mistakes which anyone could make. Then the supervisor need not blame the employee and negative criticism which most people feel is punishing does not occur. Neither the employee nor the supervisor becomes frustrated and learning proceeds much more smoothly as a positive approach is used.

## Apathy

Sometimes prolonged or severe frustration leads to various forms of apathy or giving up. Some of the common symptoms are excessive daydreaming, inability to pay attention, withdrawal, indifference and lack of desire to carry on.

Whereas one person may resort to aggression when frustrated another may withdraw. Withdrawal may mean giving up or it may be a form of passive resistance. Passive resistance is really a form of covert aggression which is not the same as giving up and so it is not a form of apathy. This distinction is important because true apathy and aggressive forms of behavior have very different psychological significance. Aggressive behavior indicates a person who is trying. Such a person can be helped. It is much more difficult to help the person who has retreated into fantasy and given up.

Interestingly enough, this analysis applies to groups as well as to individuals. In our studies of work groups in industry we observed that those groups which actively opposed our sensitivity-training efforts (a form of group therapy) usually made more progress than those groups which were apathetic to the process.

Research has also shown that work groups which lodge serious minded criticism and complaints about working conditions tend to be among the highest producers whereas totally non-complaining groups tend to be among the lowest in productivity. By paying careful attention to these complaints, the supervisor is in a position to locate sources of conflict and frustration. Since we have seen how frustration may motivate a number of undesirable behaviors, the supervisor will wish to reduce these sources of frustration on the job to a minimum. Clearly, this is a most important aspect of good supervision.

* * *

*Part 3, "Discipline," will appear in the next issue of the Journal.*

***A Michigan Survey . . .***

# Apprentice Selection Practices In Michigan's Manufacturing Industries

RICHARD H. HAGEMEYER

One of the greatest responsibilities that any company can have in a highly competitive industrial society is the careful selection of its employees. Most companies have developed procedures for determining the most suitable candidates from those available.

Among the jobs to be filled are those of apprentices in the skilled trades. Every year companies place many new apprentices on training programs designed to contribute to the Nation's resources of skilled manpower. In picking these apprentices no exception can be made to sound employment practices.

Selection is based upon certain factors which determine the relative fitness of each applicant. Companies with successful programs have individually established selection practices based on factors usually known only to themselves. Knowledge of what those factors are, and the relative importance assigned to each in the selection of applicants for entry into apprenticeship would be of value to companies contemplating new programs or seeking to improve selection practices in existing apprenticeship programs. Such information, however, is generally not available and when it is, it is usually given in such general terms as to be almost valueless. This study was designed to obtain specific information concerning selection which would be of value to industry and education alike. It was concerned only with those companies engaged in manufacturing as defined by the United States Bureau of Census[1], located within the State of Michigan who maintained an appren-

1. U. S. Bureau of Census, "Area Statistics," Vol. III: U. S. Census of Manufacturers, 1954. Washington, D.C.: U. S. Gov. Printing Office, 1957, p. 121.

DR. RICHARD HAGEMEYER *received the Bachelor's degree from Bowling Green State University, Masters from University of Michigan and earned the Doctorate at Wayne State University in* 1953, *after varied experience in industry and in the public schools, he was made the first administrative head of a new division in the Henry Ford Community College, established to work with companies in metropolitan Detroit on their training and retraining needs. A large and diversified program has been developed with companies in the automotive, chemical, drug, steel, petroleum, and trucking industries.*

ticeship program with a training plan and a formal written agreement between employer and apprentices. The investigation was concerned solely with existing selection practices and not with the operation of the over-all apprenticeship system or the adequacy of existing programs to meet the increasing need for skilled labor in Michigan's industry. Some data incidental to the study revealed several facts which warrant mention.

One important component of modern industrial society is an adequate pool of technically trained and highly skilled craftsmen to complement the contributions of technicians, engineers, scientists, and other professionally trained people. Louis Ruthenburg, one of industry's foremost statesmen, retired chairman of the Board of Servel, Inc., commented on this point. "The skilled worker has always been the pivot on which every industrial operation turns."[2] Mechanization instead of reducing the need for craftsmen actually creates a demand for more. Modern industry, is now, and will be in the future, helplessly dependent upon the highly developed skills and technical knowledge of the craftsmen.

Industry in the United States is characterized by constant change. New methods of manufacturing, new occupations which require additional technical knowledge, and new skills will continue to appear as they have in the past, possibly even in greater numbers and with more rapidity. The economic well-being of an industrial society is dependent upon the ability of its workers to adjust to these changes and the speed with which they can master the new skills.

It would appear necessary to provide skilled workers an opportunity to secure a broader training than that obtained by simply working in a trade. A training which insures experiences in all aspects of an occupation, combined with necessary technical instruction, would enable the craftsman to adapt more readily to changing conditions and new occupational requirements. The apprenticeship system of education provides this broader background. "The skilled worker who is a product of apprenticeship training has been prepared for an occupation rather than a specific job and is likely to be better equipped to meet the challenges of new problems than is the worker who "picks up" his skills."[3]

## Training Lags Need

Authorities from labor, management, and government agree that there is a shortage of skilled labor in the United States and that technical changes will compound the scarcity. None of the States, however, are training apprentices in sufficient numbers even to replace losses due to deaths and retirements. Michigan, one of the major industrial States making most extensive use of skilled manpower, ranks eighteenth in the ratio of registered apprentices employed. Only 3.59 per cent of the small and 12.91 per cent of the large com-

2. Louis Ruthenburg, "The Crisis in Apprentice Training," *Personnel*, Vol. XXXVII, July-August, 1959, p. 28.

3. National Manpower Council, "A Policy for Skilled Manpower," New York: Columbia University Press, 1954, p. 12.

panies in the State maintained apprenticeship training programs. Obviously this record must be improved if the increased needs due to technical advances are to be met.

*Source of Data.* Lists of those Michigan companies having registered programs plus those maintaining non-registered formal apprenticeship training were obtained from representatives of the Bureau of Apprenticeship and Training. A systematic sample was drawn from these lists using a sampling interval of three with a random start. An instrument was sent to the representatives of each company in the sample responsible for apprentice selection. Data were received from 86 per cent of the small and 91 per cent of the large companies in the sample.

*Personal Factors.* These factors were listed on a four-point rating scale and the respondent was asked to check the column which best described the importance assigned to that factor by company policy. Table I contains the tabulated returns, expressed in percentages, consolidated into two columns for this summary. Extreme differences were apparent in various regions in the State but these do not appear in this composite tabulation since extremes in one area tended to be balanced by an opposite position in another region or by the overwhelming number of companies that reported a more moderate policy.

*Educational Qualifications.* Data were gathered concerning consideration given for educational achievement and importance attached to various typical high

TABLE I

DEGREE TO WHICH PERSONAL FACTORS WERE CONSIDERED THROUGHOUT MICHIGAN

| *Factors Considered* | *Size of Companies** | *Considered of Little or No Importance* | *Considered Important or Very Important* |
|---|---|---|---|
| | | *Responses Expressed in Per Cent* | |
| Seniority in company | S | 86 | 14 |
| | L | 56 | 44 |
| Possession of manipulative skills needed to be immediately productive on the job | S | 30 | 70 |
| | L | 49 | 51 |
| Hobbies which indicate interest and aptitude in mechanical pursuits | S | 31 | 69 |
| | L | 24 | 76 |
| Member of applicant's family is an employee of the company | S | 74 | 26 |
| | L | 66 | 34 |
| Personal recommendations from last school attended | S | 36 | 64 |
| | L | 47 | 53 |
| Previous employer'(s) recommendations | S | 23 | 77 |
| | L | 22 | 78 |
| Recommendations from friends or acquaintances of applicant | S | 40 | 60 |
| | L | 56 | 44 |

*Code "S" represents small companies (1-100 employees); "L" represents large companies (101 and over employees).

school subjects. Procedures for recording company policies were identical with those followed in reporting the importance attached to the different personal factors. A composite tabulation for the State may be found in Table II. Again some of the extreme differences in company policies from the various areas do not appear in the State profile.

*Maximum Age Limits for Acceptance into Apprenticeship.* Historically, the system of apprenticeship has been the means for training young men to enter the skilled labor force. It has been a common European practice for the young to serve an apprenticeship period between the ages of fourteen and twenty-one. For all practical purposes, the minimum age in Michigan is eighteen. Data gathered in this study would indicate that most companies accept applicants considerably older, especially seniority employees.

*Importance Attached to Selected Factors During Probationary Period.* Eighty-six per cent of the small and 93 per cent of the large manufacturing companies in Michigan required a probationary period of employment. The length of the period varied from 500 to 2000 hours. Obviously companies considered this trial period to be an important aspect of selection during which the apprentice's abilities and potential can be observed

TABLE II

DEGREE TO WHICH EDUCATIONAL FACTORS WERE CONSIDERED THROUGHOUT MICHIGAN

| *Factors Considered* | *Size of Companies** | *Considered of Little or No Importance* | *Considered Important or Very Important* |
|---|---|---|---|
| | | *Responses Expressed in Per Cent* | |
| High School graduation | S | 10 | 90 |
| | L | 2 | 98 |
| Transcript of high school grades | S | 27 | 73 |
| | L | 14 | 86 |
| Record of having any of the following in school. | | | |
| Algebra | S | 19 | 81 |
| | L | 15 | 85 |
| Geometry | S | 17 | 83 |
| | L | 14 | 86 |
| Shop Mathematics | S | 8 | 92 |
| | L | 17 | 83 |
| English | S | 58 | 42 |
| | L | 37 | 63 |
| Industrial Arts | S | 18 | 82 |
| | L | 24 | 76 |
| Vocational-Industrial Education | S | 10 | 90 |
| | L | 27 | 73 |
| Social Studies | S | 76 | 24 |
| | L | 71 | 29 |

*Code "S" represents small companies (1-100 employees); "L" represents large companies (101 and over employees).

and evaluated. Each company that required a probationary period of employment was asked to rank in order of importance five selected factors considered during this period, i.e. one, most important; two, next in importance; etc. Interest in the trade and possession of the needed manipulative skills to be productive were consistently ranked high in importance.

*Use of Tests in Selection.* Seventy-five per cent of the large and 32 per cent of the small companies used tests in selecting apprentices. Responses indicated that they considered test results of great importance. Table III contains the minimum raw scores that an applicant must make to be considered as a qualified applicant. It should be noted that the score listed under column head-

TABLE III

MEAN MINIMUM SCORES REQUIRED OF APPRENTICE APPLICANTS ON STANDARDIZED TESTS; TEST NORMS FOR IDENTIFIED GROUPS

| *Tests* | *Apprentice Mean Minimum Score* | *Identified Groups 50th Percentile* |
|---|---|---|
| Intelligence | | |
| Wonderlic Personnel Test | | |
| Michigan's apprentices | 22* | |
| Test norms | | |
| Students, 11th and 12th grades | | 24.4 |
| Students, 1 year college | | 28.92 |
| California Test of Mental Maturity (short form) | | |
| Michigan's apprentices | Lang 27 | |
| | Non-Lang 37 | |
| Test norms | | |
| Age 16 and older | | Lang 27-30 |
| College freshmen | | Non-Lang 37-39 |
| | | Lang 37-39 |
| | | Non-Lang 43-44 |
| S. R. A Verbal Mental Ability | | |
| Michigan's apprentices | L 25 | |
| | Q 18 | |
| Test norms | | |
| 17 years of age or over | | L 25 |
| | | Q 18 |
| Mechanical Abilities | | |
| Bennett's Test of Mechanical Comprehension (form AA) | | |
| Michigan's apprentices | 36 | |
| Test norms | | |
| Apprentice training | | 38 |
| Technical courses | | 42 |
| Males, 12th grade | | 39 |
| Technical high school seniors | | 40 |

*Age allowance for ages over 29 years.

(Continued on page 34)

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TABLE III (Continued)

| *Tests* | *Apprentice Mean Minimum Score* | *Identified Groups 50th Percentile* |
|---|---|---|
| Revised Minnesota Paper Form Board | | |
| Michigan's apprentices | 42 | |
| Test norms | | |
| Miscellaneous male factory workers | | 38 |
| Army sample World War II (male) | | 41 |
| Purdue Mechanical Adaptability Test (forms A, B) | | |
| Michigan's apprentices | 15 | |
| Test norms | | |
| Male employees and hourly applicants | | 10 |
| Male applicants for factory work | | 14 |
| Foremen and supervisory personnel | | 18 |
| S. R. A. Mechanical Aptitudes | | |
| Michigan's apprentices | 30 | |
| Test norms | | |
| High school graduates attending trade school | | 32 |
| Mathematics | | |
| Purdue Industrial Mathematics | | |
| Michigan's apprentices | 15 | |
| Test norms | | |
| Army Specialized Training Corp. | | 20 |
| Vocational trade school students | | 13 |
| General Motors 300 (simple arithmetic) | | |
| Michigan's apprentices | 20 | |
| Test norms | | |
| High school graduates | | 23 |

ing "Apprentice Mean Minimum Score" represents the average *minimum* raw score that must be achieved to warrant consideration as an apprentice in these companies. The scores listed under the heading "Other Identified Groups" represents *median* score or scores falling on the 50th percentile.

Some companies have established different minimum raw scores for some of the trades. Obviously this has been done because experience has shown that various trades require different levels of skills and aptitudes. Space does not permit the inclusion of these data. Some companies submitted examples of their selection procedures, including point system valuation, etc. Here again space does not permit the inclusion of any of these examples.

## Conclusions, Observations, Implications, and Recommendations

Conclusion 1:

Neither seniority in the company nor family relationship in the trade were prime requisites to insure consideration as an applicant for apprenticeship training.

Conclusion 2:

Possession of the manipulative skills needed to be immediately productive on

the job was considered important, especially if the applicant applied for an apprenticeship in a small company. Evidence of a good work experience record was also considered a valuable asset for an apprenticeship applicant.

Implication: Society is faced with a challenge to provide opportunities for those individuals who wish to become apprentices, to develop those skills needed to be selected for apprenticeship training.

Conclusion 3:

Hobbies which reveal interest and aptitude in mechanical things were considered important in the selection of one applicant over another.

Conclusion 4:

Companies in most areas of Michigan considered recommendations furnished by an applicant's school important in apprentice selection.

Recommendation: Efforts should be made to develop closer liaison between school systems and local industry. A rapport, similar to that existing between high schools and colleges, would contribute to better understanding and a pooling of information advantageous for youth.

Conclusion 5:

Recommendations from previous employers were considered very important by both large and small companies in selecting apprentices.

Conclusion 6:

Recommendations from friends or acquaintances were not considered important by the large manufacturing companies. Some small companies, however, considered such recommendations important.

Observation: It is a traditional practice in all levels of society to help friends or friends' sons get started in an occupation. Such a practice, however, can be detrimental to the individual, the employer, and to the entire training program unless a sufficient amount of evidence regarding the applicant's interest, capacity, and potential supports the recommendation.

Conclusion 7:

Although high school graduation was practically a requirement to being selected as an apprentice by the manufacturing companies in Michigan, a record showing an applicant's relative success in school, as evidenced by his grades, was considered of lesser importance.

Observation: The development of a closer relationship between industry and those responsible for the previous educational experiences of the prospective apprenticeship applicant should result in better selection. Industry would be more aware and interested in each applicant's accumulated scholastic record. Guidance counselors and teachers would become as well informed about apprenticeship entrance requirements as they are on the entrance requirements for colleges and universities.

Conclusion 8:

High school students planning to apply for an apprenticeship in Michigan's manufacturing industries should be encouraged to take courses in algebra, geometry, shop mathematics, and industrial education while in school.

Observation: Assuming all applicants possess, these necessary educational requirements, selection of one applicant in preference to another appears to be based on various personal factors, test results, and the performance and interest displayed during the probationary period.

Implication: An applicant without a background in mathematics and/or industrial education has less chance of being selected for apprenticeship training.

Conclusion 9:

Opportunities to obtain apprenticeship training are no longer the exclusive province of youth in Michigan's manufacturing industries. Many companies accept applicants in their late twenties and will transfer even older seniority employees into the training program—providing they possess the capabilities and interest, and have compiled a good work record.

Conclusion 10:

Michigan's manufacturing companies generally used a probationary period as the final phase of the selection procedure.

Recommendation: The process of selection should not be regarded as completed until the end of the probationary period.

Conclusion 11:

Standardized tests were used by many large companies as an initial screening device. Most small companies, however, make selections without the benefit of knowing an applicant's potential as indicated by scores on mechanical aptitude, mental ability, and specific skill tests.

Conclusion 12:

Companies that reported the use of standardized tests in their selection procedures have established minimum standards which would discredit the thesis that individuals who are mentally unable to pursue other occupations should learn a trade.

Observation: Selection should be based upon the thesis that probable success in an apprenticeship program can be measured by an evaluation of an individual's mechanical aptitude, mental ability, and interest; coupled with evidence of determination and effort to obtain the background necessary to gain admission into an apprentice training program. Improvements in selection procedures would reserve apprenticeship opportunities for persons possessing the necessary qualifications and the desire to become craftsmen.

Conclusion 13:

Michigan's manufacturing companies, with a few exceptions, were not facing up to their responsibilities for providing trained craftsmen to replace those now in their employ who will be lost to the trade by death and retirement.

Conclusion 14:

Any large increase in the number of apprentices being trained in Michigan must be achieved by the development of programs in those companies not presently maintaining an apprenticeship program.

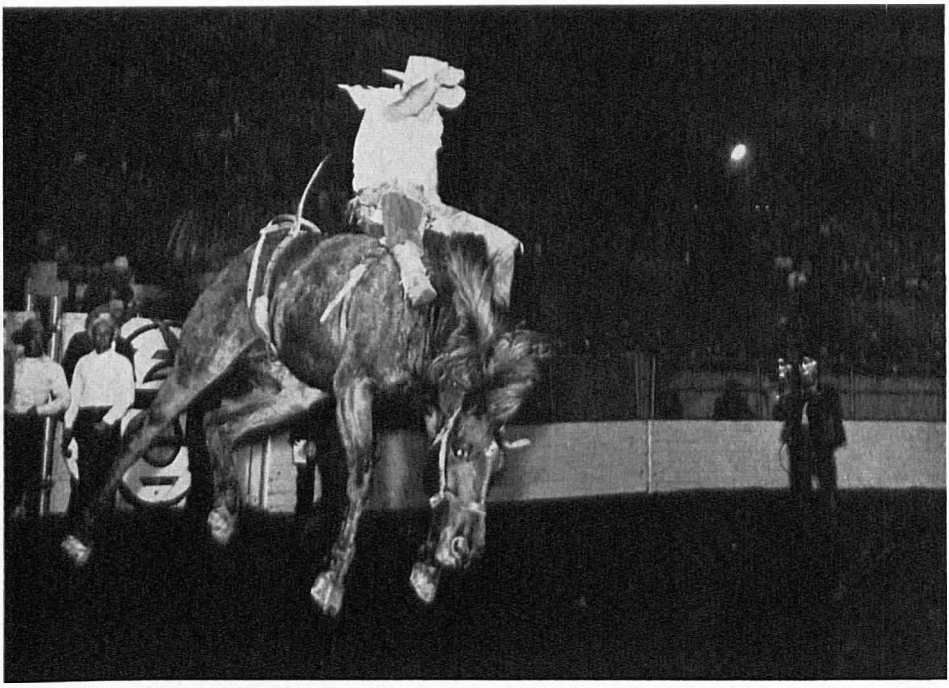
Observation: The statement was made that the skilled labor situation requires a substantial increase in the number of apprentice training programs. It is important, however, that new pro-

grams be established only in those companies able to provide experiences in all aspects of the trade and that these programs be genuine training programs, not pseudo-apprenticeship programs exploiting individuals as cheap labor under the guise of apprenticeship. Although it might be argued that some training is better than none at all, this philosophy is dangerous in that there is no substitute for quality. The false sense of security which could come with increased numbers of inferior programs would be detrimental to industries' expansion plans predicated upon having a well-trained work force.

Recommendation: Each company should examine its present skilled work force in the light of skill levels, age distribution of its craftsmen, and future needs in order to make a realistic appraisal of the need for apprenticeship training, fully aware of the fact that it takes years for an individual to develop into a good craftsman.

Conclusion 15:

United States industries can no longer depend upon the immigration of highly skilled craftsmen from Europe to meet the increasing need for skilled manpower.



EXTRA-CURRICULAR EVENTS AT MAY ASTD MEETING

Action like this will be the rule at the Texas rodeo and barbeque which will be the featured special event on Wednesday evening, May 16, at a dude ranch near Dallas during the 18th Annual ASTD Conference.