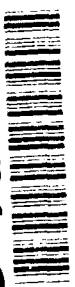


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CONSTRUCTION WORKER MOTIVATION
THE MEANS TO IMPROVING WORKER PRODUCTIVITY

BY

EDUARD GONZALEZ

91-10906



A REPORT PRESENTED TO THE GRADUATE COMMITTEE
OF THE DEPARTMENT OF CIVIL ENGINEERING IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF ENGINEERING

UNIVERSITY OF FLORIDA

Summer 1991

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DEDICATION

This work is dedicated in loving memory of Sofia C Pizarro, my grandmother, who passed-on on January 15, 1991. Her continuous support, forceful presence, and loving care was the major driving force that led me to continue my education to the point I have now achieved. She had the great wisdom and foresight to realize that a quality education was the greatest and most plentiful gift she could pass on.

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CHAPTER ONE INTRODUCTION

1.1 Background

James O'Toole, author of *Making America Work*,¹ identifies three basic sources of productivity: labor (the mental and physical efforts of workers), management (the activities of planning, coordinating, motivating, and controlling), and technology (the contribution of machines transferring energy into useful work).² The analysis of any construction project will clearly show that the construction manager is seeking to manage resources effectively and efficiently in order to complete the project. The success with which the construction manager accomplishes that goal is highly dependent upon certain skills that he exhibits. James O'toole has spelled out those activities that embrace management. It is important to note that the selection of an individual for a management position based on construction competence does not guarantee that the individual will be the most effective. The manager often enters the management position with some degree of planning and coordinating skills. Yet, many managers often lack an understanding or appreciation of human behavior and motivation. Those managers that seek to understand human behavior and apply the principles of motivation theory to motivating the construction worker can and nearly always benefit through improved productivity.

Understanding motivation theory and being able to apply this theory to the labor force plays an important role in increasing productivity. Japan's productivity growth has been considerably greater than that of the United States.² The Japanese have outperformed their American counterparts in nearly every area of industry. American managers may allege that the Japanese culture is the basis for their success. There may be some truth to that, but the better answer is that the Japanese among other things use effective motivation techniques.³ American managers should not view the cultural differences as the key ingredient to improved productivity stemming from successful motivators. The American culture is not the root of the evil. The blame should be placed on managerial policies and practices that were compatible with American culture in the 1940s and 1960s.⁴ Today's manager must find and implement practices that can motivate the modern day worker. To accomplish this task, the manager must have an understanding of the nature of man's present day needs and desires.

1.2 Overview of Report

Construction projects present the construction manager with many challenges. Among them is the coordination of material, equipment, finances, and labor that must come together to produce the desired output. The labor, better known as human beings, is the most essential resource available to the construction manager and the most complex resource with which to deal. Therefore, the construction

manager needs to understand the construction worker. The construction manager also needs to make sure that supervisors at all levels are sufficiently skilled in handling subordinates, that they can satisfy the craftsman's need for sense of achievement, the craftsman's wish to be wanted, and his or her need to account for something. It is through an understanding of the concepts of motivation that the construction manager can accomplish these objectives. The focus of this report centers on how to motivate the construction worker toward increased productivity. This most vital resource, the construction worker, warrants an in-depth study of the reasons for why he does what he does, how management decisions influence his actions, the environmental factors that affect his behavior, and what management can and must do to motivate the worker toward increased productivity.

This topic should be of great concern to the prudent construction manager. Management employee relations have changed considerably over the past hundred years, especially following the legislation of the equal rights act, the equal employment opportunity act and other current trends in American progress. Today, the construction worker is a more intelligent individual with a greater degree of awareness. The construction manager cannot rely on an authoritarian approach to management. The motivation techniques employed by the construction manager are the means by which today's construction worker can be steered toward productive performance.

The topic will be approached by first describing and examining individual behavior. The reasons why people react to a situation and the manner in which they do things are to a large extent based on what they have learned, their perceptions, their personalities, abilities and needs. Needs are the basis for the development of motivation theories. But, before understanding and applying principles of motivation, the individual's behavioral pattern needs to be considered.

Following the chapter on individual behavior, motivation theories will be explored. This chapter will build on the understanding of human behavior. Motivation interacts with individual behavior by providing the stimuli that influence behavior. The chapter will introduce the motivation performance cycle. This cycle will serve as the transportation means by which the motivation theories are introduced and explained.

The next chapter will provide an examination of motivators and demotivators. The use of money as a motivator will be discussed. Does money motivate? The chapter also will explain the merit of providing goals, feedback, participative management, recognition, and job security.

Chapter five will examine the factors that are unique to construction and will elaborate on how they impact the motivation philosophy. The chapter will address how motivation skills can be

successfully applied to improve productivity of construction workers. Motivation will work if construction managers understand the concepts and are creative in the development and implementation of motivation programs.

The final chapter provides a brief summation of the conclusions and recommendations. A list of actions that construction managers should take to remove project demotivators and implement motivation programs is provided. The final paragraphs introduce items for future study. The report, although thorough, can not cover all aspects of motivation in the construction industry. Future study is required to address some of the issues related to motivation.

CHAPTER TWO INDIVIDUAL BEHAVIOR

2.1 Why Individual Behavior is Important To Motivation

The construction manager's goal, when he employs a stimuli directed toward the construction worker or workers, is to direct the construction worker's or workers' behavior. Understanding the individual's behavior is paramount to using the proper motivation techniques when attempting to influence the individual's behavior. Note that the first sentence used the word stimuli and not motivation technique. The construction manager does not always use a stimulus that can be defined as a motivator. Not all stimuli can be classified as motivators. Stimuli can direct behavior for a short term, but, stimuli that are not sensitive to the individual's behavior can produce results that may be short lived and, with time, may even produce negative results. Only motivators, when properly applied, stand the best chance of producing the desired behavior with favorable and lasting results. The discussion of motivation theory will be delayed until the next chapter. This chapter is devoted to a presentation of behavioral theory.

Human behavior affects the success or failure of management's attempts to increase productivity improvement. Motivation is tied in with behavior; the proper motivational technique must be used with the given behavioral pattern to achieve the desired action. Different people are motivated by different methods. Understanding

why a person behaves in a certain manner can help the manager decide which motivation technique would best accomplish the manager's goal. If nothing else, it will help the manager to avoid using stimuli that have an overall negative impact. It is therefore important to address and explain the theory of individual behavior.

2.2 Factors That Influence Behavior

Perception, personality, learning, ability, and needs are human factors that affect behavior. The reasons, to a large extent, why people react differently to motivation techniques is because people differ in the aforementioned factors. In terms of perception, a person will react based on their pre-established biases, cultural experiences and experiences in early life. What a person has learned also can have a partial influence on the person's behavior. What an individual has learned formulates long lasting attitudes within that individual. These attitudes can cause cooperation in a work environment, but, also may cause the individual to reject certain working conditions. Another example is the fact that individuals, from early childhood, have learned that being late for work will result in disciplinary action. The result is that people are motivated to come to work on time. Personality is often the first thought a manager considers when evaluating an employee's behavior. Often, the manager can be heard to describe individuals as cooperative, ambitious, dedicated, honest, hard working, lazy, dominant, attentive, etc. People also differ in their abilities.

Within the construction field this is typical. There are different traits, and within each trait there are varying degrees of skill. Among other things, individuals with great strength, dexterity, technical competency and adaptability can gain an advantage in the industry. People also differ in their needs. Needs are physical and psychological. Needs will be discussed in the next chapter.

2.3 Individual Perception

The way in which a worker reacts to a stimulus is in part a result of what the worker brings along from his or her past experiences. All people tend to stereotype other people according to age, sex, race or national origin. It is not the intent of this report to justify such biases. It is important however to acknowledge that such biases do exist. The perception process can help the manager to quickly deduce, with varying degrees of accuracy, the important characteristics of a person and the motivators that can work. Perceptions also determine the way an individual expects things to happen or the way an individual expects other people to act. This is especially important with the construction worker who may have some preconceived notions of how management will relate to and treat labor. If the construction worker does not see management as fair and supportive, any incentives or awards that may be offered by management may not produce the desired effect.

2.3.1 Factors That Influence Perception

A partial list of the things that influence perception includes: a person's needs, stress, education, background, values, position and group pressure.⁵

2.3.1.1 Needs

An individual's needs can affect his or her perceptions. A construction worker who has been out of work for several months and believes that the economy is in a recession may accept a job at a lesser pay than he may have accepted during a period of construction boom. The worker perceives the economy as faltering, and in order to work, the worker will settle for less pay.

2.3.1.2 Stress

Individuals under stress often are less objective in their perception of the ongoing events about them. With regards to construction workers, they may feel that management is pressuring them to accelerate their productivity and yet, the tools, equipment, or material to complete the task are inadequate or unavailable. The workers may perceive that management is insensitive to their needs or has little idea of what problems exist on the job site.

2.3.1.3 Education, Background and Values

Based on education, background, and values the individual may learn to associate certain groups with certain behaviors. Construction workers may characterize managers as members of a management group that places project goals ahead of individual well being. The workers, because of their background and education, may have a subconscious resentment against management. They may view management as typically being pompous and unapproachable. The construction manager should be aware when such an attitude exist and insure that the stimuli provided do not accentuate such an attitude. The manager must act in a manner that will not make him or her seem insensitive, snobbish, insincere, or pretentious

2.3.1.4 Position

An individual's position can influence how he or she perceives the organization. Researchers have found that newly promoted foremen view the company as a better place to work compared with other companies.⁶ The study further evaluated foremen who, because of cutbacks, had returned to the position of lower level workers. They again began to perceive the company from the point of view of workers. They no longer had positive perceptions of management.

2.3.1.5 Group Pressure

Groups can have a very strong influence on a person's behavior. Human beings for the most part seek to be accepted by their peers. In some situations a worker may "slack off" so as not to be shunned by others in the work group. Unions have a very strong position in creating such an atmosphere. In Japan the culture is such that individuals hold work paramount and will never forsake their work because they will "lose face" with their colleagues.

The manager should be sensitive to the fact that workers may not perceive things as he or she does. This can be noted in the construction worker's resistance to technological advancement. The manager may view the innovation as a means to improved productivity while the construction worker will view it as a threat to his or her job security. Management may view rewards as attractive incentives, but if construction workers distrust management's motives, such rewards may have little impact on productivity.

2.4 Personality

The unique quality that represents an individual is referred to as personality. Personality theorist, Salvatore Maddi, provides the following definition of personality:

"Personality is a stable set of characteristics and tendencies that determine those commonalities and differences in the psychological behavior (thoughts, feelings and actions) of people that have continuity in time and that may not be easily understood as the sole result of the social and biological pressures of the moment."⁷

The definition contains several important ideas. The definition presents the idea that personality is a determinant of behavior all the time.⁸ Second, every person is in certain ways, like all other people, like some other people and like no other person.⁹ This is important for the construction manager to understand. Construction workers, in many ways, are a breed of people with very similar personalities. Yet, it also should be understood that each individual worker is like no other and has his or her own unique characteristics. In realizing this, the manager should understand that each employee may not react the same way to a certain incentive program. The last idea presented in Maddi's definition is that an individual's personality is somewhat undeviating and often cannot be changed suddenly. One last note is to shed light on the word "action" that is enveloped within Maddi's definition. It is the individual's actions that the manager seeks to direct, and therefore the manager should have some appreciation of the phenomena that directs individual actions.

2.4.1 Factors That Shape Personality

Like perception there are many factors that determine an individual's personality. The factors can be grouped into the following categories: heredity, culture, family, group membership and life experiences. A few of these factors, group membership and life experiences, are also common to the development of perceptions. It can therefore be concluded that how an individual develops a perception and what an individual perceives from any given situation is tied in with the individual's personality. It is important to understand that individuals are different and that the factors mentioned shape that difference. If the manager can gain insight into these factors, he or she may be able to determine the behavioral pattern of the employees and consequently identify suitable stimuli that will achieve motivation.

2.4.1.1 Heredity

Heredity determines physique, eye color, hair color, muscular characteristics, health characteristics and so on. An individual's physical characteristics can have an effect on his or her personality. This personality can be molded by the perceptions that others develop about him or her because of his or her physical characteristics. Individual abilities might be limited by those perceptions because the individual is not provided with the opportunity to reach his or her full potential.

2.4.1.2 Culture

Culture defines how the different roles necessary to life in that society are to be performed.¹⁰ Earlier it was stated that the Japanese culture may be believed to be the reason for Japan's success as an industrial nation. One marked difference between American culture and Japanese Culture is that, American culture rewards people for being independent and competitive; Japanese culture rewards individuals for being cooperative and oriented toward group needs.¹¹ The merits of these differing attitudes will be presented in later chapters. Apparently culture plays a distinctive role. Still, again, it is necessary to note that culture is but one facet of a very complex subject matter. Additionally, not all individuals respond to the influence of their culture equally.

2.4.1.3 Family

Families play an important role in the development of an individual's personality. Parents are role models throughout the development of the individual. The influencing factors that the parents provide include: social economic level, family size, race, family religion, geographical location, parents education and so on. An individual's likes and dislikes can be formulated through the influence of the parents, brothers, sisters, grandparents, aunts and uncles. Relating this to construction workers, an individual who was an only child may seek to work

independently. An individual raised in a poor family setting may develop a greater appreciation for economizing.

2.4.1.4 Group Membership

Social and group experiences continue to influence an individual's behavior beyond that of the family group. It is important for the manager to recognize the group surroundings of his employees. One very powerful group is the union. The individual's behavior may be dictated by the group. People have a desire to belong. For some, this desire is stronger than for others. If the manager uses stimuli that alienate individuals from the group motivation will most certainly not be achieved.

2.4.1.5 Life Experiences

The experiences of each individual are unique to that individual. Where he or she has been, who he or she has interacted with, and what conditions he or she has been subjected to all shape the personality. Life experiences and circumstances occur in the context of the other mentioned categories and can be calculated as a product of the other categories.

Knowledge of these factors helps the manager to develop an understanding of the individual. Because the individual comes from a close knit family, the individual's needs may be predominantly family oriented. The individual seeks need satisfiers that address family

security or the ability to spend quality time with the family. For this individual, requiring him to work night shift while providing more than adequate financial compensation may not yield the desired productivity. If the individual is easily persuaded or influenced by his co-workers, he or she may react more positively to stimuli that help him or her to maintain good standing with the group. If the individual has been exposed to projects in which innovation has often lead to less work availability, this individual may view new ideas as job threatening. The individual may overlook the fact that the new ideas simply provide him or her with a way of simplifying his or her job. If the construction manager can somehow assess these factors, the manager may be capable of correctly identifying the stimuli that will more than likely motivate the individual.

2.4.2 General Personality Traits

Dr. D. W. Fiske performed a study on personality traits in which more than twenty individual personality traits were gathered and combined them into five general traits. Table 2-1 represents the five general personality traits. The construction manager can use this table in an effort to identify a worker's personality. While the table is not all-encompassing it does provide a starting point for the manager that as unfamiliar with human behavior. For example, the individual that fits the social adaptability trait is more likely to accept innovation. This individual also is most probably motivated by the challenge of the job and the opportunity to develop close

Table 2-1 Five General Personality Traits

Individual Traits	General Traits
Cheerful vs. depressed; talkative vs. silent, introspective; adventurous vs. cautious; adaptable vs. rigid; placid vs. worrying, anxious	Social adaptability
Unshakable vs. easily upset; self-sufficient vs. dependent; placid vs. worrying, anxious; limited overt emotional expression vs. marked overt emotional expression	Emotional control
Readiness to cooperate vs. obstructiveness; serious vs. frivolous; trustful vs. suspicious; good natured, easy going vs. self-centered, selfish; conscientious vs. not conscientious	Conformity
Broad interest vs. narrow interest; independent minded vs. dependent minded; imaginative vs. unimaginative	Inquiring intellect
Assertive vs. submissive; talkative vs. silent, introspective; marked overt interest in opposite sex vs. slight overt interest in opposite sex; frank, expressive vs. secretive, reserved	Confident self-expression

Source: D. W. Fiske, Consistency of Factorial Structures of Personality Ratings from Different Sources, Journal of Abnormal and Social Psychology, Vol. 44, 1949, p. 329-344

friendships with co-workers. The individual that fits the conformity trait is more likely to conform to nearly any job condition. Yet, to motivate this individual, the manager should solicit his or her suggestions and ideas for improving the project.

2.5 Individual Abilities

Abilities are an integral part of a person's personality. People's personality is sometimes defined by their abilities. In the construction field, an individual's abilities are crucial to his or her role. It is important that the construction manager realize this very simple fact. The most highly motivated person will be unable to accomplish the desired objective if he or she lacks the ability to perform the task required to meet the objective. Types of abilities include: mental abilities, mechanical abilities, psychomotor abilities and physical abilities. Mental abilities include intelligence, inductive reasoning and verbal comprehension. Mechanical abilities involve understanding the aspects of mechanical jobs. Psychomotor abilities include such things as dexterity, manipulative ability, eye and hand coordination, and motor ability. Physical abilities include strength, endurance and adaptability. The construction worker is required to exhibit these abilities to varying degrees under varying circumstances. Many abilities can be gained or enhanced through education and training. The construction manager should strive to take advantage of training opportunities when practical. The cost of training and the time must be considered with regards to the long range benefits. The benefits will be greater

than just increased productivity. Providing training also leads to increased motivation.

2.6 Learning

Learning can be defined as the process by which an individual changes his or her behavior as a result of experience.¹² In terms of construction workers, as workers learn about their job, they learn what sorts of behaviors the manager prefers and similarly what cannot be done. Slowly over time this learning shapes perceptions, personality and skills. The effects of the experience are revealed through the worker's actions. The manager needs to be aware that management's actions and the programs in place are scrutinized by workers. If the manager wishes to direct behavior toward productive performance, he or she must use each and every opportunity to provide the workers with experiences that are positive. Similarly, if any experiences are negative, management must take quick and decisive action to correct such situations.

Learning can be grouped into two schools of thought: associative and cognitive. In the associative school of thought it is believed that learning results from habit formation. An example would be the belief concerning the association between a raise and working harder. When a person is constantly influenced by a stimuli there is a response that will become habit. But, humans possess factors such as reasoning, understanding and insight. The second school of thought,

cognitive school, emphasizes the importance of the thinking process in learning. It is this thought that best explains those behavior patterns that cannot be explained in terms of habit formation. The manager should fully recognize the fact that workers are thinking people who can logically dissect a stimuli and react differently than what would be expected. He should bear in mind that the same stimuli may not always result in the same response or habit.

2.7 Behavior modification

Understanding the human elements that blend together to determine a person's behavior can serve as the foundation for influencing behavior toward the required objective. The last element discussed, learning, serves to tie together all the other elements. Behavior can be modified through learning. A manager may seek to achieve the desired behavior through reinforcement. Reinforcement and motivation are not synonymous, still, motivational techniques do serve to reinforce desired behavior. There are four types of reinforcement: positive reinforcement, negative reinforcement, extinction and punishment.

Positive reinforcement and negative reinforcement focus on reinforcing the desired behavior. Positive reinforcement addresses the desired behavior through items such as praise or raises. Negative reinforcement applies itself as a negative consequence that the employee avoids when he produces the desired behavior. Negative

reinforcement serves as an intimidator that overshadows the worker. The workers avoid items such as reprimand, harassment, relocation and deduction of pay.

Extinction and punishment focus on undesired behavior. With extinction, positive reinforcement is withheld. Some examples are withholding promotions, pay increases, and bonuses. The worker realizes that the undesired behavior has eliminated his or her opportunity to receive many benefits. Punishment is the least desired method of modifying behavior. Extinction and punishment unlike positive and negative reinforcement focus on eliminating the undesired behavior, but are not much use in teaching the employee the correct or desired behavior. Table 2-2 summarizes the four types of reinforcement. The manager can use table 2-2 as a quick reference to makeup company policy so that the company provides only positive reinforcement.

2.8 Practicing Positive Reinforcement

Positive Reinforcement is being used successfully to improve employee performance. Positive reinforcement often is better than any of the other behavior modification techniques. It is more productive for workers to signify the positive elements of their job than to dwell on the negative. When the positive aspects override the negative aspects the perception typically developed is that management is concerned for the individual. On the other hand, if

Table 2-2 Types of Reinforcement

Stimulus	Work Behavior	Possible Supervisory Action	Type of Reinforcement
Nursing supervisor's instruction to record fluid intake on patient records	1. Consistently records intake correctly	1. Praise employee and recommend a high increase in pay	Positive Reinforcement
		2. Avoids harassing the employee and do not reprimand	Negative Reinforcement (Avoidance)
	2. Consistently fails to record intake correctly	3. Withhold rebuke and thus positive consequence	Extinction
		4. Reprimand and harass employee	Punishment

Source: John Ivancevich, Andrew Szilagyi, Jr., and Marc Wallace, Jr., Organizational Behavior and Performance, Goodyear, Santa Monica, Ca., 1977, p. 84

management's tendency is to highlight the punishment for undesired behavior, workers will often become discontented with their jobs.

Positive reinforcement must be preceded by an understanding of the job scope. Workers need to understand the scope of the project and the desired objective. The manager therefore needs to provide proper direction, disseminate policy and delineate the desired objectives. It relates back to the idea of learning. Once the employee knows and understands what is required, he can work toward achieving the desired objective. But, if there exist a breakdown in communications, it will be difficult to achieve the desired behavior. Besides good communications, feedback should be provided as the worker proceeds through the work process. Providing positive reinforcement as a worker reaches each plateau channels his action toward reaching the desired behavior.

2.9 Behavior Study Summary

Before advancing on to a discussion of motivation theory and its applications, it is necessary to recap individual behavior and signify its link to motivation. First, to motivate a person toward accomplishing a desired objective is to influence that person's behavior. Individuals, however are different and therefore may react differently to different stimuli. The reason individuals are different to a large extent is that individuals have differing perceptions, personality, abilities and learning capacity.

Individual needs can be discerned from the individual's perception, personality, or abilities. Perceptions distort and screen the way a person sees the world. Stress, needs, values, organizational role and group pressure influence perceptions. Personality is the set of individual characteristics that cannot be easily altered. Personality is a never ending evolutionary process that is an outgrowth of heredity, culture, family, group membership and life experiences. Abilities involve intelligence and dexterity and is integral to personality. Abilities play a major role in performance because despite the motivation, unless the individual has the ability to do the job, he or she will not perform well. Learning is a key ingredient to influencing and altering behavior. Learning and behavior modification go hand in hand. Of the various ways to modify behavior, positive reinforcement is agreed upon to achieve the best results.

The study of motivation is best pursued when the concepts of behavior are understood. Applied Motivation seeks to direct behavior. Motivation is centered around needs. It can be stated that behavior is driven by needs. Although needs can be classified into several categories, the specifics of what an individual needs is formulated by many of the same factors that shape behavior. Therefore in order to understand the needs of the individual, it is necessary to understand what directs his or her behavior. Behavior and motivation have a cyclic relationship. Motivation affects behavior and behavior dictates what motivational techniques will work.

CHAPTER THREE

MOTIVATION AND THE PROCESS OF MOTIVATING

3.1 Review and Definition of Motivation

In the last chapter, individual behavior was explored to develop a very basic understanding of what makes the person. In this chapter, motivation is analyzed and related to behavior. To do this, a ten step process is introduced that links the various motivation theories in an attempt to clarify the concepts of motivation and establish their connection to performance.

Industrial-organizational psychologists have been studying work motivation and work satisfaction for several years. Several important motivation theories have been developed and applied to the industrial setting. In many cases successful motivation has been achieved by aligning organizational interest with personnel interest. Among the findings that the industrial-organizational psychologist have discovered, is the realization that a dissatisfied, poorly motivated workforce results in low productivity, high turnover, absenteeism and counterproductive behavior.

Motivation involves the active process of directing behavior toward preferred situations and objects.¹³ Motivation is a psychological force. For the purposes of this report, motivation is described as the amount of effort that one desires to expend in a given direction toward the attainment of some goal. It encompasses

those variables acting on or within a person that arouse, sustain, and direct behavior (Madsen, 1959).¹⁴ The amount of effort one expends in pursuit of a goal is in direct proportion to the magnitude of the force that causes the expenditure. Humans are willing to exert energy because they believe such behavior will relieve a need.¹⁵ The preceding definition does not provide a complete appreciation of the concept of motivation. Its purpose is to serve only as an introduction to the formation of the concepts of work motivation and performance. Throughout this chapter the theory of work motivation will unfold. As the discussion of motivation proceeds, the reader should bear in mind that motivation is supposed to affect behavior. Having already discussed behavior, now the emphasis can be placed on describing motivation theories and the motivation process.

3.2 Motivation Classifications

To study motivation and performance the major theories should be analyzed separately. Motivation theories can be classified as need theories and process theories. Need theories emphasize the identification of specific needs and rewards that influence behavior. Process theories try to explain the processes through which motivation takes place. These theories identify factors such as: incentive, reinforcement, and expectancy, and then attempt to specify how these factors interact and lead to motivation. Each theory offers some unique insight into the motivation process. Yet, the theories do not by themselves significantly explain motivation. It

is helpful for the manager to become somewhat acquainted with the theories and combine the general categories to build an understanding of motivation.

The greatest service that this study can achieve is to help the manager develop an operational understanding of the motivation process. The manager needs to know how to motivate. With this goal in mind, the single model of the motivation-performance process is used to illustrate the most significant aspects of many motivation and performance theories. This model is a complete representation of how the major motivation theories are interrelated. Figure 3.1 represents the cyclical model of motivation-performance.¹⁶ It depicts the relationships between individuals, the individual and the organization and the individual and the self. James M. Higgins, author of Human Relations Concepts and Skills, used this model to relate the subject of motivation and performance to the management practitioner. Since this report is written with the management practitioner in mind and seeks to present a complex subject in simplest form, Mr. Higgins' outline is used to present the subject.

3.3 Motivation Performance Cyclical Process

This report presents the model depicted in figure 3.1 first and then proceeds with the introduction and description of each theory as it relates to the various elements of the model. Since the model attempts to consolidate the various motivation theories into one

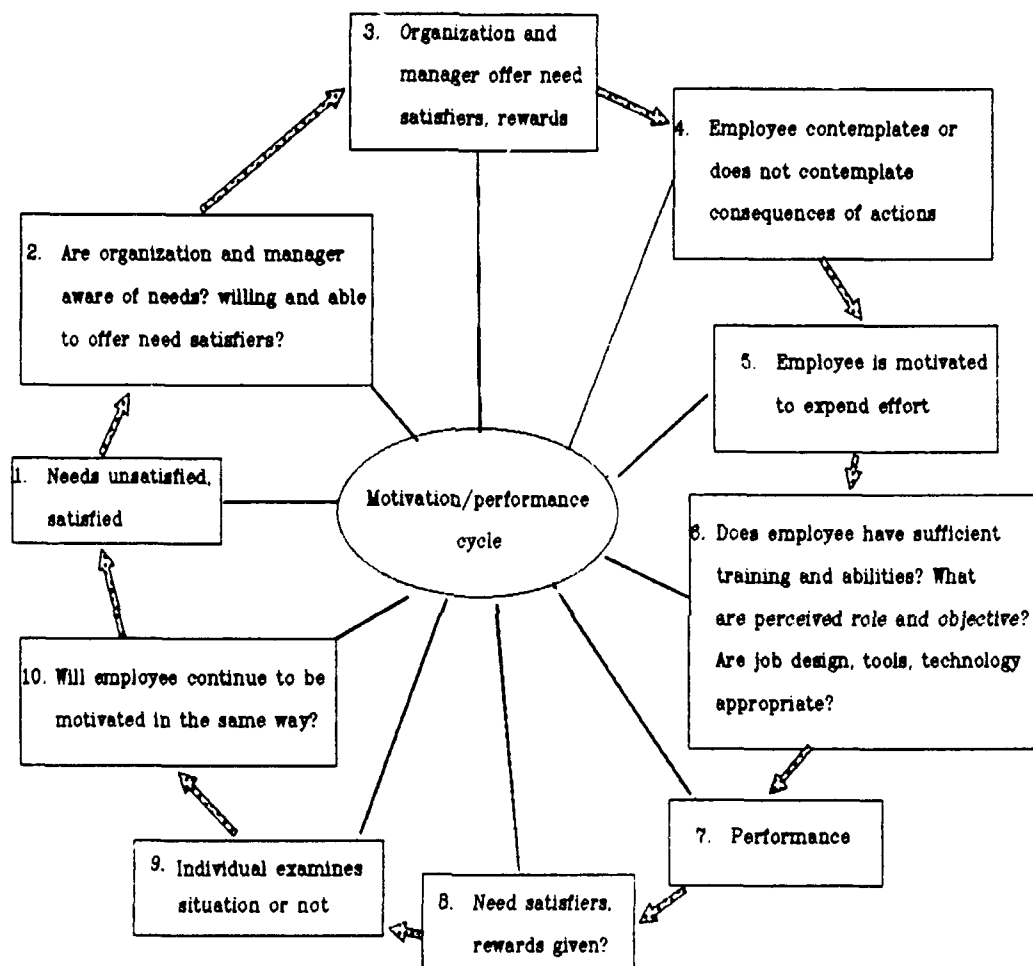


Figure 3.1. Motivation/ Performance Cycle Model

understandable framework, it is better to present it first and associate the various theories to the model as the discussion proceeds. Thus, the model gives the reader a point of reference from which to start in order to evaluate the theories and interrelate their central idea. An evaluation of the model, by managers, can help managers in strengthening their human relations skills particularly with regards to:

1. "Leadership choices: How to treat people in order to motivate them."
2. "Motivation: Influencing others, treating them in a certain way, so that they will perform their work adequately or better."
3. "Communication: Communicating leadership choices in order to motivate."

3.4 Step 1. Needs

Motivation begins with an individual's needs. By offering need satisfiers, managers can motivate workers. Figure 3.1 is based primarily on the needs theories. Needs relate to the basic types of relation required by the individual for optimal functioning. Needs identify intrinsic concepts of motivation. Motivation comes from within the individual. Yet, by understanding individual needs, the manager can create a proper environment.

3.4.1 Maslow's Needs Hierarchy Theory

The most widely used theory of motivation is the needs hierarchy theory. Abraham H. Maslow proposed that all individuals have basic sets of needs that they strive to fulfill over the course of their lives. The theory represents a hierarchy of needs. Underlying this hierarchy are four assumptions:

1. A satisfied need does not motivate. When a need is satisfied, another need emerges to take its place, so people are always striving to satisfy some need.
2. The grouping of needs for people is very complex, with a separate number of needs affecting the behavior of each person at any one time.
3. Lower-level needs must be satisfied before higher level needs can be fully dealt with to drive behavior.
4. There are more ways to satisfy higher-level needs than lower level needs.

Maslow's theory suggest that there are five needs categories: physiological, security, affiliation, esteem, and self-actualization. Figure 3.2 shows the five need categories arranged in Maslow's hierarchy. The needs are as follows:

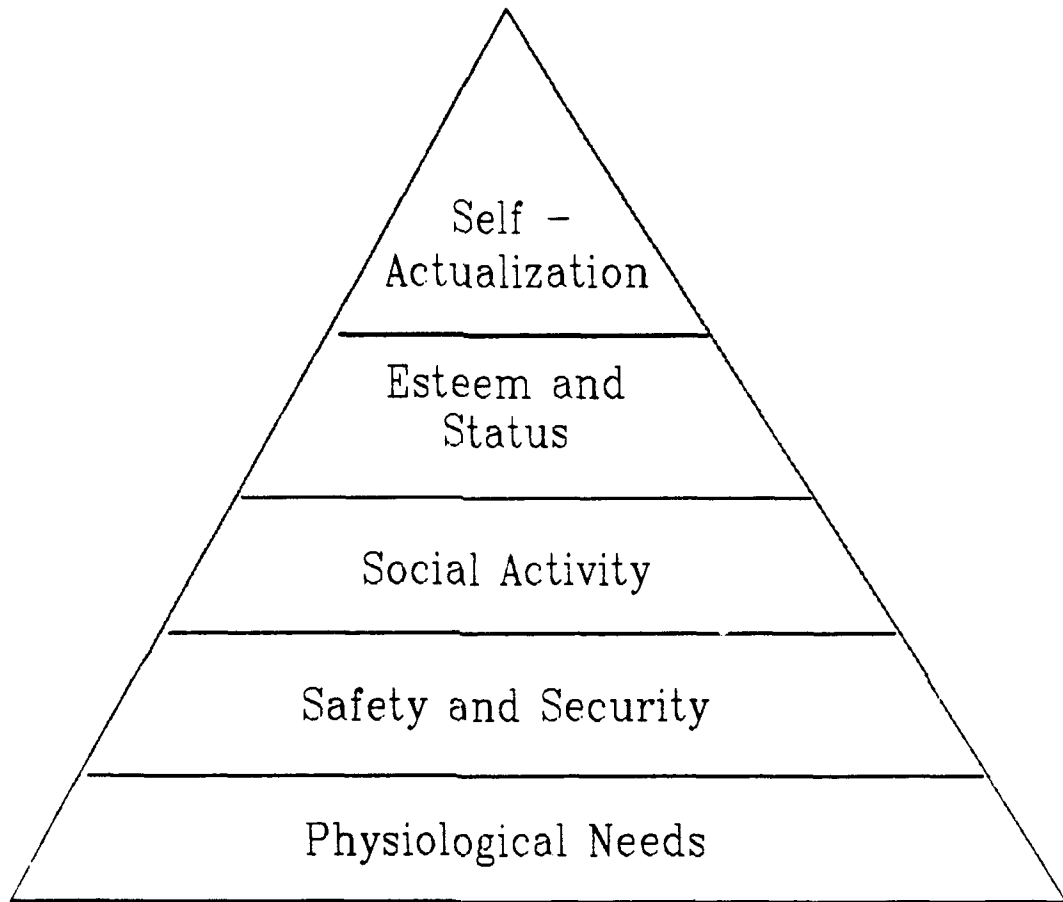


Figure 3.2 Maslow's Hierarchy of Needs

1. Physiological needs. The lowest level of needs is satisfied by those things which sustain life. These include needs for food, water, shelter and clothing. Managers who focus on these needs try to motivate employees by offering wage increases, better working conditions, more leisure time, and better fringe benefits.
2. Safety and security needs. When physiological needs are reasonably satisfied, the next level needs, those for safety and security, begin to dominate an individual's behavior. A manager who provides for this individual need focuses on providing job security, fringe benefits, and employee protection against automation.
3. Social needs. The need for acceptance, affection, friendship, love, and a feeling of belonging are all social needs. Managers address these needs by being supportive, emphasizing employee acceptance by co-workers, extracurricular activities and following group norms.
4. Esteem needs. This describes the need an individual has to occupy a position in time and space as a function of whom he is and of what he is capable. The individual seeks a feeling of achievement or self-worth and recognition or respect from others. Managers who focus on esteem needs tend to emphasize public awards and recognition.
5. Self-actualization needs. The highest level of needs is for fulfillment, self-realization and self actualization. This is the need that one has to accomplish his or her full

potential. Managers who emphasize self-actualization may involve employees in designing jobs, make special assignments that capitalize on employees' unique skills, or allow work crews to develop work procedures and plans for implementation.

Maslow's theory states the goals that people value and suggest types of behavior that will influence the fulfillment of the various needs. The manager should come away from this presentation with an understanding that individuals have needs and therefore they have natural objectives that they want to achieve. The manager needs to focus on providing for these needs.

3.4.2 ERG Theory

Clay Alderfer supported Maslow's theory that individuals have needs that are arranged in a hierarchy. But, Alderfer's ERG theory proposes that the individual has only three basic set of needs: existence, relatedness, and growth. Figure 3.3 represents Alderfer's hierarchy of the three basic needs. Existence needs are material needs and are satisfied by environmental factors such as food, air, water, pay, fringe benefits, and working conditions. Relatedness needs are needs that deal with establishing and maintaining interpersonal relationships with co-workers, superiors, subordinates, friends, and family. Growth needs are needs that are displayed by the individual's attempt to find opportunities for unique personal

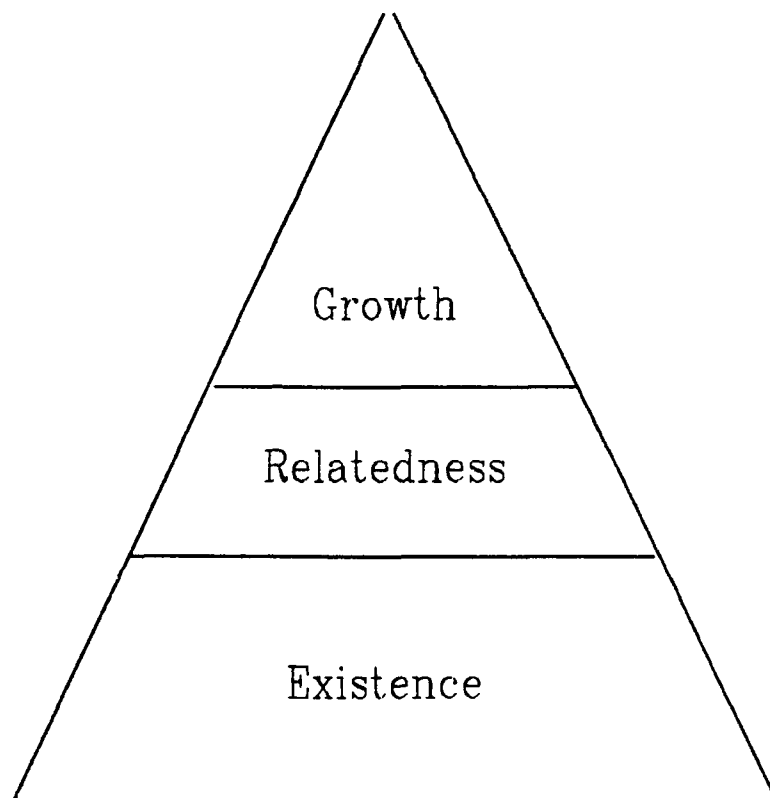


Figure 3.3 Alderfer's ERG Theory

development. They comprise the needs that involve a person's attempt to make creative or productive contributions at work.

Alderfer's theory differs from Maslow's theory in that for Maslow's theory, the process is one of fulfillment-progression, while Alderfer, the process is one of fulfillment-progression and frustration-regression. Maslow states that unfulfilled needs are motivators and that the next higher-level needs become activated only as lower-level needs are satisfied. Alderfer states that if a person is continually frustrated in attempts to satisfy growth needs relatedness needs will reemerge as a major motivating force. The ERG theory has merit for a manager because if the manager is unable to satisfy a higher level need, the manager should attempt to redirect the subordinates behavior toward satisfying relatedness or existence needs. The ERG theory, unlike Maslow's theory suggest that the manager can always deploy means to satisfy lower-level needs if higher level needs are blocked, though these lower-level needs may become less important to the individual over time. It also suggests that different people have different degrees of strengths as related to the three needs. This aspect of the ERG theory relates back to the issue of behavioral factors. Understanding an individual's personality and perceptions can provide insight into what needs are more fitting to the individual. For example, the following findings were presented in Alderfer's study of work motivation:

1. Individuals with parents who had higher educational levels had greater growth needs than did individuals with parents who had lesser educational levels.
2. Men had higher strength of existence needs and lower strength of relatedness needs than women.
3. Blacks showed significantly greater strength of existence needs than did whites.

3.4.3 Achievement Motivation Theory

David McClelland proposed that humans have three important needs: achievement, affiliation, and power. McClelland states that people are motivated according to the strength of their need to perform in terms of a standard of excellence or their need to succeed in competitive situations. Almost all people have an achievement motive, however probably only 10 percent of the U.S. population is strongly motivated for achievement. The amount of achievement an individual has is dependent on the same factors that influence behavior. With the need for achievement also exist the fear of failure. The individual associates certain actions with success and therefor will likely repeat those actions. On the flip side, an individual will unlikely repeat an action that he associates with failure.

High achievers prefer to set their own goals and pursue tasks for which success is moderately high. The task must be attainable

and, yet they must be equally challenging. These individuals seek feedback so they may gauge their performance. They prefer tasks in which their own efforts and ability will have a major impact on determining the outcome of their efforts. The high achiever personality develops most often under the following circumstances:

1. A favorable religious/ ethical climate in which the systems belief and that of the culture encourages individual distinction. This attitude is more prevalent among western cultures.
2. A society in which the stories told to children stress economic achievement.
3. A favorable family environment in which the family stress:
(1) high achievement in terms of objectives and performance, (2) provide positive recognition for performance, (3) give continuous feedback, and (4) are headed by a person whose leadership style is more democratic than authoritarian.¹⁷

3.4.3.1 Culture, Individuality, Teamwork and Achievement

In the Japanese society, while the culture stresses teamwork and devotion to the organization more so than individuality, the culture does practice conditions two and three stated above. However, the Japanese quest for achievement is rooted more in their work ethic toward the company in which they believe that if the firm does well, so will they. Stressing teamwork as the Japanese do is important. Yet, for

Americans, individuality is very important. American culture does not have to imitate Japanese culture in this sense to achieve motivation. Japanese use motivation techniques that fit their culture. It is this simple fact that probably makes the Japanese highly successful. American management has not evolved with American culture. The American workforce is very capable of achieving great productivity. The key may be in management's ability to come of age.

3.5 Step 2. Are Managers Aware of Employer Needs?

Managers and organizations can know employee needs by knowing their employees and by being concerned about their needs. In the discussion on behavior, several factors were presented that affect behavior. To understand behavior the manager should understand those factors that influence behavior. If the manager makes a concentrated effort to understand those elements of behavior he will in all probability be better able to understand what needs subordinates have as individuals and as a group. He also will be in a better position to understand the degree of those needs. The ERG theory touches on this point.

3.6 Step 3. The Manager Offers Need Satisfiers or Rewards

The first two points identified the needs that individuals have and discussed the necessity for management to satisfy those needs. If

the manager is aware of those needs and can satisfy those needs, the worker will be motivated. Frederick Herzberg went a step further and broke down needs into what he called motivator needs and hygiene needs. It has also been called the two-factor theory.

3.6.1 Herzberg's Motivator-Hygiene Theory

Herzberg reported that satisfaction and dissatisfaction were not caused by different degrees or levels of the same factors, but by completely different factors. The factors associated with satisfying experiences he called "motivators," and those associated with dissatisfying experiences he called "hygiene factors." The first factor, motivator needs, is higher-order or growth needs. These needs are unique to humans and distinguish them from other animals. Motivator needs include the work itself, recognition, advancement, and responsibility. These needs are satisfied by things such as responsible challenging work, independence of action, recognition, achievement, trust, and respect for the individual. Motivators appeal to employees' higher level needs and self esteem. The second set of factors, hygiene needs, is lower level needs that cause dissatisfaction when absent, but when present do not motivate. They are basically maintenance needs. These needs include such things as pay, security, coworkers, general working conditions, and company policies. The factors associated with motivators and hygiene factors are summarized in table 3-1.

Table 3-1 The Factors in Herzberg's Theory

Hygiene factors (external, extrinsic dissatisfiers)	Motivators (internal, intrinsic satisfiers)
Company policy and administration	Achievement
Methods of supervision	Recognition of achievement
Interpersonal relations with peers, superiors, and subordinates	Responsibility
Working conditions	Advancement
Compensation	Interesting work
Job security	Personal growth
Symbols of status	
Personal problems	

Source: James M. Higgins, Human Relations Concepts and Skills, Random house, Inc., New York, 1982, p.40

When hygiene factors are inadequate, employees will become dissatisfied. Yet, adding more hygiene factors to the job does not motivate someone, they simply insure that the individual is not dissatisfied. The implications to the construction manager is that he or she should provide an efficient environment that will minimize the causes for dissatisfaction. Yet, he needs to be cautious so that he does not use hygiene factors as motivators. Hygiene factors affect lower-level needs and since lower level needs are quickly satisfied, the manager will have to escalate the offer to further motivate the employee. One important element includes pay. The manager has only so much he can offer and should not rely exclusively on pay in his attempt to motivate the worker.

3.6.2 Maslow's Theory Versus Herzberg's Theory

Herzberg's theory may be helpful for focusing attention on the importance of psychological needs.¹⁸ The theory is useful for

drawing attention to the fact that higher level needs are somewhat infinite, difficult to satisfy, and therefore useful as motivators, while the lower-level needs, being easier to satisfy, quickly lose their effectiveness as motivators.¹⁹ Herzberg's theory as well as Maslow's theory should be applied while bearing in mind the factors that influence an individual's behavior such as personality or perception. An individual whose primary goal is security rather than responsibility and independence may not function to his optimal level under a job enrichment program.

Herzberg's theory does contribute to the growing understanding of motivation. When compared with Maslow's hierarchy of needs, it is apparent that the hygiene factors correspond to the lower level of the hierarchy and the motivators correspond to the two upper levels (figure 3.4). The manager who uses the combine aspects of both theories can select among the many satisfiers that his or her organization has to offer to achieve motivation. In doing so the manager will have modeled his or her organization to accomplish individual objectives while accomplishing organizational objectives.

Maslow's need hierarchy	Herzberg's motivation - maintenance model
Self-realization and	Work itself Achievement Possibility of growth Responsibility
Esteem and status	Advancement Recognition Status
Social activity	Interpersonal relations Superior Subordinates Peers
Safety and security	Company policy and administration Job Security
Physiological needs	Working condition Salary Personal Life

**Figure 3.4 Maslow's Need Hierarchy and
Herzberg's Motivation-Maintenance Model**

3.7 Step 4. The Employee Contemplates or Does Not Contemplate The Consequences of Actions

The manager has followed steps one through three, as presented in figure 3.1, and still, performance has yet to be achieved. In step four, the employee is deciding, whether consciously or subconsciously, if he or she should expend some energy. The employee may ask himself/herself the question, What's in it for me? The employee will decide to engage in the activity if it will provide something that the employee values. The theories that apply in the following steps are categorized as process theories. The first process theory, behavior modification, was already discussed in chapter two. The theory addressed the process of behavior modification through reinforcement of desired characteristics. The theories that follow center on the cognitive ability of the individual.

3.7.1 Expectancy Theory

The expectancy theory of motivation assumes that an individual's motivation depends on his or her perception of how his or her actions and rewards will be related.²⁰ Victor Vroom developed a hypothesis that subdivided the theory into three areas: (1) expectancy, (2) valence, and (3) instrumentality.

Expectancy relates to the belief that a particular level of effort will be followed by a particular level of performance. The

employee may ask himself or herself the question, if I do the job, will I get the reward? Expectancy considers the probability of outcome with regards to input. The manager must be careful not to offer a reward for which only a few can benefit. Some employees may believe that there is no chance that they will get the reward.

Valence represents the value or importance that the particular outcome has for the individual. The employee will evaluate if the reward is worthwhile in terms of current and future needs. The outcome may be attracting or it may be dissatisfying. In the construction industry the workers may place greater value on job security and a small wage increase over a large wage increase with many short term benefits but no job security. Another area of construction that can negate each other is good wages but dirty and dangerous working conditions.

Instrumentality refers to the relationship between first level outcomes, such as a promotion, and second level outcomes, such as a raise. The basic question is, What's in it for me? The correct answer that will result in performance is that the promotion provides the increase in pay which is an outcome that the employee values.

Vroom asserts that motivation involves a largely conscious three step process: (1) does the person feel that the action has a high probability of leading to an outcome (expectancy), (2) does the first level outcome produce other outcomes (instrumentality), and (3) are

those outcomes of any importance to the person (valence). If any of these steps are negatively perceived by the employee, motivation will be lacking and the desired performance may not be achieved. The manager can apply the principles of this theory in association with the behavioral factors discussed in chapter two to motivate employees.

Managers should determine the outcomes that each employee values. Using the behavioral knowledge the manager should observe employees to determine their personality, perceptions and abilities. Similarly, the manager can ask the employees about the kinds of rewards they want and the career goals they have. Managers also must define good performance and adequate performance, in terms that are observable and measurable, so that employees can understand what managers desire of them. This relates to the aspect of positive reinforcement previously defined in chapter two. In the construction industry this means developing and maintaining productivity measurement indexes that can provide valuable feedback to employees. The manager should make sure that the desired levels of performance are reachable. Managers should link outcomes desired by employees to specific performances. As stated in chapter two, the employees may perceive things very differently than the manager. The manager needs to make the connection between performance and outcomes and subsequently make sure the employees see the relationship. Managers also should insure that changes in outcomes or rewards are sufficiently large to motivate significant behavior. Rewards should not be trivial.

3.7.2 Equity Theory

Equity theory assumes that individuals are strongly motivated to maintain a balance between what they perceive as their inputs, contributions, and their rewards. Employees compare their inputs and outputs with those of other employees. Equity exist whenever the ratio of a person's outcome to inputs equals the ratio of outcomes to inputs for others. Inequity exists when the ratios of outcomes to inputs are not equal. Inequity also can result when people are overpaid. If the employee perceives an inequity, tension or drive will develop in his or her mind. Since tension is not pleasurable, the employee is motivated to reduce or eliminate the inequity. The equity theory explores the behavioral factor, perception. Two valuable conclusions can be drawn from the equity theory. First, the manger who understands the equity theory and can relate it to perception, understands that he or she must seek to maintain a balance in the working environment. The manager must treat employees equitably. Second, individuals make decisions concerning equity only after they compare their inputs/outcomes with those of others. The manager c provide for equity within the organization. In addition, the manager must work to establish equity within the profession. In the construction field this is easier to do than in other industrial settings since craft wages are typically equivalent for the same geographical area.

3.8 Steps 5 Through 7. Employee is Motivated/ Skills, Objectives, Job Design, and Tools/ Performance

At this point the rewards that are offered are suitable for stimulating positive responses. The satisfiers meet with the individual's behavior. The individual will attempt to expend effort. Now the employee needs to develop a knowledge of the direction in which he or she is to expend that effort. How much effort the employee expends and in which direction the employee expends that effort becomes a question of several factors including skills, ability, training, work objectives, job design and available tools. Once management addresses these aspects the desired results should be achieved.

3.8.1 Skills and Training

Skills require two things: ability and training. Abilities were discussed in chapter two. Training is critical to the success of an organization. "Training is one key to superior performance."²¹ An individual will be unable to reach his full potential unless he is provided with some degree of training. Maslow's needs theory identified self-actualization as the highest of needs. The fact that individuals seek to become good at something supports Maslow's theory. They work to claim expertise in a certain area. This is an intrinsic objective. The manager can help by providing the training to reach that level. Providing the required training motivates, and the development of motivation generates a greater capacity to learn

and to better ones abilities. On the other hand, lack of ability and lack of training to develop ones ability leads to dissatisfaction.

3.8.2 Work Objectives

The behavior that the manager desires may or may not be realized unless the manager ensures that subordinates are aware of management objectives and that both agree on the objectives. Agreement does not imply that subordinates must accept the objectives unconditionally. It does suggest, however that the subordinates must have an awareness and understanding of the objectives. They also must have an understanding of their roles and how they relate to the accomplishment of the objectives. Objectives can be achieved through goal setting. Goal setting provides considerable information on where to direct effort. Employees know what is expected of them and as a result have a clearer focus on what is to be done.

3.8.3 Job Design and Tools

Simply stated, all the motivation in the world does not insure that the desired performance and accompanying results are achieved if the tools are inadequate or the job design is poor. In the construction industry, productive performance is based on adequate tools, proper materials, a workable schedule, and availability of required equipment. Lack of any of these elements will make it difficult for the employee to accomplish the stated objectives and

goals. "Primarily, in the construction industry, a well planned project seems to be the first and most important step to achieve good productivity."²² Duplication of effort, numerous modifications to plans, incorrect sequence of task, or schedules that consistently slip have degrading effects on motivation. In comparison, a good plan, the availability of quality tools, and the timely availability of required materials leads to better performance and in turn to greater motivation. For example, a carpenter who has a power hammer is going to nail more boards than one who only has a regular hammer. Provided the boards are on-site and the schedule is correct, the carpenter should be more productive. He or she accomplishes company objectives, feels good about his or her performance, and satisfies his or her needs for mastery and status.

3.8.4 Performance

Having accomplished steps one through six, the desired performance should be realized. In the construction industry performance needs to be measured. If the ultimate goal of the manager is to improve productivity and he or she realizes that one of the factors to achieve that goal is to motivate the workforce, then he or she must also measure productivity. If a quality measure of productivity is developed and fed back, it will lead to significant increases in productivity through increased motivation.

3.9 Step 8 Through 10. Needs Satisfied, Employee Evaluates Rewards, Continued Motivation

Once the performance has occurred the manager needs to insure that the rewards are given. Failure to provide rewards promised will often result in failure to repeat the performance. Having received the rewards and need satisfiers, the employee will evaluate the rewards and ask the same questions that were asked during step four. The employee applies the rationale that was presented in the discussion of the expectancy theory.

The manager has reached a decision point where he must figure out if the individual will continue to be motivated in the same manner. Depending on what has happened previously the individual may or may not be motivated in the same way again. The individual who is rewarded for his behavior will tend to repeat the behavior that brought the reward. The reward will serve as positive reinforcement. Yet, not all individuals react in the same manner to the reward. If the motivation process fails to keep in tune with the individual's perceptions, personality, and abilities, the individual may fail to be satisfied. If the individual's personality is such that he or she does not wish to be singled out as an achiever or he or she is prone to react to group pressure, the reward may not satisfy the individual's needs. Additionally if the reward is not related to the performance, and therefore satisfaction is not related to performance, the performance is unlikely to reoccur.

The motivation process also must maintain or improve the individual's self image. Individuals are happier and healthier when they feel good about themselves, and in turn they are more productive. In construction, most craftsmen take considerable pride in the work they do. They are artist of their trade. The construction worker is searching to satisfy the higher order needs that are presented in Maslow's theory. The motivation process that recognizes the construction worker's unique ability and does not belittle him or her as a blue collar worker will often lead to continued motivation. The construction worker seeks status and personal growth in the accomplishment of his or her trade. When a manager uses pay exclusively as a motivator, the performance may not reoccur.

3.10 Leadership and Communications

If construction managers are to achieve the level of performance they desire when working through the motivation/performance cycle, and develop a motivated workforce, they must have the ability to lead and direct the work force. In addition, the construction manager must be able to communicate effectively. This report will not elaborate greatly on leadership and communications. These two items can make up a report in their own right. Still, just a few aspects of each item will be discussed.

3.10.1 Leadership

A construction manager's leadership ability will impact upon his or her ability to motivate the construction worker. The manager has choices to make as to the way he treats his subordinates. Understanding the concepts of motivation and being able to apply these concepts will enable the manager to make the proper choices that in turn should result in productive performance. Choices should be made only after the major factors that affect the particular situation have been considered. The choices will depend on: (1) the organizational needs and objectives, (2) the personalities of the subordinates, especially their needs (Maslow and Alderfer), (3) the dynamics of the group, (4) the particular task or job concerned, and (5) other major situational variables.²³

Among all the things that the construction manager can do to be an effective leader and motivator, he or she must be able to work effectively with people in a variety of situations. The manager must respect others and realize that to accomplish the project tasks, the manager must be considerate of others. Greg Oldham hypothesized that certain leadership behaviors would significantly influence worker motivation and performance. The following leadership qualities are a modification of Oldham's study:²⁴

1. The effective construction manager will search for ways to build upon the self esteem of the workers.

2. "The manager will reward the worker for producing good work by congratulating the worker, patting him or her on the back, indicating a job well done, or engaging in similar supportive activities."
3. The manager will, when practical, consult with the craftsmen and evaluate their opinions and suggestions when making decisions.
4. The manager also will show confidence that craftsmen will attain high standards of performance.
5. The manager will set specific performance goals for the workers to achieve.
6. The manager will provide feedback to the workers and will keep them abreast of the job progress.
7. The manager will be supportive of his workforce. The Manager will provide opportunities for increased responsibility and independence of action so that the job becomes more challenging or demanding.

3.10.2 Theory X and Theory Y

Leadership styles can vary between an authoritarian view and a participative, democratic view. In the past, the construction manager has functioned primarily on the authoritarian type of leader. Douglas McGregor presented two leadership theories that rely on certain assumptions that are held by managers. He theorized that these beliefs help to explain why managers behave in certain ways.

The traditional authoritarian view relates to Theory X, and the progressive approach relates to Theory Y.²⁵ With respect to people, these theories help the manager to understand the classification of people and in turn the process of directing their efforts, motivating them, and modifying their behavior to fit the needs of the organization. Theory X is based on the following assumptions:

1. The average human being has an inherent dislike of work and will avoid it if he can.
2. Because of this human characteristic of dislike of work, most people must be controlled, directed, threatened with punishment to get them to put forth adequate effort toward the achievement of the organizational objectives.
3. The average human being prefers to be directed, wishes to avoid responsibility, has relatively little ambition, wants security above all (Maslow).

Theory Y is based on the following assumptions:

1. The expenditure of physical and mental effort in work is as natural as play or rest.
2. External control and the threat of punishment are not the only means for bringing about effort toward organizational objectives. Man will exercise self-direction and self-control in the service of objectives to which he is committed.

3. Commitment to objectives depends on the rewards associated with their achievement. The most significant of such rewards, the satisfaction of the ego and self-actualization needs (Maslow's higher-level needs), can be direct products of effort directed toward organizational objectives.
4. The average human being learns, under proper conditions, not only to accept but to seek responsibility.
5. The capacity to exercise a relatively high degree of imagination, ingenuity, and creativity in the solution of organizational problems is widely, not narrowly, distributed in the population.
6. Under the conditions of modern industrial life, the intellectual potentialities of the average human being are only partially used.

"Whether the manager believes in Theory X or Theory Y, the concepts provide a useful way of approaching the problem of managing people".²⁶ Theory X managers practice management by control. Theory Y managers practice management by objectives. The construction manager can develop worker motivation by using both Theory X and Theory Y approaches. Theory X may serve better when applied to unskilled labor. Theory Y may serve better when applied to skilled labor.

3.10.3 Communications

A construction manager's communication ability also will impact upon his ability to motivate the construction worker. Because the developing and constantly changing nature of construction work, the construction manager must continuously communicate with the project supervisors and craftsmen during the project. If the manager is unable to communicate with the worker, there is not much he or she can do to change worker attitudes and generate motivation. The manager must insure that what he or she transmits is received by the receiver and is not misinterpreted. The manager must clarify ideas before they are communicated. The manager also must solicit feedback from the receiver to insure that the receiver interprets it correctly. How the receiver interprets the communication is based on his or her background and experience (aspects of behavior). Therefore, the manager must be sensitive to nature of the receiver. Likewise, the manager, if his goal is to motivate, must avoid talking down to the worker or workers. The manager should bear in mind that how he or she presents something may be equally important if not more important than what he or she presents.

3.11 A Review of the Cyclical Process

Motivation has been portrayed as a cyclical process; once motivated, people must be motivated again. The process begins with individual needs. The needs theories: Maslow's hierarchy,

Alderfer's ERG theory, and McClelland's achievement motivation theory attempt to explain those needs and provide insight as to what satisfiers the manager should offer. Herzberg's two-factor theory builds on the needs theories and makes a distinction between hygiene factors and motivators. The essence of his theory is that hygiene factors, if present, provide for attainment of lower-level needs. Similarly, if hygiene factors are present, relatedness and existence needs (ERG theory) are not likely to be frustrated. Hygiene factors do not satisfy when present; in their absence, the worker is not satisfied. Only motivators will satisfy. They satisfy higher-order needs, or growth needs (ERG theory). Achievement motivation theory does not have lower-level needs. The achievement needs may be satisfied through hygiene factors, but more importantly, achievement needs require motivators to yield a sense of achievement, power, and control.

The process theories: expectancy and equity theory relate to the cognitive ability of humans. Man is a thinking person who can reason and rationalize his actions and make choices in response to the rewards or satisfiers that are offered. He or she is constantly asking himself or herself questions and is evaluating the satisfiers and rewards. Therefore, rewards must relate to the performance and they must maintain a respectable self-image that man seeks. Additionally, the motivation process must be continuous meaning new rewards should be offered and satisfiers should ascend the ladder established by the needs theories.

Effective leadership must be established by the manager in order to motivate. The same style of leadership may not be effective for all situations or personal. Yet, when the manager understands the personalities of the workforce and can relate to their needs, he or she can use the leadership style which best fits the situation. The manager should, despite the style of leadership chosen, focus in on the individual needs, and present the right rewards and satisfiers. These rewards and satisfiers must relate to performance. Also important is open and effective communications. The manager must understand what he wishes to communicate and insure that what he desires to communicate is what is interpreted by the receivers.

CHAPTER FOUR MOTIVATORS AND DEMOTIVATORS

4.1 The Right Motivator

Chapters two and three have sought to develop an understanding and appreciation of the complex nature of human behavior and the motivation process. The various motivation theories were categorized together to help explain the concept of motivation. Their interaction helped to formulate the motivation-performance cycle. This chapter explores some of the various stimuli that may be used by the manager and examines their reliability as motivators. Another area that is explored is the existence of "demotivators." Before proceeding it is important to reaffirm the fact that (1) worker situations differ and (2) worker motivational practices cannot be applied across the board. Having said that, however, an understanding of the behavioral principles, the motivation theories, and the stimuli themselves can help the manager to adapt to each unique situation.

4.2 Motivators Versus Demotivators

The Civil Engineering Department at the University of Texas at Austin conducted an in-depth study that revealed construction project motivators and demotivators.²⁷ The study concluded that the most successful method for improving worker motivation is first to reduce the effects of any existing demotivators. The study alluded to the fact that even if motivators aren't present, when the

demotivators are eliminated, workers fall into a more productive routine. The study discovered that in construction the worker can spend an average of 57.9% of their time waiting for one reason or another and an average of 14.3% of their time redoing work. Construction workers in general have a need to succeed and complete a project on time with quality workmanship. Here, delays are especially demotivating. The study concludes that the key to motivating construction craftsmen seems to be organizing the project and its resources to allow the individuals to be productive. The findings generated by the study were based on the results of interviews that were conducted with over 1000 craftsmen and foremen on twelve large construction projects. The study generated a list of motivators and demotivators that were common to each project. Table 4-1, presents project motivators. Table 4-2, presents numerous demotivators.

Figure 4.1 was developed to graphically represent the total summation of the values presented in table 4-1. The prevailing and most dominating motivation factors among the projects were, in descending order, (1) pay, (2) work itself, (3) a good orientation program, (4) a good safety program, (5) good craft relations, and (6) suggestions solicited. Most of these factors except for pay can be associated with the higher-level needs identified by Maslow's hierarchy of needs. This study lends some degree of support to Herzberg's two-factor theory.

Table 4-1 Survey Results of Motivators in
Twelve Construction Projects

MOTIVATORS	PROJECTS											
	A	B	C	D	E	F	G	H	I	J	K	L
Good craft relations			1*			2	2		1	1		
Good orientation program	3	3	1		1	1	1	2				2
Good safety program		1*	1	1*	2*	3		2*	2			
Work itself	2		2	2	2		3		2			2
Overtime					3		3					
Pay			2	1	1	2	2	2	2		2	2
Recognition				1*	1*							
Goals defined			1	1	1		1					
Open house & project tour	2	1		2								
Well-planned project						2*	2*	1*				
Suggestions solicited			1*		1*	1		2*	1			

KEY: 1 = somewhat important * = demotivator and motivator
 2 = major importance
 3 = extremely important

Source: Garner, Couglas F., Borcharding, John, D. and Samelson, Nancy M., Factors Influencing the Motivation of Craftsmen and Foremen on Large Construction Projects, The University of Texas at Austin, August, 1978

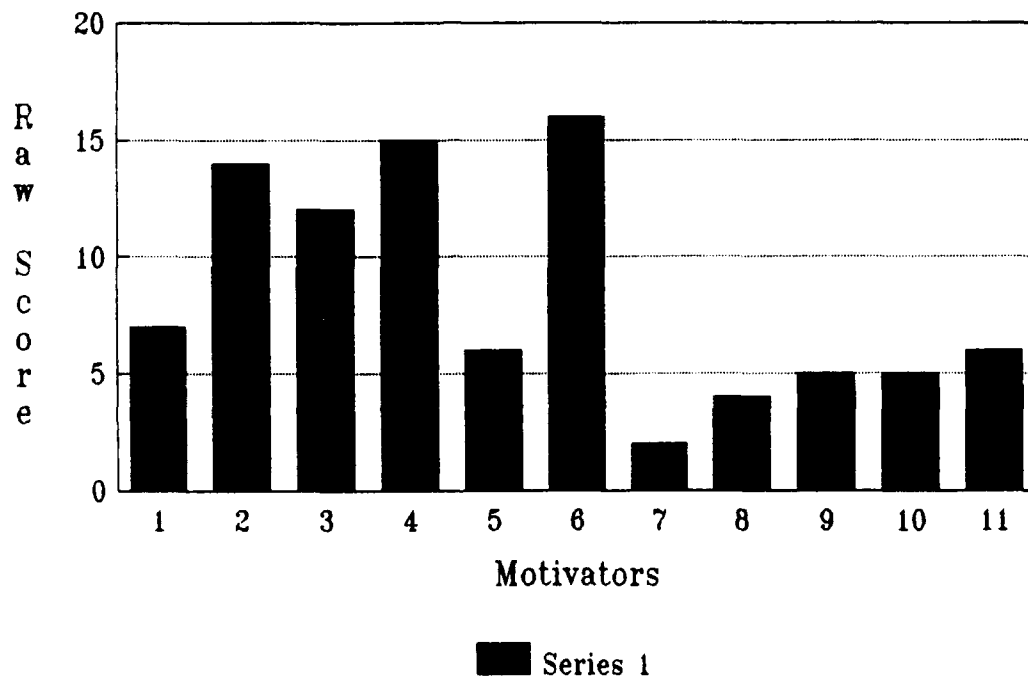
Table 4-2 Survey Results of Demotivators in Twelve Construction Projects

DEMOTIVATORS	PROJECTS											
	A	B	C	D	E	F	G	H	I	J	K	L
Disrespectful treatment		3	3	2		1			3	3		2
Little accomplishment			1		2					2		
Material availability	2	2	2		3	1	1	2	1	2	1	2
Tool availability	2	1	2		2			1	1	1	1	2
Redoing work	1	1	1	1	1				1	1	2	2
Crew discontinuity	1		2		1		2					2
Project confusion	1	1	1	1	1	1	1	1	1	1	1	1
Lack of recognition	2	2		1*	1*		1	1			1	
Productivity urged but no one cares	1	1	1								2	2
Ineffective utilization of skills	1		1				2	1			2	
Incompetent personnel	1	1	1	1	1		1	1	2	2	2	2
Lack of cooperation among crafts	1		1*					1			3	3
Overcrowding		1			1							
Poor inspection programs		1		1					1	1		
Communication breakdown	1	1	1	1	1	1		2	2	2	2	2
Unsafe conditions	1	1*		1*	2*		2	1*		2		2
Lack of participation in decision making	1	1	2*	1	1*			1*				

KEY: 1 = somewhat important * = demotivator and motivator
 2 = major importance
 3 = extremely important

Source: Garner, Couglas F., Borcharding, John, D. and Samelson, Nancy M., Factors Influencing the Motivation of Craftsmen and Foremen on Large Construction Projects, The University of Texas at Austin, August, 1978

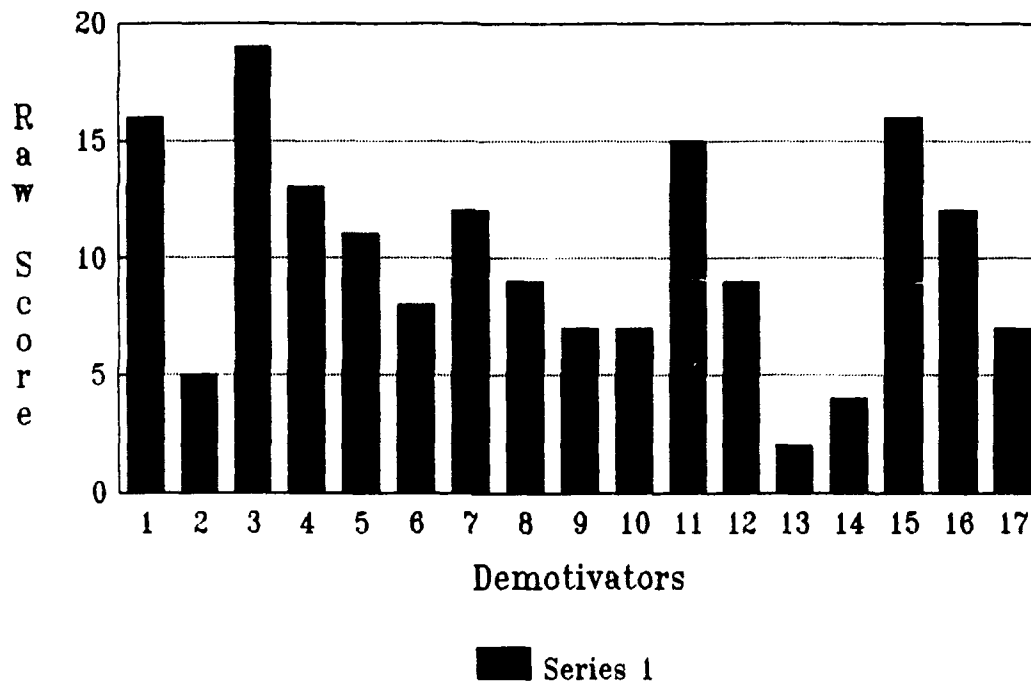
Figure 4.1
Value of Motivators
Graphical Representation



Based on Table 4-1: Raw score is the summation of the values in table 4-1

1	Good craft relations	7	Recognition
2	Good orientation program	8	Goals defined
3	Good safety program	9	Open house & project tour
4	Work itself	10	Well-planned project
5	Overtime	11	Suggestions solicited
6	Pay		

Figure 4.2
Value of Demotivators
Graphical Representation



Based on Table 4-2: Raw score is the summation of the values in table 4-2

1	Disrespectful treatment	10	Ineffective Utilization of skills
2	Little accomplishment	11	Incompetency of personnel
3	Material availability	12	Lack of cooperation among crafts
4	Tool availability	13	Overcrowding
5	Redoing work	14	Project inspection programs
6	Crew discontinuity	15	Communications breakdown
7	Project confusion	16	Unsafe conditions
8	Lack of recognition	17	Lack of participative decision-making
9	Productivity urged but		

Figure 4.2 represents the total summation of the values presented in table 4-2. Most of the demotivating factors also can be classified as lower-level needs. It is important to note that factors such as recognition, cooperation among crafts, participative decision-making, and safe conditions are potential motivators that have turned into demotivators. Herzberg categorized factors such as recognition, work itself, and participative management as motivators. Similarly, he identified work conditions (items 3, 4, 5, 6, 7, 11, 13), company policy and administration (items 9, 14), and relationship with peers (item 12) as hygiene factors.

This study concludes that any factor that prevents the project from proceeding on schedule can be severely demotivating. Yet, many of the demotivators cited originate from trivial causes. With minimal effort, many demotivators can be repressed. Until the demotivators are removed, the effectiveness of motivators will remain questionable. For example, in construction, if unsafe conditions exist on the job site, and workers have been injured through management's neglect, increased pay or advancement will often be ineffective as a motivating tool. Equally important to motivation of the construction laborer, this study stresses the importance of proper planning, elimination of delay causing factors, and the timely availability of quality tools, equipment, and project materials.

4.3 Job Satisfiers

This report leads to the conclusion that individuals have needs and the basis of motivation is formulated around satisfying these needs. Determining what the correct satisfier is for a given situation is not an easy task for the manager. But, when the manager combines the many motivation theories and makes an attempt to understand the principles of process motivation, the manager will have a better chance of identifying and implementing the correct motivation program. Additionally, the correct motivators may be identified through careful assessment of individual and organizational needs. The manager also must understand that often multiple motivators over a period of time may be required because workers want to satisfy a range of needs rather than only one or two. The process theories: behavior modification, expectancy theory, and equity theory help to explain why individuals react differently to different motivators.

A 1974 U.S. Department of Labor study tabulated the results of a study that sought to show what satisfiers are important to blue collar workers and white collar workers. The results are presented in table 4-3. Table 4-3 gives construction managers a quick reference as to what is important for the construction worker. The factors that are showed in table 4-3 will be examined for their adequacy as a motivator in the proceeding sections.

Table 4-3 Job Satisfiers

<u>White Collar</u>	<u>Blue Collar</u>
Interesting work	Good pay
Opportunity to develop special abilities	Enough help & equipment
Enough information	Job security
Enough authority	Enough information
Enough help & equipment	Interesting work
Friendly helpful co-workers	Friendly helpful co-workers
Opportunity to see results of work	Responsibility clearly defined
Responsibility clearly defined	Opportunity to see results of work
Good pay	Enough authority
	Competent supervision

Source: U.S. Department of Labor Study, **Job satisfaction: is there a trend? Workers rate job facets that were "very important" to them**

4.4 Money as a Motivator

Frederick Herzberg states that an increase in wage motivates the individual to seek the next wage increase.²⁸ Herzberg's statement suggest that money is not a motivator that can increase productivity. The majority of behavioral-psychologist believe that the level of performance that a worker achieves is not directly related to the pay earned. This is not to say that pay is not important. Pay has its position in the motivational-cycle. Workers want and need monetary gain. Money enables the worker to satisfy other internal needs. Money is a source of pride, security, and satisfaction. Yet, using money to motivate is very expensive for the organization.

To use money as a motivator, the pay must be appropriate for the level of performance and should be comparative with the community average. Pay will only motivate toward a prescribed level of

performance if the employee perceives it as fair pay for his or her performance. This reasoning that the individual applies relates to the expectancy theory. If the outcome of the performance is pay, then it must be related to performance, it must be of value to the individual, and the individual must perceive that the effort expended leads to the performance sought. But, money can never be used alone. The presence of demotivators or the lack of other satisfiers will negate any potential that money has to motivate.

It is important that the construction manager understand that money cannot be used independently as a motivator. In regard to pay, the manager must strive to make pay equitable. According to Herzberg, a laborer who receives equitable pay for what he does is not dissatisfied, but neither is he motivated. The laborer must be satisfied through other means.

Increase in pay may not be an effective motivator in all cases, but there are other aspects of money that can serve as motivators without imposing a heavy financial burden upon the firm. These include programs such as profit sharing, better fringe benefits, retirement plans, rebates for educational courses, flexible time, and medical plans. These aspects provide tangible rewards. Some of these aspects provide not only for the individual, but also for the security of the individual's family. Many of these areas are extremely strong motivators.

4.5 Enough Help and Equipment

Both, the study conducted by the U.S. Department of Labor and the University of Texas at Austin allude to the fact that interruptions to work progress lead to worker demotivation. To many interruptions to work make it impossible to get into a smooth, efficient work routine. As explained by McGregor's Theory Y, individuals have a natural desire to work. Individuals wish to be successful in their endeavors. If workers see that a sustained exertion of effort does not lead to the desired productivity, to them the effort is senseless and they are demotivated. Workers will say, "What's the use?" According to the expectancy theory, the workers will fail to be motivated because they do not see a correlation between effort and performance. Effort alone will not lead to performance. Management needs to be aware of this fact and strive to provide the needed help and state-of-the art equipment and tools.

4.6 Job Security

Job security when related to performance has a significant positive impact on motivation. Employment aspects such as tenure, guaranteed employment for a specified period, sensitivity when introducing innovative work processes, and developing an understanding of the guidelines for dismissal in the organization provide a means to satisfying security needs (Maslow).

4.6.1 Innovation and Job Security

Employees will resist change if they perceive that the change is a threat to their job security. Technological advances and automation can cause such fear if not properly introduced. A worker will welcome an innovative idea that leads to less expenditure of effort while his or her employment position is safeguarded. Additionally, employees will welcome an innovative idea that helps to eliminate the worker's exposure to the hazards of his profession. This is especially true in the construction industry. However, the worker does not want to be designed out a job. Therefore, management must seek to train the employees and utilize them in other aspects of the job. Management's concern over the employee's job security, and the programs that management initiates to provide for those needs will have a positive effect on worker motivation.

4.7 Establishing Direction of Effort Through Job Information

Workers desire to understand and be knowledgeable about the organization in which they work and be informed as to what is going on and what is the general aim of the organization. Workers want to be considered an integral and important part of that organization. Similarly, workers need to know the direction in which to expend effort to make the organization successful. They want to be able to relate their performance to the organizational objectives. Management must clearly identify what a worker is to do. To assist

in this effort, goals should be set and feedback should be provided. Management also should establish a productivity measurement system by which employees may gauge their performance. These factors are specifically important to the construction industry. Often management fails to establish or even communicate the goals of the project to the workers. And often, the measurement indexes are inadequate. Also, many workers never get to see what the finished product is. The result is that the workers never obtain the feeling of pride in the accomplishment of the work that they would otherwise experience if they saw the results of their efforts, and their efforts were acknowledged.

4.7.1 Goal Setting

Setting specific, meaningful, and hard goals on employees will increase performance. Goals that are meaningful and challenging provide a greater reward when accomplished. The motivation that is derived from challenging, meaningful, and attainable goals relates to the essence of Maslow's hierarchy of needs, Herzberg's theory, and the achievement theory. For the goals to be effective, they must be clearly established and communicated to the employees. Chapter three stated that goals are effective because they give direction. Workers have a clearer focus on what they are to do. The goals also must be meaningful. Workers should be made aware of how the accomplishment of their established goals are important to the success of other workers, other crafts, and the organization. Setting goals also are

effective when they are tied into tangible results such as recognition or bonuses (positive reinforcement). Goals also should be subdivided so that intermediate points of achievement are recognized. This helps the employee feel good about himself and his or her achievements (Maslow: self esteem, and McClelland's achievement theory). While the workers are performing the task, they sense that the performance is really yielding achievement. Intermediate stages also help to provide workers feedback.

4.7.2 Feedback

Feedback works as a motivator because it lets employees know how well they are doing. Feedback provides workers with information so that they may properly track their progress and set new goals for themselves. Feedback also provides information to workers so that they may take corrective action when they are veering off track. Feedback helps the worker to equate effort with performance. When appropriately provided, feedback provides positive reinforcement. A praise from the manager given following the performance goes a long way. Likewise, when deficient performance is flagged and the manager takes the time to provide training to the employee to correct deficient performance, the employee's growth needs (Alderfer's ERG theory) are addressed. Feedback is an important element of goal setting. For goal setting to be effective as a motivator, feedback must be provided.

4.7.3 Measurement System

Establishing goals to be achieved should be tied into measurement systems. In the construction industry productivity measurement is the driving force that gauges the success of the construction firm. Yet, productivity measurement systems are inadequate. This has been a long standing problem that recently has begun to get much attention. However, the means used for measuring productivity is not the focus of this section. The intent here is to alert the manager to the fact that the specific information that he or she gains through the measurement system must be related to the workers. When productivity measurement is tied into goal setting, feedback, and work effort, the workers develop an understanding of how their efforts impact the organizational objectives. They also have the means by which they can gauge their performance. Yet, more important, if productivity is not properly measured, the correct direction for effort cannot be established.

4.8 Participative Management

Worker participation in the development of organizational objectives, goals, plans, performance evaluation criteria, and schedules is an effective way of improving work motivation. Active involvement in management decisions helps the workers feel that they are part of the team. Employees, specifically construction craftsmen, feel that they have something of value to contribute to

the project and they will more likely accept working conditions and provide productive performance if their opinions and suggestions are legitimately considered. Employee participation in establishing goals helps management to establish goals that relate to individual needs while fitting organizational objectives. Similarly, by management and labor working together, motivation does not become misdirected toward personal interest pursuits. When employees participate in developing performance criteria, they have a clearer understanding of the performance required and the organizational mission. Also, workers often are the most knowledgeable persons about the job they perform. Participative management helps to achieve work satisfaction.

4.9 Recognition and Status

Recognition for good performance provides positive reinforcement. Recognition projects self-worth to an individual's peers and family. Things as simple as honest praise and compliments lead to improved performance. Recognition stresses the positive aspects of behavior. Chapter two indicated that positive reinforcement is the preferred method of behavior modification. Human nature is such that individuals have a notably better response to the positive than the negative. Positive factors motivate and make the individual feel good, safe, and secure (Maslow). Negative influences create fear. When an individual reacts to fear the individual is driven to avoid the unpleasant, but, he is not

motivated to provide the desired performance. Praise and recognition also tend to satisfy the ego needs (Maslow).

Recognition is also listed by Herzberg as an effective motivator. Recognition also can be provided by relating to the status needs of the individual. Granting additional authority to an employee in his activity and increasing the accountability of the individual for his work provides recognition and status. Giving an individual a complete natural unit of work provides recognition and status. Participative management also supports the individual's status needs. Recognition and status also provide for the realization of self-fulfillment needs. In summary, recognition in varying forms provides for the attainment of the higher-level needs portrayed by Maslow.

4.10 Advancement and Job Enrichment

According to Maslow's, Herzberg, and McClelland's theory, employees desire a chance to advance and gain new experiences. Management needs to address these needs. An employee should be able to see what he or she must do to advance in an organization and should be given the opportunity whenever possible. The employee needs to feel that job assignments are stepping stones toward advancement in the organization. The individual also has a need to refine and improve his or her skills. This can be accomplished through an effective organizational training program.

The manager should realize that individuals view different advancement opportunities in different ways. Individual's may be content with their present situation. If the manager provides such an individual with fair pay, safe working conditions, challenging work, training, and job security he will continue to be motivated. The individual will feel that his opportunity for advancement lies in the experience and expertise that he gains through his present position. This is especially applicable to the construction worker. Instead of desiring advancement to a supervisory position, the worker might seek advancement or placement in a job that builds upon his craft skills. He may view himself as more marketable if he possesses greater craft skills than supervisory experience.

4.11 Co-worker Relationships

The manager among all other things must recognize that many workers have close ties to their group. Workers want to work with their buddies. This fact is very applicable to the construction industry. Van Zelst conducted an experiment to measure the effect on construction site's production costs when friends worked together.²⁹ In the study, work crews were formed in response to indicated worker preferences. Conditions before the study were duplicated. The results based on cost records indicated a total savings in production cost of approximately 5 percent. There was a substantial reduction in turnover, and the workers reported that they were happier with their work. In conclusion the report stated that work-improvement

techniques that would enhance the chances of compatible groups working together would be accepted favorably and improve work motivation.

4.12 Job Safety

The physical work place has a very significant impact on worker motivation and productivity. When the work system is not hazard free, much time and energy is spent on trying to protect oneself. The manager must be attentive to maintaining the work place safe and free from hazards and should make the environment as pleasant as possible. Many professions have inherent risk that will exist as long as the job is being performed. Workers in those professions realize those inherent risks. The key then to motivating those workers or more importantly preventing them from being demotivated is to provide safeguards against the inherent hazards. Although taking time to implement a safety program may at first detract from productivity, it will enhance productivity ten fold as the work proceeds. The manager must always keep in mind that hazards, for which injury may result from, if not safe guarded against inhibits productivity and can severely demotivate the work force. If Maslow's theory is applied, workers are geared toward survival, and any act or failure to act on management's part that negatively affects this need will cause dissatisfaction of man's most basic need.

4.13 Motivators/ Demotivators Summarized

Doctor Paul Mali provided guidelines for using motivators.³⁰ His guidelines best summarize what the manager should consider when establishing an organizational motivation program. The following is a few of Mali's guidelines that are applicable to the construction manager:

1. Motivators do not have the same effect on every individual.
2. The values of motivators change over time. During the motivation/performance cycle motivators must be evaluated and updated to meet the present situation.
3. Multiple motivators are often required instead of one or two motivators.
4. Individuals should have, to varying degrees, the opportunity to contribute to the development of their own motivators.
5. Motivator's are most effective when they project an individual's self worth.
6. Individual's have varying needs. Being able to identify these needs through individual assessment will provide aid in identifying the motivators that stand the greatest chance of succeeding.
7. Motivators can become demotivators if sensitivity to individual needs is not maintained or they are to much or too little.

In deciding which motivator to use, the manager can use the writings of this chapter as a guide. The list of motivators described in the previous sections are not intended to be definitive or all inclusive. There is no one complete list of motivators. This chapter aims at helping the manager acquire insight into what motivators are and how they are used. The manager will understand that not all motivators will serve as motivators in every situation. As indicated in statement seven above, it is possible that a motivator may become a demotivator when used in the wrong situation or with the wrong individual. Work Motivation is not a science, but an art. There is no detailed technique to be followed. Yet, the manager who can acquire an insight into employee needs, decide on the organizational objectives, establish alignment between organizational objectives and individual needs, eliminate demotivators, and use motivators that relate to performance will most definitely have a positive impact upon productivity.

CHAPTER FIVE MOTIVATION IN THE CONSTRUCTION INDUSTRY

5.1 Motivation Applied In The Construction Industry

All motivation techniques applied successfully in most industries are not necessarily effective in the construction industry. The construction industry is different, and these differences need to be recognized. Notwithstanding these differences, the principles discussed in the preceding chapters still apply. The construction manager must understand the limitations that are imposed by the very nature of the industry when attempting to set up a motivation program. Considering the differences, the construction manager must be resourceful and creative. This chapter explores those factors that are unique to the construction industry and explains their impact upon motivation and performance. The chapter concludes by presenting a few techniques that, despite the industry's differences, have some merit in serving the industry in an attempt to motivate the work force.

5.2 The Construction Industry Differences

The construction industry is distinguishable from any other industrial community. The theories of motivation and productivity performance when applied must reflect this distinct status to be effective. The differences are examined in the proceeding pages.

5.2.1 Project Employment

In the construction industry the work force works for the project, not the construction company. During the course of the year the construction worker may have worked on several projects, unlike the factory worker who works for a single company, attends an annual christmas party, gets an annual report of the company's profit and looks forward to a company pension. The construction worker is a migratory sole who seldom if ever establishes a lasting unity with one construction firm. His or her tenure of employment with any one firm is indefinite and transient. As such, the construction worker rarely establishes any deep rooted loyalty to any one firm.

5.2.2 Union Shop Influences

Unions provide a means by which worker's rights are protected. Unions negotiate for wages, hours, and working conditions. Unions do address some of the very same issues that lead to the satisfaction of worker's needs. While it is true that unions make important contributions to the operation of the construction industry and safeguard employee rights, the unions do impose limits upon the motivation programs that the construction manager may implement. Unions promulgate work rules that pertain to the employment of its members. Some work rules are very restrictive and increase cost, unnecessarily prolong construction time, and interfere with management prerogatives. The limitations that restrict a

construction manager's ability to carry out effective motivation programs include: prohibitions on use of labor-saving methods and tools, inflexible application of overtime requirements, craft jurisdictional requirements, limitations on daily production, requirements that skilled workers do unskilled jobs, regulated break periods, and hiring procedures. Sometimes the union also may indirectly dictate how the job will be done, and what materials will be used. Also, through negotiated labor contracts, unions established fixed wages for its members. Therefore, monetary rewards for superior performance are not generally available.

5.2.3 Open Shop Influence

In the open shop arrangement the construction company is not signatory to a labor agreement with a construction union. The construction manager hires his work force from the open market without regards to union status. The construction manager can manage the project. The construction manager can recruit, hire, train, promote, or discharge as he or she desires. The open shop provides the construction manager with the greatest flexibility in establishing and implementing a multi-faceted motivation program. The open shop construction firm may decide the size of the work crews. They may arrange crews as they desire and attempt to group workers according to their preference thus improving motivation. The construction manager may pay workers according to their ability and performance. The manager can use monetary incentives to motivate.

One significant factor that relates to job security is that the construction manager may assign workers according to need and can utilize labor effectively. When the level of work volume is down, skilled personnel can be assigned to lower task levels, thus keeping these workers with the firm until the work volume again increases. This single fact can greatly motivate workers to work hard and develop their skills.

5.2.4 Weather

The effects of weather are mentioned here simply to highlight the fact that, especially in the construction industry, adverse weather is an impediment to productivity. As such, adverse weather can demotivate the work force. It was previously mentioned that any factor that impedes production can demotivate the work force. While the construction manager cannot completely safeguard against the effects of adverse weather, if he or she takes weather into consideration, he or she will minimize its adverse impact upon production.

5.3 Motivation Within The System

It has already been stated that the construction manager must be resourceful and creative in motivating the construction worker. Given the differences and uniqueness of the construction industry, a few of the motivators that were mentioned in chapter four are

presented again in this chapter and related specifically to construction.

5.3.1 Incentives

There is a wide use of incentives in industries other than construction. Incentives provide tangible rewards when given to those who perform at a given level. The measure used to decide those rewards should be carefully set and should be clearly linked to performance. Profit sharing is the most frequent type of incentive program used by construction companies.³¹ Yet, the effectiveness of company-wide incentive programs for construction firms has not been determined. Incentive programs for a construction firm must be on a case by case basis for each project. The construction manager can best design an incentive program that meets the conditions of the project before project start-up.

5.3.2 Providing For Job Security

Providing for job security in the construction industry is particularly difficult. Most construction workers expect to be changing jobs from time to time. There is no conclusive workable plan that fully addresses this issue. Yet, there are a few things that can be done by the construction manager. Economists argue that better methods mean lower costs which mean more construction.³² The construction manager must seek and implement work improvement

techniques. Additionally, the union halls by working with the local construction firms can maintain a baseline steady work force that gets priority in project assignments. These are only two suggestions. But, any program that demonstrates management's intent to provide job security will strengthen worker motivation.

5.3.2 Quality Circles

The concept of quality circles originated in Japan. A quality circle is defined as a small group of volunteers performing similar work who meet regularly to identify and analyze problems they encounter in their work environment, to propose solutions to management, and assist management with implementation. Quality circles can be effective as a form of participative management. Quality circles include a member of management, whether it be the project supervisor or the project engineer. In quality circles, each member of the group can raise an issue or issues they feel is a problem and each member may propose ideas for resolving problems. Through this method, cost saving ideas can be generated, common goals can be generated, organizational objectives can be agreed upon, work satisfaction can be achieved, a more cohesive work unit can develop, and demotivating factors can be eliminated. Quality circles provide a means of generating effective communications. Quality circles also provides management with a means to assess and understand employee needs. John D. Borcharding noted that construction may be the only industry where participative decision making should occur

naturally because of the challenge of the work environment.³³ Foreman have to make many day-to-day decisions; they must also participate with project management in establishing such job site policies as coffee breaks, crew sizes, and assignments. Craftsmen have an opportunity to participate in method selecting decisions and help mesh the work done by different trades.

5.3.4 Work Facilitation

Since mankind's beginning, the individual has sought to build things never before built or become the best builder of whatever the individual builds. Humans are compulsive builders. The desire to build is already there. The individual takes pride in becoming a capable builder. The craftsman wants to see the results of his endeavor. For the most part, human nature is such that craftsmen want to leave behind a product for which they can proclaim proud ownership. Therefore, one could conclude that construction work in itself is inherently satisfying. Construction workers get satisfaction from seeing their efforts produce permanent structures. The art of building, having the ability to accomplish lasting results, demonstrating one's skills, and building "something from nothing" with one's hands satisfies the ego and leads to self-fulfillment. This would tend to make construction workers easier to motivate by simply facilitating the work. Removing demotivators facilitate the work. The means by which the construction manager can accomplish this is to: (1) insure that the project is well planned,

(2) provide workers with proper instructions, equipment, tools, and materials, (3) keep the job site clean and free of hazards, (4) structure the job site to ensure efficient material flow and minimize worker inconvenience, (5) and remove any other hindrances that impede upon the worker's ability to accomplish the job.

5.3.5 Construction Worker Recognition

On average, construction workers receive little or no recognition for their efforts.³⁴ Praise and status provided by the construction manager satisfies ego needs. Recognition can include craftsman-of-the-month awards, crew-of-the-month awards, recognition of the entire project, an active public affairs program, and other methods. Status can be conferred on the worker by the decisions that he or she is empowered to make. The construction firm owner also might decide to have the construction crews present during ribbon cutting ceremonies, especially in large complex projects. In essence, the firm's management should share the visibility and prestige that comes with the accomplishment of a construction project with the labor force.

5.4 Summary of Motivation In Construction

This chapter has stressed that the construction industry is different from other industries. As such, the construction manager must recognize these differences when applying motivation techniques.

Probably more so in construction than in other industries, the key to motivating the construction worker appears to be in organizing the project and its resources. Job facilitation seems to rank among the most important factors to achieving construction job motivation. Individual or group recognition also provides strong motivation. Non monetary recognition serves as positive reinforcement, and is usually the least expensive motivation method available. The construction manager should realize that construction workers are artist of their trade and as such they possess a special ability that can and should be considered unique. When the firm provides the means to accomplish the project on time with quality results, and gives thanks and recognition they deserve, the construction worker will continue to be motivated when he or she works for that firm. The use of quality circles provides the construction manager with a means by which he or she can improve the work place and satisfy worker needs while simultaneously creating a sense of belonging. This can be very important in an industry in which workers work more for the project than the firm. The underlying fact remains; the construction manager must have an appreciation and understanding of human behavior, individual and group needs, and motivation techniques. And, he or she must be creative in making them fit into the construction industry.

CHAPTER SIX CONCLUSION AND RECOMMENDATIONS

6.1 Motivation Works

Management can no longer rely on old incentives to stimulate performance. The authoritarian approach to management is outdated and ineffective. Productivity is suffering and new attitudes, concepts, and methods are required to remedy the situation. Management by motivation is the answer to the problem. Motivation gives direction to human behavior by arousing, sustaining, and directing it toward the attainment of some goal. Individual performance is based in part on motivation. Motivating the work force leads to improved performance and increased productivity. The construction manager needs to be sensitive toward human motivation. Every manager should be educated in motivation and human behavior. Understanding human behavior and motivation is as important to construction project management as is project organization and scheduling, contract familiarization, estimating, quality assurance, engineering, financial management, equipment operations, or material procurement. When the construction manager understands the most basic concepts of human behavior and motivation theory, he or she is equipped with the means to provide for the motivation of the work force. Motivation is a cycle made up of various steps in which each step is important and cannot be neglected if the motivation process is to work effectively. Motivation begins with needs. Individuals have many and varied needs. Construction managers must provide

employees with some means of satisfying those needs. Yet, satisfying those needs cannot be accomplished if the individual lacks the ability or training to perform the designated function. Ability is the second important ingredient to individual performance. Motivation of the employee will be achieved if the manager provides work satisfiers that address needs, provides training, establishes reasonable expectations, communicates those expectations, and most importantly eliminates or minimizes the effects of negative work practices.

6.2 Individual Behavior

This report addressed behavior as a separate chapter because human behavior is what motivation theory is directed toward and the construction manager should have a basic knowledge of that which he or she is attempting to direct. Chapter two presented a very rudimentary explanation of a very complex subject. Its intent was to make the construction manager aware of the factors that influence behavior. When the manager is aware of the factors that influence behavior, he or she will have an awareness of the underlying reasons for why people behave the way they do and may be able to predict how the individual will behave under various conditions. The chapter concluded with the presentation of behavior modification. Behavior modification assumes that behavior results from the habitual pairing of a stimulus and response. The best way to modify behavior is to provide positive reinforcement.

6.3 The Motivation Performance Cycle

Chapter three introduced the ten part motivation performance cycle. This cycle greatly enhanced the presentation of the various motivation theories. The chapter was aimed at helping the construction manager to learn how to motivate. The basis of motivation is built upon the satisfaction of individual needs. Satisfaction of those needs is not an easy task. The various theories help to explain how the individual is motivated. The motivation theories are interrelated. No one theory can stand alone in the motivation cycle. When the construction manager understands the gist of the motivation theories, he or she has an arsenal of knowledge from which to draw upon when attempting to develop and implement a motivation program.

6.4 Motivators and Demotivators

General motivation techniques that have been used include: financial incentives, providing proper help and equipment, providing job security, goal setting, worker participation, and recognition. Yet, the most important motivator, particularly in construction is to remove or minimize the demotivators. Demotivators have a very detrimental effect on productivity. Remove work demotivators and work performance will improve. If motivators are implemented without removing the demotivators, the effectiveness of those motivators will be greatly limited.

6.5 The Construction Project Motivation Program

Development and implementation of a motivation program for construction projects is as important as is the development of a construction schedule. Each project can benefit immensely from a motivation program that is designed for that project and takes into account the uniqueness of the industry. The construction manager must understand the differences inherent in the construction industry when designing a motivation program. The most important undertaking that the manager can take to improve worker motivation is to remove or minimize impediments to productivity. In general, the overwhelming majority of construction workers arrive at the project motivated. Yet, time and time again, projects have demotivators that deflate individual motivation to the point that the worker is left unhappy, dispirited, and demotivated. To correct this, the actions on the part of management can be few and simple:

1. Provide appropriate and complete information. The workers need to know what is expected and what is to be accomplished.
2. Provide proper well working equipment and tools.
3. Provide required material on time.
4. Insure that a well working, streamlined safety program is in effect. Constantly strive to eliminate or safeguard against work hazards
5. Insure that quality control inspections are quick and timely and that quality control inspectors are competent and that they are prepared when they visit the job site.

6. Minimize redoing work by providing for the proper interpretations of plans, specifications, and building codes before the actual work is in progress.
7. Minimize late design changes.
8. Plan for foul weather.
9. Minimize problems with crew interface. When planning the work sequence, consider crowding conditions caused by the presence of too many crews in one location.
10. Allow workers to contribute to the organization and planning of the project. Solicit worker ideas and suggestions.
11. Provide suitable recognition for good work.

The most successful construction companies will be those that implement sophisticated motivation programs and that maintain good communications between management and employees. Motivation programs should be designed with consideration given to the following aspects:

1. Find ways to learn about the employees. Learn what needs they have. Develop an understanding of their personality, skills, and abilities.
2. Establish quality circles.
3. Provide ample training opportunities.
4. Identify goals and objectives. Provide feedback. Link organizational objectives with individual needs.
5. Structure jobs so that they are challenging, provide variety, and lead to self-regulation.

6. Improve productivity measurement indexes. Keep the work force informed as to productivity.
7. Attempt to group crews according to worker preference.
8. Where possible provide flexible working hours.
9. Provide worker and crew recognition.
10. Exercise caution when using financial incentive programs. Above all, in regards to money, insure that pay and fringe benefits are at least adequate.
11. Provide profit sharing opportunities as an incentive program. The profits can be prorated based on the crew's performance. Crews that had a positive impact on the project schedule and delivered a quality product free from rework or warranty claims would share in the cost savings and generated profit. The program would be similar in fashion to contracts that provide time incentives.
12. On union type projects, work closely with the unions to establish job security. The various construction firms can work with the local unions to establish a minimum work force that is guaranteed employment on construction projects in the geographical area. Workers would be accepted into this work force based on demonstrated performance.
13. Query the work force through use of surveys to identify demotivators affecting the work.

6.6 Recommendations For Future Study

One area that will continue to present a problem on the motivation cycle is job security. Job security is a human need that has been detailed in all the need theories. Providing for job security in the construction industry is difficult. Often construction workers are required to pickup their belongings and their families and move to a new location that provides construction job opportunities. New methods to improve this shortfall should be developed and analyzed. This will have to be a common effort among owners, contractors, and unions.

Another area that needs to be evaluated is the restructuring of unions in the construction industry. Unions serve an important purpose that cannot be and should not be discontinued. Unions have the potential to eliminate demotivators and provide for the development of effective motivation programs. In the construction industry, more so than in other industries, unions are the means of hiring. They are a means to providing job security. They can be structured to work closely with project management to develop work schedules, implement motivation programs, and provide for job security. The practicality of this proposal is uncertain. The only way to view its merits is to establish a prototype program and monitor it over a period of time, probably a five year period.

REFERENCES

1. O'Toole, James, Making America Work, Productivity and Responsibility, The Continuum Publishing Co., New York, 1981, P. 1.
2. Helligriegel, Don., John W. Slocum and Richard W. Woodman, Organizational Behavior, 4th ed., West Publishing Co., Inc., St. Paul, 1986, p. 170.
3. Ibid.
4. O'Toole, op. cit., p. 185.
5. Dessler, Gary, Organization and Management, Reston Publishing Co., Inc., Reston, Va., 1982, p. 261.
6. Ibid.
7. Maddi, S. R., Personality Theories: A Comparative Analysis, 4th ed., Dorsey, Homewood, Il., 1980 p. 10.
8. Hall, C. S., and G. Lindsey, Theories of Personality, 3rd ed., Wiley Publishing Co., New York, 1978, pp. 17-19.
9. Kluckholm, C., and H. A. Murray, Personality in Nature, Society and Culture, Knopf, New York, 1948, p. 35.
10. Hellriegel, op cit., p. 66.
11. Ibid.
12. Gage, N. L., and David C. Berliner, Education Psychology 3rd ed., Houghton Mifflin, Boston, 1984, p. 252.
13. Nuttin, Joseph, Motivation, Planning, and Action, Lawrence Erlbaum Assoc., Inc., Hillside, NJ, 1984, p. 1.
14. Madsen, K. B., Theories of Motivation: A Comparative Study of Modern Theories of Motivation, Copenhagen, Mucksgauard, 1959, p. 339.
15. Grant, Philip C., The Effort-Net Return Model of Employee Motivation, Greenwood Press, Inc., 1990, p. 2.
16. Higgins, James M., Human Relations Concepts and Skills, Random house, Inc., New York, 1982, p. 27.

17. Ibid. p. 35.
18. Blake, R. R., and J. S. Mouton, "An Overview of The Grid" Training and Development Journal, May 1975, pp. 29-37.
19. Dessler, op cit., p. 308.
20. Lawler, Edward E. III and Richard Hachman, Perspectives on Behavior in Organizations, McGraw-Hill, New York, 1977, p. 34.
21. "Contractor Attitude on Personal Training", Construction Contracting, July/August., 1981.
22. The Business Roundtable, Construction Labor Motivation, A Construction Industry Cost Effectiveness Report A-2, New York, 1982, p. 17.
23. Higgins, op cit., p. 174.
24. Oldam. Greg, "The Motivational Strategies Used by Supervisors", Organizational Behavior and Human Performance, Vol 15, 1976, pp. 66-68.
25. McGregor, Douglas, The Human Side of Enterprise, McGraw Hill Book Co., New York, 1960.
26. Parker, Henry W. and Clarkson H. Ogleby, Methods Improvements For Construction Managers, McGraw Hill Book Co., New York, 1972, p. 121.
27. Garner, Couglas F., John d Bordherding, and Nancy M. Samelson, Factors Influencing The Motivation and Productivity of Craftsmen and Foreman on Large Construction Projects, The University of Texas at Austin, August, 1978.
28. Herzberg, Frederick, "One More Time: How Do You Motivate Employees?", Harvard Business Review, January-February 1968, pp. 53-62.
29. Van Zelst, R. J., "Sociometrically Selected Work Teams Increase Productivity", Personnel Psychology, Vol 5, 1982, pp. 175-185.
30. Mali, Paul, Improving Total Productivity, John Wiley & Sons, Inc., New York, 1978, pp. 275-277.
31. The Business Roundtable, op cit., p. 7.

32. Parker, op cit., p. 123.
33. Borcharding, John D., "Participative Decision Making in Construction", Journal of The Construction Division, ASCE, December, 1977.
34. Lawler, Alexander, and John D. Borcharding, Assessment of Financial Incentive Programs For Construction Labor Force, University of Texas at Austin, August, 1980.

BIBLIOGRAPHY

Adrian, James J., Construction Productivity Improvement, Elsevier Science Publishing Co., Inc., New York, 1987.

Borcherding, John D. and Douglas F. Garner, "Motivation and Performance of Craftsmen and Foremen on Large Projects", Transactions of The American Association of Cost Engineers, American Association of Cost Engineers, Morgantown W Va., 1980.

Buehler, Vernon M. and Y. Krishna Shetty, Productivity Improvement, AMSCOM, New York, 1981.

The Business Round Table, Construction Labor Motivation, A Construction Industry Cost Effectiveness Report A-2, New York, 1982.

Chung, Kae E., Motivational Theories And Practices, Grid, Inc., Columbus, Ohio, 1977.

Clough, Richard H., Construction Contracting 5th ed., John Wiley & Sons, New York, 1986.

Dessler, Gary, Organization and Management, Reston Publishing Co., Inc., Reston, Va., 1982.

Feldman, Max, "A Contractor Looks at the Causes of Construction Contract Disputes", The American Journal, American Arbitration Association, Vol 27, No. 3, September, 1972.

Grant, Philip, C., The Effort-Net Return Model of Employee Motivation, Quorum Books, New York, 1990.

Hellriegel, Don, John W. Slocum, and Richard W. Woodman, Organizational Behavior 4th ed., West Publishing Co., New York, 1986.

Herzberg, Frederick, "One More Time: How Do You Motivate Employees?", Harvard Business Review, January-February, 1968.

Higgins, James M., Human Relations Concepts and Skills, Random House, Inc., New York, 1982.

Klienbeck, Uwe, Hans-Henning Quast, Henk Thierry, and Hartmut Hacker, Work Motivation, Lawrence Erlbaum Associates, Hillsdale, NJ., 1990.

Landy, Frank J. Psychology of Work Behavior 4th ed., Brooks/Cole Publishing Co., Belmont, Ca., 1989.

Mali, Paul. Improving Productivity, John Wiley & Sons, New York, 1978.

Motivation of Personnel, edited by Dale A Timpe, Kend Publishing, New York, 1986.

Nuttin, Joseph, Motivation, Planning, and Action, Leuven University Press and Lawrence Erlbaum Associates, Hillsdale, NJ., 1984.

O'Toole, James, Making America Work: Productivity and Responsibility, The Continuum Publishing Co., New York, 1981.

Parker, Henry W. and Clarkson H. Ogleby, Methods Improvements For Construction Managers, McGraw Hill Book Co., New York, 1972.

Sanzotta, Donald, Motivational Theories & Applications for Managers, AMACOM, New York, 1977.

Wortman, Camille B. and Elizabeth F. Loftus, Psychology, Alfred A. Knopf, Inc., New York, 1981.