THEFT CONTROL ON SHIPPING AND RECEIVING DOCKS

Thesis for the Degree of M. S.
MICHIGAN STATE UNIVERSITY
Ronald Eugene Jorgensen
1965

THESIS

LIBRARY
Michigan State
University

THEFT CONTROL ON SHIPPING AND RECEIVING DOCKS

By

Ronald Eugene Jorgensen

AN ABSTRACT OF A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE

School of Police Administration and Public Safety
College of Social Science

1965

APPROVED: _____
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(Member)

ABSTRACT

THEFT CONTROL ON SHIPPING AND RECEIVING DOCKS

by Ronald Eugene Jorgensen

Theft control on shipping and receiving docks represents a major problem confronting industry. Although no estimate of dollar loss resulting from such thefts was discovered, various high ranking management and industrial security personnel who were interviewed prior to performing this research project, categorically expressed concern for the frequency of theft cases originating on docks.

The objective of this study was to identify and evaluate those factors which were suspected to be most significant in controlling theft on shipping and receiving docks.

An attempt to study systematically dock theft control appears to be a new area of study. Some articles in various periodicals concerning industrial security in general present cursory discussions of the subject. A few books which are relative to the industrial security profession do likewise. However, no studies or research projects have been entirely devoted to the study of this specific aspect

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of industrial security; at least none was found by the investigator. Therefore, this study probably represents the initial research in this aspect of industrial security.

This research was conducted at fifteen plants of a large manufacturing company in the midwest. These fifteen plants included a variety of industrial operations such as service parts warehousing, manufacturing, assembling, or various combinations of each. These plants were distributed over a five-state area and represented various divisions of the parent company. Because of the nature of much of the material and information made available to the writer, the company included in this study requested that it not be mentioned by name or inference in this thesis.

This study was approached under the impression that many factors play a significant role in thefts from docks. Among the factors initially suspected to play significant roles were: 1) the physical arrangement of dock areas, 2) the continual availability of perpetual book inventory figures, 3) the existence and effectiveness of personnel security measures regarding dock personnel, and 4) the physical handling of material on the dock and the corresponding flow of documents. These factors were studied and evaluated by means of a selected review of the literature, interviews with appropriate management and security personnel at both

the company and plant levels, analysis of dock theft case reports, and extensive field observation at each of the fifteen plants included in this study.

The results of this study appeared to support the belief that the four factors related above do play significant roles in dock security. However, other factors were also identified which were felt by the writer to play significant roles in protecting docks from theft. It seems that many of these factors are interrelated and influence the security of a dock to varying degrees.

Although this research project was conducted at only fifteen plants in one industry, all of which were members of the same company, it is suspected by the writer that many of the factors identified and evaluated in this thesis may have general applicability to other plants and other industries. There may also be other factors which influence dock security which were not identified in this study, but the importance of the factors which were identified must be recognized. Perhaps, they may serve as the foundation for future research in dock theft control.

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ACKNOWLEDGMENTS

To those company officials whom I contacted, I wish to express my sincere appreciation for their guidance and assistance and for making the necessary arrangements to allow the writer access to the various sources of data needed in the preparation of this thesis.

The counsel, advice, guidance, and criticism offered by my advisor, Dr. Leon H. Weaver, during the preparation of this thesis is gratefully acknowledged.

A most sincere appreciation is expressed to my parents, Victor N. Jorgensen and Gwendolyn A. Jorgensen, for their financial assistance and encouragement throughout my collegiate years.

The writer would especially like to express his endebtedness to his wife, Mary J., for her patience throughout the preparation of this thesis and her perceptive editing and expert typing of the first draft. It is to her that this manuscript is dedicated.

R. E. J.

November, 1965

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CHAPTER I

INTRODUCTION

This thesis represents an attempt to study a very specialized phase of industrial loss, ~~namely~~ that of theft from shipping and/or receiving dock areas.[1]

Thefts of material from docks represent a very small percentage of the total number of the known industrial thefts over any given period of time. However, these relatively few cases are usually characterized as involving higher value and a greater degree of complexity in *modus operandi* when contrasted with the usually unsophisticated lunch pail and pocket thefts stereotyped by the casual observer as being the most significant type of industrial theft.

Dock thefts seem to be of such a nature, due to their infrequency and lack of publicity, that little concern is generated until a firm has been victimized by such a theft. In most cases, not until a company has been dealt a severe financial blow as a result of this type of theft does it demonstrate due concern for the always existing potential

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[1]Throughout the remainder of this thesis, the term "dock" is used to indicate shipping and/or receiving dock unless otherwise specified.

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for its occurrence. Complacency regarding security of material in dock areas seems to be the rule rather than the exception in American industry today. Despite this attitude, the problem does, in fact, exist and must become the concern of those in cognizant management positions if practical solutions are to be discovered for this increasingly common type of loss.

In recent years, the industrial security function has been called upon to make major contributions in the prevention of this type of theft. For the most part, this trend has occurred subsequent to the evolution of industrial security departments from the "watchman" stage into more competent, well trained, and professionally oriented departments.

Industrial security is playing a more significant role in the American industrial setting each year. There are many reasons for this trend. Because of the unparalleled industrial expansion of recent decades which has resulted in tremendous concentrations of value in single large industrial complexes, top management recognizes the need for adequate protection of this property from destruction due to fire and natural disasters. Industrial security is also now playing a major role in protecting the industrial location from various types of theft which are definitely detrimental to the company's profit structure and to its ultimate competitive position. A second major reason for the rapid emergence of the industrial security profession appears to lie in the

caliber of personnel occupying the positions of responsibility in the security field in this era. Today there is an increasing number of professionally oriented and university educated industrial security specialists who are capable of grappling with the complex and difficult problems which an industrial security executive encounters.

This professional type of security organization has emerged, for the most part, largely since World War II and with additional growth within the last five to ten years. The modern concept of industrial security is quite different from the inefficient and unprogressive security organizations which existed in the majority of plants prior to World War II.

The World War II period brought the best that industrial security had to offer because of the stringent security regulations placed upon American industry during this period of international crisis. Top industrial executives for the first time began to realize the potential value of a properly trained industrial security force and its possible contribution to the economic well being of the company. This may have been the first point in time that industrial security was generally recognized in a positive light. The post World War II period, and its need for continued secret weapons and military development has become an impetus for the continuation of this trend.

The industrial picture of the 1960's has been a generally bright one. United States industry has reached a level of production, efficiency, and prosperity which has surpassed even the wildest dreams of the most optimistic economic forecasters. Paralleling this miraculous rate of economic growth has been almost as great an increase in the value of various types of industrial theft, dock thefts being one of the major contributors. Companies have realized that a reduction in the value of industrial losses due to theft can greatly enhance their profit picture. As a result many company security staffs and security consultants are searching for practical answers to the common industrial problem of theft of materials from dock areas.

I. THE PROBLEM

Statement of the problem. Losses resulting from various methods of dock theft show every sign of increasing throughout American industry today. The financial losses involved in known cases on record constitute a substantial monetary loss to industry each year. No meaningful financial loss figures resulting from dock thefts were discovered; however, nearly all plant protection personnel interviewed concerning this subject indicated a substantial increase in the number and frequency of such incidents during the past years. With the potential for theft increasing as a result of industrial expansion and increased volume of material being

handled on docks and with the seemingly general increase in crime of this nature, there is immediate need for research on this problem in an attempt to curb a portion of these losses.

The approach. The problem which has been chosen as a research topic for this thesis apparently is one on which little or no formal research has been performed. Literature relating specifically to the problem is also ~~quite~~ lacking. As a result, it became necessary that opinions of the writer and others who have had work experience in the industrial security profession constitute the basis upon which the approach to this thesis was formulated. Creating ~~even~~ additional barriers to scientific research is the fact that present industrial shipping and receiving operations and dock physical arrangements simply do not present situations which lend themselves to adequate settings for the rigorous scientific testing of an hypothesis. For this reason the problem is approached from the standpoint of attempting to identify and evaluate the significance of certain security factors which, on the basis of personal work experience and other knowledgeable opinions, are suspected to be the most important in the securing of material on docks. The more important of these factors may be summarized as follows:

1. The physical arrangement of docks for the purpose of controlling the movement of truck drivers who are making pickups and/or deliveries.

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2. The availability of perpetual book inventory figures in order that shortages may be noted quickly and investigated as soon as possible.

3. The existence and effectiveness of personnel security measures regarding dock personnel.

4. The physical handling of material on docks and the corresponding flow of documents.

Scope of the problem. This study is concerned with an analysis of industrial shipping and receiving operations from a security point of view.

There are many means of shipping and receiving utilized in modern industry. The scope of this thesis is confined to truck traffic, as opposed to railroads, ships, barges, or other modes of transportation. Both common carrier and company-owned-and-operated trucks are included in the scope of the study.

Generally, no consideration is given to employee theft in which material is removed from the plant on the employee's person. However, there is one major exception to this general statement. Individual employee thefts, regardless of how the material is removed from the premises, are considered if the stolen material is taken from the immediate dock area as opposed to warehouse bins or from containers along the assembly line.

Therefore, the major types of theft considered in this thesis include those which are accomplished by means of various types of trucks, both common carrier or company-owned-and-operated trucks, and characteristically involve

collusion between dock employees and truck drivers, and those thefts from dock areas by individuals, the material usually being removed from the premises by some means other than trucks, generally on the person's body or in his lunch pail.

The truck comes within the scope of this research project only while it is moving about within the plant and primarily while at the dock. Security procedures at plant entrances and exits are not a concern of this study. Therefore, the activities of the truck and its driver while within the plant, and especially while at the dock location, constitute the major concern of this study.

An equally important segment of this study concerns personnel security measures concerning company employees involved in shipping and receiving operations, such as persons occupying such job classifications as foreman, picker, packer, checker, material handler, forklift truck driver and other company personnel who participate in normal shipping and receiving operations. Special personnel security consideration is given to personnel who are responsible for checking material on and off trucks which appear at the docks.

Attention to the physical layout and arrangement of docks comprises an important Chapter of this thesis. The physical arrangement and design of docks is suspected to be a major consideration when evaluating the theft potential of a given location.

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The scope of this thesis also includes a brief discussion of the physical handling of material on docks and the corresponding flow of documents. This is a general discussion considered only from a security point of view rather than an analysis of the many fine points and particulars of existing shipping and receiving procedures.

The method of inventorying stock at various locations within the parent company forms another major area of interest in this thesis. These methods and procedures are also studied primarily from a security point of view.

II. METHODOLOGY

Sources of information. Initially, a great deal of library research was performed in an effort to form a proper foundation upon which to launch an investigation of this type. This research centered primarily around various business administration periodicals and publications. Appropriate selections from industrial security, insurance, and various police oriented publications were also included. The majority of selections consulted did not treat the problem of dock security per se; however, they did contain some discussion relevant to the problem being studied. The library research is summarized in Chapter II of this thesis, which is entitled, "Review of the Literature."

The second and by far the most significant source of information utilized in the preparation of this thesis was a

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large manufacturing firm in the midwest. Plant protection personnel who coordinate plant protection activities at the various locations included in this study assisted by making the necessary arrangements so that the required data could be obtained.

All necessary clearances were obtained from the company plant protection section. It was this office that provided the basic guideline and structure for this study. Company plant protection officials also provided information regarding the type and extent of centralized control exercised over the industrial sites included in this study. Relevant data were obtained from both the company and individual plant location levels.

In due respect for the privacy of the various industrial locations involved in this study, and to their parent company, every effort has been made to maintain their anonymity throughout this thesis. All plants included in this study have been assigned a number, which remains constant throughout the thesis.[1] Reference to individual plants is by number only. All identifying remarks concerning the parent company and individual plants involved are ficticious; however, factual descriptions represent actual situations.

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[1]The assignment of numbers by plant first appears in Table 2, Chapter IV.

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Methodology employed. In order to determine the significance of the suspected security factors in shipping and receiving operations which were related above, three approaches were utilized.

The initial data collection took the form of extensive field observation at each of fifteen pre-selected plants of a major manufacturing company. The plants included were located in Michigan, Indiana, Ohio, Illinois, and Wisconsin. All plants in the study had a plant protection force of some sort. They ranged in size from one to approximately one-hundred and sixty men. These plants were selected with the assistance of the company plant protection staff. The principal criteria for selection of the plants were:

1. High volume of material flow on docks.
2. Locations which ship and/or receive the type of material that has a high potential for misappropriation; items that are attractive and saleable.
3. Geographic accessability to Michigan State University so that travel and expenses could be kept at a minimum.

Two to four days were spent at each location depending upon the size of the particular plant and other factors which governed how rapidly the required data could be obtained. An effort was made to be present at each plant sometime during all shifts in order that a more accurate evaluation of dock security could be formulated. Therefore,

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many docks were observed during both operating and non-operating hours.

Pertinent data were recorded on an Interview and Field Observation Data Collection Form constructed by the writer so that uniform information would be compiled at each location.[1] An important aspect of the field observation approach should be emphasized at this time. The investigator conducted this extensive field observation in the capacity of a student from Michigan State University performing a survey of shipping and receiving procedures. This approach gave the investigator legitimate access to the shipping and receiving area and all personnel in this area. It was felt that by using this approach, the most natural and normal working procedures concerning dock operations could be observed. It was hoped that as little disturbance as possible would be aroused by utilizing this approach.

The second approach was a study and evaluation of theft cases which originated in dock operations. These case reports were obtained through two sources. The initial source of theft cases were reported in the files of the plants which were included in this study.

The second source of case reports was at the company plant protection staff level. These cases represented the more extensive and complex cases in which the company office

[1] See Appendix A for an example of the Interview and Field Observation Data Collection Form.

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was requested to become involved. These cases originated throughout the company; many of them were from plants not included in this study.

Regardless of the point of origin, all cases were thoroughly read and evaluated with the objective of determining the significance of the factors involved.

A third method of obtaining information was through personal interviews. Both at the company and plant levels, personal interviews were obtained with individuals in plant protection, shipping and receiving, auditing, inventory control, personnel, and other related areas. All interview data were collected on Interview and Field Observation Data Collection Forms.

It must be noted that this study has the advantage of company control of basic policies. All individual locations included in this study are plants of the various divisions of the same parent company; therefore basic policies and procedures may be considered to be constant, although considerable autonomy in operating matters is allowed at the plant level.

III. SIGNIFICANCE OF THE STUDY

The problem of thefts from docks is one of the major security problems plaguing industry today. Such thefts are relatively few in number when contrasted to the usual small-value-thefts of personnel concealing company property on

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themselves as they leave the plant; however, the dollar value of losses from shipping and receiving areas is usually quite substantial. For example, a recent dock theft at one of the plants included in this study was in excess of $5,500 worth of material.[1] Therefore, if only a small reduction in the number of thefts of this nature can be effected, the profit statement of many companies could be significantly improved.

Thefts from dock operations are the type which can result in devastating financial loss to its victim since many of these types of thefts involve large quantities of material and may be very difficult to detect, thus making it possible for this activity in some instances to continue for extended periods of time before being discovered.

The problem is one which must be brought within manageable limits in the near future for many marginal companies, and even some non-marginal companies may be driven out of business in our highly competitive business world as a result of this type of theft loss.

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[1]Ronald E. Jorgensen, "Dock Theft Case Analysis Data" (Summary of available dock theft case records dating from January, 1960, to June, 1965. These records were obtained from company plant protection record files and from the record files of many plants included in this study. This information was collected from February, 1965, to June, 1965. Hereafter, all dock theft cases cited will refer to this unpublished material.) Company record file on dock theft Case #2, dated June-September, 1964. Analysis of this case appears in Table 1, Chapter III.

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As a result of our highly competitive business society, every effort must be made to hold a line on costs, especially concerning the non-productive aspects of business, one of these being industrial security. Top management places industrial security in a very uneasy situation; it demands the highest level of security despite reducing industrial security expenditures to a minimum. Therefore, as in all areas of industrial security, another challenging aspect of this problem becomes one of providing the most possible security for the least amount of security manpower, equipment, and cost involved.

The writer feels that a significant contribution to the industrial security profession may be made if any type of practical and workable solution to the somewhat nebulous problem of dock security could be discovered.

IV. DEFINITION OF TERMS USED

Allied. Within the same company.

Book inventory. The amount of inventory that is supposed to be in a warehouse or storeroom according to receiving and disbursement statements.

City or local truck drivers. Drivers, usually associated with a common carrier, who have one terminal of the trucking company as a homebase. They work only in the city of that terminal and the local area surrounding the terminal city. These drivers perform pickups and deliveries at various

points in the area served by the terminal, such as an industrial plant, and transport material to the terminal where it is transferred to over-the-road vehicles for long distance transport to various destination points.

Common carrier. A person or company in the business of transporting material for a fee; it undertakes to serve all without discrimination.

Company carrier. A trucking fleet owned and operated by the company for which it transports material. It transports only material of that company.

Dock register. A form maintained at some docks within the plant which contains a record of the trucking company, driver, arrival and departure time, and various other pertinent security information.

Non-allied. Not within the same company.

Over-the-road-truck drivers. Drivers who haul material in sealed trucks from one terminal to another of their respective trucking companies. These terminals are usually located in larger cities. These drivers make no local pickups or deliveries.

Perpetual inventory. An inventory method in which a continual unit record is maintained on an inventory count sheet as material is received or disbursed. The accuracy of this record may be checked by physical inventory counts.

Personnel security. The suitability for holding a position of responsibility, such as that of handling

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valuable material and shipping and receiving documents on docks, as distinguished from government or political loyalty considerations.

Physical inventory. The actual amount of inventory of each part that is in a warehouse or storeroom. This figure is only found when an actual physical inventory numerical count is performed.

Receiving dock. A structure in an industrial plant, specially designed, to which material is brought to be received by the plant from a distant point. The material received may be either productive or non-productive material. Productive material is that which is eventually consumed in direct production of the plant's product; non-productive material is that material such as tools, office supplies, and various maintenance equipment which is not directly consumed in the plant's productive processes. In most cases, both types of material are received at the same dock structure simultaneously.

Some receiving docks included in this study also involved the shipping of rubbish, scrap metal, and other waste material from their structure. Docks such as these were included in this study since the shipping of this material was being performed from docks ordinarily utilized for receiving material.

Shipping dock. A structure in an industrial plant, specially designed, from which material is loaded for

shipment to another point. In some cases, the material being shipped is a finished product ready for consumer use; in other instances, it is a product which must be shipped to another industrial location for further processing or assembling.

Generally speaking, this study does not include docks from which rubbish, scrap metal, and other waste material is shipped. However, when the physical shipping of such material is accomplished from a dock structure ordinarily used for shipping the plant's manufactured product, it does become an area of concern in this thesis. Many plants have shipping docks solely for the shipping of rubbish, scrap metal, and waste material only. This type of dock is not included in the definition of shipping dock as used in this thesis. The exclusion of such shipping docks was made in full recognition of the theft potential involved at such docks. However, after studying existing shipping operations, it was concluded that the security involved in shipping rubbish, scrap metal, and other material is a major problem facing industry, possibly a problem of sufficient magnitude to justify the attention of an entire thesis. Rather than merely presenting a superficial treatment of the problem, it was excluded entirely.

Yard switcher. The tractor portion of a tractor-trailer combination that is used at some larger plants only to switch trailers of common carriers in and out of dock

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wells. This tractor usually never leaves the plant premises during dock operating hours. The yard switcher is usually associated with a common carrier trucking company and is employed on a fee basis by other common carrier trucking companies for the purposes of switching their trailers.

CHAPTER II

REVIEW OF THE LITERATURE

This Chapter represents a summary of the literature which seemed applicable to dock security. The viewpoints expressed in this Chapter were derived from the literature only and do not necessarily reflect the viewpoints of the company or the writer. These viewpoints are those of various authors and organizations which have contributed literature to the profession of industrial security.

In the past decade, there has been a substantial increase in the quantity of literature written relevant to the industrial security profession. Most of this literature is presented in the form of articles in various security, business, police, and other related periodicals. There has also been a number of books prepared on the general subject of industrial plant protection and security.

Despite the encouraging increase in the volume of literature pertaining to the profession of industrial security, the quality of much of this literature is debatable. A great amount of this literature is written with solely personal experience as a foundation, and therefore, is somewhat lacking in the theoretical aspect.

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Dock security and its related aspects have been slighted in the literature. A review of the literature regarding this ~~specific~~ ~~topical~~ area proved disappointing. Few studies were found which dealt specifically with the problem being studied. However, a number of articles and chapters of a few books outlined and explained some of the most practical and elementary aspects of dock security. The majority of the literature which was of most value for the purposes of this thesis was derived from business and management sources rather than industrial security sources. The profession of industrial security appears to have provided little research work in this area.

A general theme was emphasized throughout the literature, this theme being that plant protection personnel too often evaluate their effectiveness on how well they secure the plant from workers stealing tools and other small items in their pockets and lunch pails and do not concern themselves sufficiently with the less obvious areas where large and crippling losses may occur, such as at the docks. John R. Davis, a nationally recognized security and plant protection expert, strongly urges correction of this misplaced emphasis. Mr. Davis states that "it is folly to station a plant protection officer at the front door and leave the receiving dock unguarded. It is like locking the front door and leaving the rear door open."[1]

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[1]John R. Davis, Industrial Plant Protection (Springfield: Charles C. Thomas, 1957), p. 231.

In summation, writers who concern themselves with literature of a security nature tend to recognize the deficiency of research in the area of dock security and recommend this area as an important one for study.

The literature available appears to point toward three fundamental approaches to the general problem of dock security. The initial concern regards internal security controls and measures, the second external security controls and measures, and the third concerns personnel security procedures and practices.

I. LITERATURE REGARDING INTERNAL CONTROLS AND MEASURES OF SHIPPING AND RECEIVING DOCK SECURITY

Internal control constitutes a major area of consideration, especially so when considering the form of industrial theft which is the topic of this thesis. Internal control is sometimes called "internal check." Internal control may be defined as "a system established by top management which enables it to have control of what is going on in the business."[1] Internal controls and security measures are of great importance when considering thefts from dock areas since these thefts are many times of such nature that they may go undetected for extended periods of time if internal checks and safeguards have been rendered ineffective as the

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[1] J. K. Lasser (ed.), Business Management Handbook (New York: McGraw-Hill Book Company, Inc., 1952), p. 595.

result of collusion. Most acts of collusion are planned, specifically with the idea of circumventing existing security controls and measures; therefore, large business losses may result. "Where internal controls are weak, management is open to thefts of astonishing size."[1] Internal controls are of various types, many of which are very complex. Little discussion regarding specific systems was presented in the literature. However, the following statement from Canadian Business presents a general picture concerning a function of a properly designed internal control system:

> Every vulnerable transaction, or internal change in asset control in finance, production, and marketing should be substantially divided into two or more steps, each performed independently by different employees. Each step should, as far as possible, depend upon and act as a check on preceding steps.[2]

J. K. Lasser, editor of Business Management Handbook, indicates that internal controls, such as systems, procedures and records, must be so designed and implemented that errors, fraud, and theft as the result of collusion will be prevented or easily detected before resulting losses assume major proportions. It must also be kept in mind that these controls must not become such great obstacles to the

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[1]Irwin Ross, "Thievery in the Plant," Fortune, LXIV (October, 1961), p. 143.

[2]Roger Bain, "Controls you need to Guard against Error, Theft and Fraud," Canadian Business, XXXV (October, 1962), p. 65.

efficiency and productivity of the company that the cost of their use becomes prohibitive.[1]

Although Lasser stresses the need for adequate internal controls, he also cautions management about becoming complacent regarding the possibility of losses just because the company has a seemingly foolproof system of internal controls. There are limitations on these controls and they must be recognized. Lasser points out that these controls were designed by wise men; therefore, they may be circumvented by even wiser men.[2]

Irwin Ross nicely summarizes the limitations of internal controls in the following paragraph:

> Authorities all agree that the best systems of internal control can be wrecked by collusion. Collusion, after all, can cut across the divisions of responsibility so sharply defined on the organizational chart. If warehouse workers conspire with shipping clerks, for example, it is relatively easy to circumvent the check the latter group is supposed to exercise over the former. The effectiveness of a system of control can perhaps be gauged by the amount of collusion necessary to subvert it. Thus it is the better system that would require the collusion of three rather than two strategically placed employees in order to remove merchandise; elaborate conspiracies are obviously less likely to occur.

Inventory control procedures constitute a major area of concern regarding internal security controls and measures. Nearly all literature consulted regarding inventory control

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[1]Lasser, op. cit., pp. 596-598.

[2]Ibid., p. 626.

[3]Ross, op. cit., p. 202.

emphasized the many variations of inventory control utilized. Many variables, too numerous to relate at this point, influence the decision as to what method is utilized.

It is generally accepted that an extensive physical count of inventory should be performed at least once a year. Theoretically, this physical count should agree with the book inventory (what should be in stock according to company records). It is common practice to allow a given amount of dollar value fluctuation over and under the book inventory before an investigation is launched concerning a particular discrepancy. Plant auditors usually supervise the physical inventory count in an effort to counteract collusion and rigging of the count by personnel closely associated with the particular inventory during plant daily operations. In many instances, an outside auditing firm also assists in this supervision. It is desirable to have personnel who are ~~now~~ NOT directly responsible for the inventory to perform the physical count to prevent rigging of the count.[1]

In the case of items of high theft potential, a physical count may be performed monthly, weekly, or even daily by independent counters. In some instances, even perpetual inventories are maintained at the location of these items.

> For theft prevention, one of the most effective internal controls is, of course, a perpetual inventory--the system whereby a running total is kept (additions

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[1]Accounting Department (Auditing Section, "Inventory Manual" Plant #3, 1964. (Mimeographed.)

> and subtractions being made continually) of the amount of merchandise that should be on hand. With this figure available, a physical count can be taken at any time to see if a shortage has developed and an investigation can be launched while it may still be useful.[1]

William Sprague, well known Certified Public Accountant, author of numerous articles, and an expert on internal controls, strongly urges that inventories should never be under the control or supervision of a single employee who may have the opportunity to manipulate the inventory control procedure in any way. All inventory control procedures must be subjected to checks and balances to insure proper control.[2]

National Industrial Conference Board literature regarding Theft Control Procedures, 1954, stresses that management has a basic responsibility to establish the proper internal controls on inventory which by making it difficult to pilfer items in inventory, the temptation to steal will be lessened or possibly even eliminated.[3]

Electronic data processing equipment has done much to improve the availability and accuracy of book inventory figures. In fact many large companies now have electronic data processing equipment which is capable of providing an

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[1]Ross, op. cit., p. 143.

[2]William Sprague, "Testing the Adequacy of Internal Control," Journal of Accountancy, CI (March, 1956), pp. 50-51.

[3]National Industrial Conference Board, Theft Control Procedures (Studies in Business Policy No. 70. New York: National Industrial Conference Board, 1954), p. 10.

up-to-the-minute unit figure of each part in its entire plant inventory. Book inventory as current as this has many favorable security implications. In essence the electronic data processing equipment is quickly revolutionizing the world of inventory control.[1]

The type of internal surveillance expected of various internal controls instituted by management has given rise to a specialized audit system known as internal auditing. "Internal auditing is the independent appraisal activity within an organization for the review of the accounting, financial, and other operations as a basis for protective and constructive services to management."[2]

In smaller organizations, the internal audit phase of control may be performed by outside accountants or management engineers. In larger organizations, this work will usually be handled by a group within the organization, usually the internal auditing section of the plant's accounting department. Theoretically such groups have no "axes to grind" and can objectively evaluate existing policies and procedures and their operational effectiveness. One of the most important factors in effective auditing is having personnel perform the audit who have no immediate self-interest in the operation being audited. Proper internal

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[1] "Stock Control on the Sirius Computer," Data Processing, IV, #3 (July-September, 1962), pp. 133-138.

[2] Victor Z. Brink and Bradford Cadmus (eds.), Internal Auditing in Industry (New York: The Institute of Internal Auditors, 1950), p. 6.

audit control is most important in discovering acts of collusion and/or embezzlement.[1] If the system of internal control is determined to be inadequate, the auditor has two obligations to perform. In addition to a proper evaluation of the system, he should (1) determine the extension or modifications of the program required in the circumstances, and (2) advise the proper personnel of the significant weaknesses noted and suggest corrective measures.[2]

William H. Corrigan, formerly manager of the Security Department at Ford Motor Company, presented a strong plea for more dedicated cooperation in the planning of internal controls, especially those related to the security function, between the industrial security department and internal auditing department. He indicates that nearly all controls regarding theft and loss prevention are subject to policy and procedural review by internal auditing, yet little or no cooperation exists between industrial security and internal auditing in an attempt to improve the overall security situation. Both have similar security objectives, but seem to travel separate roads, many times duplicating each other. Corrigan strongly urges that security supervisors should be present at every meeting in which internal control is discussed. This is where professional industrial security administrators are able to offer ideas and comments from their

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[1]Brink and Cadmus, op. cit., pp. 6-7.

[2]William Sprague, "Fraud, The Accountant and Internal Control," Journal of Accountancy, C (September, 1955), p. 37.

practical experience regarding procedure and policy recommended by auditors. In essence, Corrigan is emphasizing the need for more cooperation and coordination between the activities of the internal auditing department and the security department.[1]

Despite the best internal controls, inventory security measures, and internal audit procedures available to management, internal theft loss will continue to plague companies if these controls are not properly implemented and enforced by company management. Norman Jaspan has been one of the most vigorous exponents of this philosophy. Jaspan, a prolific writer in the realm of "preventive management," attributes a considerable amount of theft and other inventory shortages to the simple fact that management is not managing properly.[2] Joseph P. Blank, the author of an article in Nations Business pertaining to management techniques, is of the opinion that many employee thefts are perpetrated with the assistance of the boss's innocent collusion. Blank cites a need for management to improve its managerial techniques as a means to reduce the number of business and industrial thefts.[3] Charles P. Rudnitsky and

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[1]William H. Corrigan, "Industrial Security and the Internal Auditor," Internal Auditor, XVI (June, 1959), pp. 62-68.

[2]Norman Jaspan, "Stopping Employee Theft Before It Starts," Management Review, XLIX (January, 1960), pp. 51-52.

[3]Joseph P. Blank, "Poor Management Tempts Employee Thefts," Nations Business, XLIII (July, 1955), p. 84.

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Leslie M. Wolff echo the philosophy of the above two writers in the following statement: "The basic force responsible for industrial theft today, the power that has permitted theft to blossom from petty pilferage into a Frankenstein monster responsible for 7% of all business failures, is management!"[1] Many other publications reflect similar feelings. "Dishonesty is a by-product of management. Ineffectual administration, heavy day-to-day pressures, and executive complacency have primary significance in encouraging theft and making crooks out of normally honest managers, supervisors, clerks, and cashiers."[2] F. J. Starin cites a multiplicity of reasons for increasing thefts in industry, specifically in shipping and receiving thefts. "For one, laxity of management is at the root of the problem."[3]

As a result of reviewing the literature relating to internal security controls and measures, one clearly realizes that there is a strong need for internal security controls in order that industrial plants adequately combat the problem of theft losses, especially those from dock areas. As one soon discerns, many internal controls have more

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[1] Charles P. Rudnitsky and Leslie M. Wolff, How to Stop Pilferage in Business and Industry (New York: Pilot Books, 1961), p. 17.

[2] "Inventory Losses: Are Your Employees Stealing From You?," Electrical Merchandising Weekly, XCIII (April 24, 1961), p. 6.

[3] F. J. Starin, "Industrial Detectives Say it Saves to Pay," Iron Age, CXCI (March 7, 1963), p. 100.

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security significance regarding dock theft losses than do the more obvious and traditional plant protection activities such as guarding the gate of a plant where the truck enters and exits.

II. LITERATURE REGARDING EXTERNAL CONTROLS AND MEASURES OF SHIPPING AND RECEIVING DOCK SECURITY

External, as opposed to internal controls is the aspect of industrial security most familiar to the casual observer. For the most part, external security measures are those which are most obvious and clearly recognized. For example, every worker, when entering a plant, must present some type of identification at the plant entrance and may be subject to having his lunch pail inspected upon leaving the plant after his work shift is completed. The same general procedure is mandatory on the part of truck drivers. These are all outwardly visable security procedures, quite different from those related in the above portion of this Chapter.

The engineering or the physical arrangement of the dock area may be an important security aspect. The literature regarding this specific security consideration was found to be extremely lacking. John L. Buckley, who has done considerable writing in the area of industrial security, has attempted to shed some light on the issue of dock design and arrangement.

> In terms of plant design, the most critical areas, from a security officer's standpoint are the shipping

> and receiving docks. Even in a well designed plant, where the time honored practices of industrial theft will not work, the shipping and receiving areas are left relatively unprotected.[1]

Buckley is of the opinion that many thefts from docks are directly associated with the faulty physical arrangement of the docks. He feels that by virtue of their physical arrangement, docks foster rather than deter collusion and other relationships and opportunities conducive to theft. Buckley urges cooperation between plant engineering and the industrial security departments in an effort to design docks that may be able to correct this growing menace to American industry. Primarily, such an effort may reduce to a minimum the contact between dock personnel and truck drivers in an attempt to reduce the collusion potential. "Good plant engineering should remove temptation from the path of the honest employee as well as deter the dishonest."[2]

The physical location of dock areas may have a significant relationship with the security of material at the dock. Harvey Burstein in an article in the Harvard Business Review emphasizes that such facilities as docks are very vulnerable to theft regardless of location, but stresses that docks physically located in such areas that they are readily accessable from public thoroughfares, for instance,

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[1] John L. Buckley, "Industrial Security and Plant Engineering, Joint Responsibility," Plant Engineering XVI (February, 1962), p. 116.

[2] Ibid, p. 117.

are especially vulnerable. Burstein indicates that care should be exercised in choosing a location for docks.[1] National Industrial Conference Board literature also stresses that care should be used at the time a plant is constructed so that all docks are located inside the plant perimeter fence, but near enough to the perimeter of the industrial complex so that trucks do not have to travel excessive distances inside the plant before reaching the dock area. If such movement by trucks inside the plant perimeter is necessary as a result of dock locations, an escort may be assigned to the truck in order to better control its activities while inside the industrial complex.[2]

Generally, the literature indicates that plant management should exercise better judgement in the location of dock areas in an effort to reduce thefts from such facilities.

The literature also emphasized the necessity of proper nighttime lighting patterns in the vicinity of and on the docks themselves. This was cited as a major failing of many industrial docks.[3]

Although not a direct concern of this thesis, but still meriting mention, is the question of the number of

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[1]Harvey Burstein, "Not so Petty Larceny," Harvard Business Review, XXXVII (May-June, 1959), p. 76.

[2]National Industrial Conference Board, op. cit., p. 32.

[3]William T. Lewe, "Warehouse Security, Sitting Duck or Fort Knox?" Security World, I, #3 (November, 1964), p. 23.

plant entrances for trucks that a plant location should utilize. Recognizing the many variables which are involved in this aspect of external security, the literature emphasizes that as few as possible be operated at a given industrial location. National Industrial Conference Board Literature regarding theft control procedures, 1954, recommends that as few plant gates as possible be utilized for truck traffic. Adhering to this principle would result in more centralized and uniform control of policy and procedure regarding truck traffic security.[1] As an additional security measure, the rotation of security officers at these centralized truck gate posts is deemed essential in order to counteract any collusion possibilities between truck drivers and security officers which can conceivably arise.[2]

In some cases in which dock thefts have grown into large amounts and neither internal nor external security precautions have been able to ferret out the source of the problem, undercover agents have been placed on the dock disguised as ordinary dock workers in an attempt to gain information concerning the thefts and the *modus operandi* being utilized. Records have revealed many industrial dock thefts

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[1]National Industrial Conference Board, *op. cit.*

[2]National Industrial Conference Board, *Plant Guard Handbook* (Studies in Business Policy No. 64. New York: National Industrial Conference Board, 1953), p. 5.

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to be of a most ingenious nature, the type that may be solved only through the use of undercover agents.[1]

III. LITERATURE REGARDING PERSONNEL SECURITY PROGRAMS FOR DOCK PERSONNEL

Industrial personnel security is a broad field encompassing a number of facets, many of which are not directly related to a thesis of this nature. Therefore, as the result of a selection process, only literature related to those facets of industrial personnel security which seemed relevant to the problem being studied was reviewed. Authors who offered commentaries most applicable to dock personnel security measures were relied upon for much of the information contained in this section.

As a result of the literature consulted, it was not possible to arrive at any general conclusions regarding the extent of pre-employment screening that would be recommended for dock personnel. Though reviewed on a selective basis, the literature consulted made little mention of personnel security programs applicable to dock employees. The majority of programs discussed were of a general nature, rather than being specifically oriented. Despite the generality of much of the literature, basic personnel security points were emphasized, some of which may be of value in formulating a personnel security program for dock employees.

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[1]Company record file on Dock Theft Case #2, dated June-September, 1964. Analysis of this case appears in Table 1, Chapter III.

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Personnel security, whether speaking in a loyalty and security or suitability context, is a relatively new concept in the United States. "It is certainly safe to say that prior to 1940 very few companies conducted any type of investigation of their employees."[1] Prior to this time, practically all that was required of an individual was his name and social security number. This picture changed during World War II. It became evident that if the United States was to properly defend herself and eventually win the War, the productive capacity of American industry must be maintained. "And, finally, it then became apparent that the persons employed by industry must be beyond suspicion as far as their loyalty went in order that internal sabotage did not occur."[2] The lengthy application form was born at this time and with it came the investigation to verify the facts stated on the application form. At the termination of World War II, many companies retained the wartime procedure of investigating potential employee's backgrounds. They had come to realize that this was a good sound business practice. Thus, the background investigation was born and grew into a major tool of the businessman.[3]

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[1]Leon H. Weaver (ed.), Industrial Personnel Security (Springfield: Charles C. Thomas, 1964), p. 415. Quoting Russell E. White: "Why Background Investigations? Policies, Practices, Techniques, and Problems." (Speech delivered to Purdue Industrial Security Short Course, November, 1960.)

[2]Ibid.

[3]Ibid.

The personnel security programs upon which attention is focused in this thesis pertain to the suitability of a person to occupy a position in which the potential for theft of company property is substantial, as opposed to the national security and political loyalty considerations usually associated with the meaning of personnel security.

Industrial personnel security is faced with many and severe problems today. Rapidly changing social structure and population mobility have been primary obstacles of personnel security.

> The migration of peoples poses the very problems that necessitate personnel security operations in industry. What better means to hide completely a record of crime or background history of otherwise unacceptable activities than to hide one's identity in an entirely new community, miles away from the area where the derelictions were perpetrated.[1]

Modern transportation has also enabled persons to work long distances from where they live. The era when the boss knew all his employees and their families has ended. This situation of the past made applicant background investigations virtually non-existent or unnecessary. In essence, "the unity complex of the community has vastly changed."[2] The summation of these social trends renders the evaluation of applicants a most difficult task in our modern society.

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[1] C. A. LaForge, "Personnel Security Pays Off," Industrial Security, III, #1 (January, 1959), p. 39.

[2] Pascal B. Hopkins, "Applicant Investigation," Industrial Security, VII, #1 (January, 1963), p. 8.

"Unfortunately for industry in general, acceptable pre-employment screening procedures are a matter of routine in but a comparatively few companies; and conversely, fortunately for those who would hide behind anonymity, the falsification of an application for employment will, in most cases go unnoticed."[1]

Hopkins stresses the need for pre-employment security programs to leave behind the "horse and buggy" investigative techniques which he feels are wholly inadequate to meet the security problems of the modern world. Improvement has come to almost every phase of American life, but the same old methods of personnel security continue to be used. Hopkins feels that industry has many improperly investigated persons on its payroll who are in positions where they can do much harm to the company as a result of inadequate pre-employment personnel policies. Hopkins advocates more adequate pre-employment personnel screening procedures as a remedy to this problem. "We need now more than ever before to utilize a modern scientific method of truth evaluation that will put us in the position of knowing that an applicant is or is not desirable before he is hired or trained."[2]

The changing social structure of society and the tremendous mobility of population have had many ramifications

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[1] LaForge, op. cit.

[2] Hopkins, op. cit., p. 37.

regarding industrial personnel security programs, one of the major ones being the cost of proper applicant investigation programs. Most management personnel feel that the cost of proper applicant evaluation too often is economically prohibitive. As a result, management performs but the most cursory investigation of new personnel unless required to do differently by an outside impetus, such as the United States Government in cases involving defense contracts. Management feels that the cost of properly investigating the majority of its hourly-rated personnel, dock personnel included, is not justified. The irony of this position is seen when management outwardly deplores the existence of thieves and other undesirables on its payroll.[1]

"Even though they are not subject to Federal Government regulation concerning the loyalty and security of their employees, many managements use personnel background investigations as a means of minimizing theft and other breaches of trust, checking on the employee's qualifications, and checking on his general suitability."[2] The above is a viewpoint of personnel background investigations held by Dr. Leon H. Weaver, Professor of Industrial Security at Michigan State University and a strong advocate of personnel investigations for suitability as well as loyalty and security reasons. He feels that if management is to achieve the type of work

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[1] LaForge, op. cit., pp. 39-40.

[2] Weaver, op. cit.

force that it desires, adequate suitability investigatory programs are necessary.

Mr. Russell E. White,[1] in a speech before the Purdue University Industrial Security Short Course in November of 1960, which is cited in Professor Leon H. Weaver's book, Industrial Personnel Security, also emphasized the continuing need and value of suitability investigations. Background investigations are necessary in companies engaged in classified defense work for the purposes of national security, but why are they necessary in industries not engaged in classified work? Following is a summary of White's justification for the existence of personnel security programs in organizations not engaged in classified government work.

The cost involved for the company seems to be the major objection of the background investigation. The cost of performing the investigation does not warrant the value gained is the common complaint. White feels that investigations do not cost money, but rather save money. He bases this opinion upon the sentiment that despite the fantastic technological advances in modern industry, people are and always will be the most important assets of a company. White strongly emphasizes that good people will make a good company, all other things being equal; therefore, in order to guarantee getting suitable people, some sort of background

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[1] Ibid., p. 416.

investigation is necessary.

> It cannot be left to the law of averages because statistics have shown that in those instances where a good pre-employment investigative setup is practiced the rate of rejection for one reason or another may run as high as 6%. This means that in a plant of one-thousand persons, sixty may be categorized as unfit employees who, for one reason or another, are detrimental to the business.[1]

White strongly emphasizes that background investigations are essential for the security of any company and goes on to cite many individual cases to support his contention. As a result of suitability background investigations, certain types of employees ~~who~~ may be exposed such as employees who are known to be consistently late for work, those who have chronic absentee records, dope addicts, embezzlers, petty thieves, and other similar types.

Russell E. White stresses the point that management carefully studies and checks the performance capabilities of a new machine before purchasing it, but seldom shows the same degree of interest in checking the individual who will operate that machine. In essence, machines receive more thorough investigations than do persons.

White cautions that the investigator must be aware of the various anti-discriminatory laws in existence in many states. Care must be taken not to violate such laws either on the application form or during the course of the investigation. He emphasizes that each company must suit its

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[1] Ibid.

investigatory program to local needs; what will work for one company may not work for another.

In summary, White recognizes that the positive value derived from background investigations, as in so many other realms of industrial security, is very difficult to measure. He suggests that the absence of harm or personnel suitability problems may be a possible means of measuring effectiveness of such a program, but this too, does not lend itself to easy measurement.

Despite the obstacles involved, White cites the use of industrial personnel suitability programs as one of the prime prerequisites for running a successful company.[1]

C. A. LaForge speculates how many millions of dollars that industry loses through strikes, sitdowns, factory spoilage and waste, costly compensation claims, thefts of company property, and other misappropriations could have been avoided or at least mitigated by instituting improved job applicant security programs. He strongly advocates that more adequate personnel security programs can do much to reduce this suspected amount.[2]

B. W. Gocke also defends the need for management to know who it is hiring. "When an employer is hiring a person for any position of trust, he has the right to know the

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[1] Ibid., pp. 415-421.

[2] LaForge, op. cit., p. 40.

character of the person he is hiring for the job."[1] He emphasizes that there is no substitute for a thorough check and study of the application form concerning the background of each employee. Gocke contends that there is great need for more cooperation between the security department and the employment office.

The screening of new personnel becomes one of the first and most vital controls on the quality of employees which a company hires.

> The thoroughness and the degree of care taken in this screening process will naturally depend upon the degree of trust which management places upon the individual and upon the possibility for wrong doing in the particular job or area in which the person is to work. It would not be consistent to take as much time and effort in screening a day laborer in a cement plant, where there is no critical process or information as it would be in the screening of a cashier or plant guard, who are to protect money, valuable equipment, and vital information.[2]

An employer must make a decision regarding the thoroughness of the personnel screening process to which a person occupying a given position shall be subjected. Management is urged to decide upon the degree of discrimination necessary for each position in its organization for which a screening procedure is deemed necessary.

As an initial pre-employment activity, the potential employee is usually requested to complete an employment

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[1] B. W. Gocke, Practical Plant Protection and Policing (Springfield: Charles C Thomas, 1957), p. 22.

[2] B. W. Gocke, "Personnel Aspects of Industrial Plant Security," Police, II (May-June, 1958), p. 40.

application form and participate in a short personal interview. Evaluation of the application form and the personal interview are usually completed by a member of the employment department. Any additional information and verification of the application form information is usually gained through a more detailed background investigation of the applicant.

Several aspects may comprise the background investigation. The depth and scope of the investigation depends upon the position being considered, availability of information, and many other intervening variables, many of which will be unknown at the time the investigation commences.

Among some of the items most likely to be considered in the pre-employment background investigation of the applicant are police record checks at localities of the applicant's present and former residences, credit rating, educational background, past employment and work record, personal reference checks, and checks on the applicant's character and personal habits. Some employers may also require potential employees to undergo batteries of various types of tests, polygraph examinations, and submit to finger printing as part of the pre-employment screening process. Background investigations are primarily conducted for the purpose of verifying information gathered about the applicant from the application form and the personal interview.

It is the responsibility of the investigator to investigate thoroughly any discrepancies discovered.[1]

When any more than a cursory ~~type~~ pre-employment investigation is deemed necessary, "many companies use their own investigators wherever possible, and others rely almost exclusively on commercial agencies. The number of persons to be processed frequently is a determining factor in the method selected."[2]

Lie detectors are being increasingly used in personnel security matters. One of the uses to which lie detectors can be put in personnel security work involves the checking on the veracity of pre-employment interviews and of information contained on the personnel application form; this might include both initial employment and selection for promotion.[3]

Carroll Price,[4] Assistant Professor of Police Science and Administration at Long Beach State College, Long Beach, California, emphasizes the need for improved personnel selection methods. Price states that industry too often discovers employees on its payroll who should have never been

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[1] Ibid., p. 41.

[2] Weaver, op. cit., p. 419.

[3] Ibid., p. 190.

[4] Carroll S. Price, "An Instrumental Approach to Applicant Evaluation," Industrial Security, V, #1 (January, 1961), pp. 6, 24, 28, 30.

hired in the first place. Persons with various personality and character defects have been known to slip past the normal screening devices which are established by personnel departments to identify and eliminate such individuals.

Because of every increasing scope of operation and greater security needs, personnel offices are frequently faced with the problem of evaluating many more applicants than limited personnel and facilities will allow. Many personnel administrators have expressed a desire for a more reliable method of evaluating candidates which will expedite the process.

Price suggests that one such method may be the use of a lie detector. As a result of using the lie detector, the individual's suitability for employment is determined in terms of his character, emotional stability, loyalty, honesty, and other personality traits. Professor Price emphasizes that the use of the lie detector is not meant to replace the traditional methods of personnel selection such as the interview, psychological testing, and background investigations. The use of the lie detector is merely designed to supplement these methods.

Some of the possible advantages in using the lie detector as a pre-employment screening device are the following:

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2. It is possible to determine the presence of criminal activity in the applicant's background which has never been recorded by law enforcement agencies.

3. Character defects involving honesty, sexual deviation, truthfulness, excessive use of drugs or alcohol, excessive desire to gamble, loyalty, and other factors can be detected in most applicants.

4. Persons with a disqualifying background would be discouraged from applying for employment if the polygraph examination technique was made an integral part of the screening process, thus saving time, effort and expense.

5. It is possible to determine the degree of racial prejudice and other adverse belief systems and attitudes present in an individual if such traits are important in the evaluation.[1]

Professor Price indicates that in spite of the many possible advantages in using the lie detector, there are also certain limitations which should be noted. Such limitations are the need for highly qualified examiners; initial cost of the instrument, examining room, and the expense of training a qualified examiner; the objection to such a technique on philosophical or moralistic grounds; certain individuals due to particular physiological or psychological conditions cannot be accurately processed; and the objection to the examination by some applicants on the grounds that embarrassing facts about them may leak out and get in the wrong hands.

In summary, Professor Price emphasizes that if the lie detector is properly used, it is an evaluation technique

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[1] Ibid., p. 28.

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which is capable of determining far more about a person who applies for employment than could be determined by any other method.

Lie detectors, sometimes called polygraphs are utilized in business and industry in four major areas. These areas are pre-employment screening, periodic screening, specific loss screening and screening personnel for promotions to positions of trust. The primary commercial application of the lie detector in pre-employment screening is to attempt to verify the personal history of all employees and to verify that the information indicated on the potential employee's application form is, in fact, the truth.[1]

John R. Davis, a nationally recognized industrial security consultant and polygraph operator was interviewed in Chicago, Illinois, on March 19, 1965, concerning the use of the polygraph on dock employees. He emphasized that all plant employees, both hourly-rated and salaried, who have association with the shipping and receiving function should be subject to polygraph examinations. Such examinations should be a part of the pre-employment screening process and be given to each employee on a periodic basis thereafter.

Aside from those persons on college and university faculties, who have an interest in the polygraph and its application to pre-employment screening, and certain

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[1] "Drug Employee Thefts Uncovered by Zonn Firm," Drug Trade News (September 5, 1960), p. 24.

interested governmental agencies, much of the literature available in this realm is published by various business and security consulting firms. Such literature is published for business promotional purposes and therefore, usually presents only the favorable aspects and advantages of using the polygraph as a pre-employment screening device.

Despite those persons who advocate the use of the polygraph as a pre-employment screening device, there are also many persons and groups who oppose the use of such an instrument. Although use of the polygraph has made significant progress as a pre-employment screening device in the business and industrial world, it may have made even greater progress if it had not been for protests from labor unions concerning its use.[1] Much of the literature concerning the polygraph indicated that labor was generally opposed to its use as a pre-employment screening device. The labor unions which represent the hourly-rated employees at the various plants included in this study also followed this general pattern.

Opposition to the use of the polygraph is also expressed by various individuals. One writer states that the use of the polygraph as a pre-employment screening device may create more ills than cures for management; almost

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[1]Leon H. Weaver (ed.), Industrial Personnel Security (Springfield: Charles C, Thomas, Publisher, 1964), p. 204, citing Dwight MacDonald: "The Lie Detector Era," The Reporter, June 8 and 22, 1954.

certainly it will have an adverse effect upon labor-management relations and conceivably it might lead to some form of legal action against the company.[1] The persons opposed to the use of the polygraph as a pre-employment screening device also cite the lack of qualified examiners as a major factor against its use. This may very well be a valid observation since many polygraph examiners themselves express the opinion that of the total effectiveness of the examination, 90% rests on the competence of the examiner.[2]

More thorough pre-employment personnel security procedures many times meet opposition from persons who feel that such investigations violate privacy and thus are unconstitutional. This attitude is especially prevalent when the polygraph or lie detector is used. This is a well taken objection. In order to combat the detrimental effects which may result from misuse of this information, management has a responsibility and an obligation to fulfill.

> First of all, it should be made clear that any questions asked, any investigations conducted, or any background checks that may be required are to be held in strict confidence by the company representatives concerned. The individual whose application is being studied has a right to expect that his past record, whatever it may be, will not be disclosed for the curiosity satisfaction of people not connected with the inquiry.[3]

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[1] Burstein, op. cit., pp. 73-74.

[2] Price, op. cit., p. 30.

[3] Gocke, "Personnel Aspects of Industrial Plant Security," op. cit., p. 41.

Bonding of employees is also considered by some to be a contribution to an effective personnel security program. Those who advocate the use of bonding feel that management should take full advantage of the services of bonding offered by various commercial casualty companies. These insurance companies can assist in "screening" employees through their investigatory techniques; exercise moral restraints on employees; and assist in developing effective and efficient preventive measures against loss from various forms of dishonesty.[1] Norman Jaspan, a strong advocate of the "preventive management" theory also stresses the need for bonding of all plant personnel.[2] A number of other sources were discovered during the review of literature which support the need for bonding all plant personnel. Bonding of employees will discourage their taking merchandise and will reimburse the store in case of large losses due to embezzlements and various types of theft.[3]

Sources were also noted which questioned the value of bonding as a personnel security measure. Bonding may prove troublesome for industry since many bonding companies now thoroughly investigate all employees prior to bonding.

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[1] J. K. Lasser, How to Run a Small Business (New York: McGraw-Hill Book Company, Inc., 1955), p. 41.

[2] Jaspan, op. cit., p. 52.

[3] National Retail Dry Goods Association, Stock Shortage Control Manual. A Report prepared by the New England Controllers Association (New York: National Retail Dry Goods Assoc., 1951), p. 38.

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Many of these employee investigations include the use of the polygraph. As a result of such thorough investigations and the possible use of the polygraph, management may be faced with serious labor-management problems as a result of attempting to bond its hourly-rated employees. However, without the polygraph examination, many bonding companies have been reluctant about paying on the bond.[1]

Generally speaking, the value of employee bonding as a personnel security measure seems to be quite a controversial issue in business and industry. Various authors reflected this controversy in their diverse opinions concerning the subject.

Thus far in this section, the literature discussed has revolved around the need for more adequate industrial personnel suitability investigation measures and the various means by which they may be accomplished. The primary reason cited for the investigation of persons prior to employment is to discover those individuals who may be detrimental to the plant's operation. As mentioned above, these types of individuals include potential thieves and embezzlers, persons with chronic records of absenteeism and workman's compensation claims, and other similar individuals. Well functioning personnel suitability programs will discover the majority of persons with such undesirable attributes and recommend that they not be hired.

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[1]Burstein, op. cit., p. 73.

Despite the existence of such investigations, nearly every plant discovers a number of these so called "undesirables" on its payroll. When such persons are discovered, the initial response of top management is to accuse those responsible for the performance of such investigatory duties of an inadequate performance. An inadequate performance of these investigatory duties may be the reason for the existence of "undesirables" in some instances, but there may also be other reasons for employees becoming "undesirable." Perhaps certain aspects of existing managerial philosophies are contributory to the development of this problem.

Melville Dalton, in his book, Men Who Manage thoroughly discusses various types of social problems involved in the management picture. Particularly applicable to this thesis is his discussion of formal and informal rewards and their relationship to outright thefts of material, padding of expense accounts, reciprocal favor agreements, and other similar activities common to most industrial plants. Dalton is of the opinion that executives, themselves, may be indirectly to blame for much industrial theft and misappropriation by virtue of their failing to recognize a need for the existence of informal or unofficial rewards in addition to the official rewards of wages and salaries.[1]

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[1]Melville Dalton, Men Who Manage, (New York: John Wiley and Sons, Inc., 1959), pp. 198-204.

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The essence of Dalton's discussion of formal and informal rewards is that formal rewards of basic wages and salaries are usually sufficient to meet the material needs of most persons; however, they may not be sufficient to meet the various social needs of employees. He emphasizes that employees need the extra recognition involved in the informal reward, whether it be of a monetary or a non-monetary nature. Social recognition is the missing element in strictly formal wage and salary rewards. Unofficial or informal rewards should be directed more toward specific contributions and situations than toward rank as such. "Although informal reward is given for effort and contribution beyond what is expected of a specific rank, it is also granted for many other purposes, often unexpected and formally taboo yet important for maintaining the organization and winning its ends."[1] It is important that informal rewards be flexible and adaptable to the particular social needs of each employee.

Dalton feels that if management does not face up to supplementing the formal rewards of basic wages and salaries with informal rewards designed to meet the particular social needs of deserving employees, these employees will discover other means of satisfying such needs. Such other means of satisfaction may involve thefts of various types, abuse of company privileges and benefits, work "slowdowns" or labor

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[1] Ibid., p. 198.

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disturbances, and other schemes to undermine the stability of the company structure. As a result of failing to recognize the need for some type of system of informal reward and social recognition management is in effect developing its own "undesirables" by virtue of its very managerial practices and philosophies.[1]

Dalton summarizes his feelings by stating:

> Regardless of formal rankings, which are often only nominally based on potential for such action, some personnel more aptly do what is essential than do others. Tacitly or not, both they and their rewarders are aware of who solves problems and sustains the organization. Through time they are compensated as resources and situations allow. This process may seem to overlap with theft, or it may escape control and become theft, but able executives both utilize and contain unofficial rewards.[2]

Although Dalton's theory as presented in his book, Men Who Manage, was primarily directed toward the managerial group, it is very possible that it may have practical application regarding the attitude of dock workers toward theft and misappropriation of material. Regardless of what position one may take, the influence of informal rewards on the behavior and attitudes of dock workers provides much food for thought.

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[1] Ibid., pp. 206-207.

[2] Ibid., p. 215.

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IV. CONCLUDING COMMENTS

A review of the literature has revealed a considerable amount of literature dealing with the general problem of industrial theft and general controls and procedures to prevent its occurrence. However, there is a relative lack of literature concerning dock theft *per se*, and specific measures which may be utilized for its prevention.

The literature pertaining to dock theft usually presents but a superficial discussion of the problem. It appears to represent only personal opinions of various industrial security consultants and practitioners. Many of these opinions seem based upon little or no research of the problem, merely upon personal impressions. Once again it must be emphasized that this Chapter is a reflection of the viewpoints of various writers and organizations rather than those of the company or this author.

Therefore, the great majority of literature reviewed pertained to the general problem of industrial theft and its control. Such literature was reviewed in an effort to ferret out those portions which appeared to be applicable to the specific type of theft problem under scrutiny in this thesis, namely that of dock theft.

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CHAPTER III

ANALYSIS OF THEFT CASE REPORTS

This Chapter represents an analysis of twenty-nine theft case reports which originated on docks throughout locations within the various divisions of the parent company. These include both theft cases from plants visited in this study and plants not visited. Of the total number, nineteen of the cases did occur at locations visited by the writer. Visits to the plants involved provided a unique opportunity to interview many of the persons who were involved in the investigation of these cases, thus, obtaining a more accurate and detailed description of each occurrence than could be obtained only by reading the case report summary. Details on the remaining ten cases were supplied by company plant protection officials.

Written descriptions concerning most of the cases were quite adequate; however, some case reports, especially at the plant level, were poorly written and difficult to understand. Interviews with personnel familiar with these cases provided ample information to render them useful for this study.

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I. METHOD OF SELECTION AND DATA RECORDING

The theft cases chosen for analysis in this Chapter do not constitute all of the cases concerning dock thefts available at all plants of the company. However, they do represent all cases available at the various plants visited and available in the company plant protection case files.

The following criteria were utilized in the selection of the twenty-nine cases eventually chosen for analysis:

1. Each case must have been available for study at either the company plant protection office or at one of the plants visited in this study.

2. Each case must involve theft or misappropriation of property from docks.

3. Each case included must have occurred during the period between January, 1960, and June, 1965.

Criterion #1 was used in order to achieve maximum efficiency of time and money involved in performing this research. Criterion #2 was chosen since the concern of this thesis is a study of thefts from shipping and receiving areas only; other theft cases were not relevant and were excluded. Criterion #3 represents an attempt to include cases which are contemporary to present conditions on industrial docks. It is hoped that by analyzing only those cases which occurred during relatively recent years when more-or-less contemporary shipping and receiving methods, physical dock arrangement, inventory methods, personnel security programs, and other closely related aspects were being utilized, more valid conclusions would result.

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When reading and studying these cases, data concerning all twenty-nine cases were recorded in such a manner as to compile uniform information about each case. Four general areas appeared to be most relevant from the purposes of this study. These are the classification of personnel involved in the theft, location at which the theft occurred (shipping and/or receiving docks), time the theft occurred, and the modus operandi involved in accomplishing each defalcation. All information of this nature and other pertinent remarks were typed on a specially designed form for purposes of quicker, easier, and more accurate analysis.[1]

II. TERMINOLOGY DEFINED

Prior to attempting interpretation of Table 1, an explanation of terminology is necessary.

The table is divided into five major categories: Case Number, Personnel, Time, Location, and Modus Operandi. The major categories contain relevant information concerning each case.

Case Number category heads a column utilized to designate each theft case which was analyzed. For the purpose of maintaining anonymity, each case was assigned a number which appears in this column. Although no revelation

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[1]See Appendix B for an example of Dock Theft Case Analysis Form.

TABLE 1

SUMMARY OF SHIPPING AND RECEIVING DOCK THEFT CASE ANALYSES

Case Number	Personnel			Time		Location		Modus Operandi		
	Hourly	Salary	Other	Operating Hours	Non-Operating Hours	Shipping Dock	Receiving Dock	Both	Collusion	Non-Collusion
1		x			x	x	x			x
2	x			x				x	x	
3	x			x			x		x	
4	x			x		x				x
5*	x			x		x			x	
6	x	x		x		x	x		x	
7	x			x				x	x	
8** ***	x	x		x		x			x	
9	x			x				x	x	
10	Contractual Scrap Dealer			x		x			x	
11	Laundry Delivery Truck			x		x	x			
12	x			x		x			x	
13	x				x			x		x
14	x			x		x				x
15	x				x		x			x

16	x				x		x			x
17	x				x		x			x
18	Contractual Scrap Dealer				x		x			x
19	x			x				x	x	
20**	x	x		x		x			x	
21	x	x		x		x			x	
22	x			x		x			x	
23		x			x	x	x			x
24	x			x		x			x	
25***	x			x		x			x	
26***	x	x		x		x			x	
27	x			x		x			x	
28	x				x		x			x
29	x			x			x		x	
TOTAL	24	7	3	21	8	17	11	5	17	12

*Criminal record falsified on employment application form.

**Plant protection implicated.

***Company truck driver involved.

Note: "other" column records non-company employees, two contractural scrap drivers, and one mechanics laundry delivery driver involved.

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of source is presented, all other recorded information concerning each case is factual.

Personnel category refers to those classifications of employees involved in the theft case. This category is broadly subdivided into salary, hourly, and other. Salary and hourly pertain to plant employees involved; any given case may involve one or both groups simultaneously. Other refers to non-plant employees who are involved such as contractual rubbish or trash dealers. The extent of involvement by each group is indicated in Table 1.

The time category is self explanatory. This major category is further divided into operating hours and non-operating hours. Operating hours refer to those times when dock personnel are present and material is being shipped and/or received. Non-operating hours is the converse situation. Most docks visited involved a two shift operation; thus a non-operating shift exists at some point in the day. The non-operating hours usually encompass the hours from 11:00 P.M. to 7:00 A.M.

The location category includes shipping docks and receiving dock columns, both of which are self explanatory. It must be pointed out that any given case may involve theft from both the shipping and receiving dock. The third column entitled "both" refers to a dock which contains both shipping and receiving operations at the same physical facility simultaneously.

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The fifth and final major category, Modus Operandi, is one of the most significant for the purposes of this study. The column entitled "collusion" refers to collusion between dock employees (such as foremen, shipping and receiving clerks, forklift truck drivers, material handlers, checkers, and other classifications of dock workers) and truck drivers who come to the dock during the course of the shipping and receiving operation. Any type of collusion involving the above cited individuals that eventually led to misappropriation of company property was recognized in this column. The "Non-collusion" column indicates those types of thefts involving no one but the offender. However, these thefts must have originated on a dock. Such thefts are characteristically perpetrated by an individual emplcyee with no accomplice. This offender removes material (usually tools and other relatively small parts) from the dock area and usually takes them from the plant on his person or in a lunch pail. This employee need not necessarily be a dock employee, although he may be. The type of thefts recorded in this column are usually characterized as involving less value than those recorded in the "collusion" column; however, they represent quite a significant portion of dock thefts.

III. DATA ANALYSIS

A few major points revealed by Table 1 should be emphasized. Of the twenty-nine cases eventually chosen for

analysis, twenty-four involved hourly-rated workers, seven implicated salaried employees, and there were five incidents involving both hourly and salaried personnel. In two of these five incidents the salaried personnel involved were members of the plant protection department.

Dock operating hours appear to be, by far, the most vulnerable period of time for incidents of theft to occur. Of the twenty-one theft cases occurring during dock operating hours, seventeen of them involved collusion with truck drivers, both company drivers and common carrier drivers being involved. This may be quite significant since cases involving collusion usually involve thefts of higher value than non-collusion cases.

Non-collusion, or individual thefts account for twelve of the total number of dock theft cases. Eight of these twelve thefts occurred during non-operation hours. It is also interesting to note that seven of the non-operating hour thefts occurred on receiving docks. Theft from dock areas during non-operation hours is a major point of discussion in Chapter XI of this thesis.

Seventeen of the twenty-nine cases analyzed indicated collusion between truck drivers and dock employees. All but three of these acts of collusion involved common-carrier truck drivers. Three cases did, however, involve company truck drivers, who in the course of their work leave the confines of one company plant and enter another plant of the

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This relatively high collusion percentage points toward a need to understand the factors which may favor collusion. The suspected factors which foster collusion are treated in Chapters IV, V, and VI of this thesis.

Nearly all plant protection personnel interviewed regarding the topic of dock security strongly emphasized that they were more concerned with the security of their shipping operation as opposed to their receiving operation. In support of this contention, seventeen cases involved thefts from shipping docks. Of these seventeen cases, eleven involved collusion between dock employees and truck drivers.

Seven of the eleven thefts originating on receiving docks occurred during dock non-operating hours and involved only individual company employees rather than collusion efforts with truck drivers.

It is also interesting to note that three cases involved personnel who were not plant employees. This involvement may point to a need for more adequate security regarding various contractual firms who must be on plant property during the normal course of performing their services.

Originally, an attempt to correlate "high loss" cases with the variables analyzed in Table 1 was planned. After analyzing these theft cases and interviewing plant protection personnel who were familiar with many of them, it

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was found that, in most instances, the amount of material stolen and the value of this material was not known to any degree of accuracy. Therefore, with no reliable knowledge of the financial loss incurred, such correlations were not attempted.

IV. CONCLUDING COMMENTS

As a result of the cases presented in Table 1, certain conclusions appear justifiable. However, the reader must recognize that these conclusions are based upon a rather limited number of cases. This must be kept in mind when evaluating the significance of this data.

As a result of an analysis of these twenty-nine dock theft cases the following conclusions seem to be significant:

1. Hourly-rated personnel tend to be involved in most dock theft cases.
2. Shipping docks are more vulnerable to theft than receiving docks.
3. Thefts during dock operating hours appear to be more prevalent than thefts during non-operating hours.
4. Collusion-type thefts rather than thefts by individuals are most common to docks.

The analysis of dock theft cases was done in an effort to identify the existence and assess the relative significance of four factors originally suspected to be most influential regarding security of material in shipping and receiving dock areas. These factors are dock physical arrangement, personnel security programs, inventory methods,

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and the physical handling of material and its corresponding flow of documents. An attempt has been made to tie the results and conclusions of this Chapter to these factors.

Collusion was determined to be a relatively important factor in the twenty-nine theft cases which were analyzed. These theft cases were used to establish that collusion between truck drivers and dock personnel is, in fact, an important modus operandi in dock theft cases. It is also suspected that these seventeen cases involving collusion may have a significant relationship with the physical arrangement of the docks upon which these cases occurred. This suspected relationship is discussed in Chapters IV, V, and VI.

One theft case involved a dock employee (hourly-rated) who had criminal records prior to employment. He falsified this information on his employment application forms by indicating that he had no criminal record. This incident may appear relatively insignificant when considering the total number of cases, but if this is indicative of the number of employees with criminal records who falsify that part of their employment application forms, it is a most significant aspect of dock security.

The analysis of theft case reports did very little to support or question the remaining two factors suspected to be influential in dock security, namely those of inventory controls and the physical handling of the material while on the dock area. Very little information was

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available upon which to base valid conclusions regarding these suspected factors.

Additional commentary on these four suspected factors comprise chapters and major sections in the remainder of this thesis.

CHAPTER IV

PHYSICAL ASPECTS INFLUENCING SHIPPING AND RECEIVING DOCK SECURITY

One of the factors suspected to be most influential in the securing of material on docks is that of the various physical aspects of the dock area itself. In an effort to study these aspects, Chapter IV represents a description and evaluation of these various physical aspects at the fifteen locations which supplied the majority of raw data for this study.

Pertinent physical aspects such as the adequacy of dock area space; separation of shipping and receiving operations; and the existence of rubbish, scrap metal, and other waste material shipping operations from docks which are ordinarily used for the receiving of raw materials and the shipping of manufactured products comprise major portions of this Chapter. The adequacy of dock lighting and the availability of various facilities for truck drivers are also discussed.

I. ADEQUACY OF DOCK SPACE

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material in dock areas. The majority of information in this section was obtained by interviewing shipping and receiving foremen and other personnel in material handling departments regarding the topic. Considerable information was also gained from subjective evaluations of various dock areas concerning the adequacy of dock space.

Admittedly, these methods of evaluation are not the most scientific. However, after interviewing many foremen and other dock supervisory personnel, one feeling appeared to be most significant. Nearly all personnel felt that the lack of space was the major problem they faced in their daily operations from the standpoint of preventing theft. After observing congested conditions on nearly all of the ninety-one docks included in this study, the existence of this problem was confirmed to be true. As a general rule, inadequacy of space on docks was a reality. How does the existence of this condition affect dock security?

It is generally felt by dock supervisory personnel that overly taxed dock facilities is a physical factor which may render a dock area more susceptable to theft. However there is very little concrete evidence available to support or refute this contention. Of the twenty-nine theft cases evaluated, none could be attributed definitely to the inadequacy of space on a dock facility. Therefore, this contention for the time being must be considered as only impressionistic as a result of performing this study and

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previous work experience of the writer in the industrial security profession.

It seems that docks which are not of sufficient space to permit an area entirely clear of material for a distance of at least twenty or twenty-five feet from the rear doors of trailers as they are spotted (parked) in dock wells offers a high theft potential. As material is placed closer to trailers spotted in dock wells, the potential for theft rises proportionately for the material is nearer and more available to a potential means of removing it from the premises (the trailer).

When there are overcrowded conditions existing on docks, material must be piled within a few feet of open doors of trailers. Many times, there is no other space on which to place this material. Frequently, forklift truck and dolly drivers were seen unloading a pallet of material from a trailer and placing it between dock plates near the edge of the dock for lack of room anywhere else. All types of material were seen in these precarious places, much of which was highly attractive for theft.

Primarily as a result of existing crowded conditions, dock managements presented a very poor practical application of the "preventive management" theory emphasized by Norman Jaspan and others as summarized in the "Review of the Literature," Chapter II. Regarding theft potential on docks, this concept may refer to the placing of material as far out of

reach of the potential sources of theft (truck drivers and trailers) as possible. Such a concept is designed to remove temptation and place barriers to theft, both physical and psychological.

Receiving docks appear to be faced with a much more acute problem of space than are shipping docks. This may be a consoling note for the many plant protection personnel who are more concerned with misappropriation on shipping docks as opposed to receiving docks.

Normally, companies ship material according to some type of schedule, therefore controlling the flow of material to some extent. Receiving is quite a different story. Material shipments may arrive at any time and in any amounts. When they arrive on the receiving dock, they must be unloaded quickly. For example, the production line may have a critically low bank and need the material immediately; also, the company may have to pay demurrage charges if it holds a trailer too long for unloading, and other factors that influence the time in which a trailer must be unloaded. Usually the receiving docks are crowded under normal receiving conditions. If these docks receive a great number of shipments within a short time, generally speaking, present receiving dock facilities are not able to handle the influx of material. There are times when tremendous backlogs of material become piled anywhere there is a place to put it on receiving docks, thus creating a higher potential

for theft of the material. Receiving docks will probably always be plagued by sporadic periods of high volume receiving which will cause momentary backlogs; however, generally most present facilities are wholly inadequate for even normal receiving operations, not to mention the space problems created when these periods of high volume receiving occur. This problem must be dealt with in the very near future, not only for reasons of theft potential and security, but also in an effort to improve dock efficiency in the handling of material. The inadequacy of space on docks is an acute problem, although one which appears to receive little attention on the part of higher management.

Many factors seem to have been contributory in the evolution of the issue of dock space from that of a relatively simple problem to its present state. Two factors appear to be most significant.

The first is the almost unbelievable increase in the volume of material shipped and received during recent years. This increase is a reflection of the state of the economy and especially the high level of activity of the industry chosen for study in this thesis. Existing dock facilities simply have not been able to absorb the increase in volume.

The second, and possibly the most important factor, is top management itself. Top management seems to take little or no interest in the shipping and receiving operation so long as the material somehow gets moved, the

production line continues to be adequately supplied, the manufactured product is shipped from the back door, and the plant makes a profit. This situation may sound well and good for the stockholders and the overall company profit picture, but continued neglect in any given area is almost certain to create a serious problem at some future date.

The shipping and receiving operation is one which does not contribute directly to the plant's profit picture; therefore, the less money that is spent on such an operation the better, in the view of top management. Like other functions which do not directly contribute to the profit picture, the shipping and receiving function has been neglected, not only in monetary appropriation for improvement of facilities, but also in creative thinking for the improvement of procedures and methods.

Older plants usually possess less adequate shipping and receiving facilities than do relatively new plants. Many older plants are attempting to handle today's volume of material flow over the same physical facilities that existed ten or fifteen years ago. Even in newer plants, the physical dock facilities seem to become outdated almost as soon as they are ready for use. There appears to be a general shortsightedness on the part of persons who plan physical facilities for shipping and receiving operations.

One materials management supervisor summed up the present state of shipping and receiving when he stated,

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"We are expected to move the 1965 volume of materials flow through 1940 facilities."[1] This statement is an exaggeration of the problem, but it probably represents more truth than fiction.

II. LOCATION OF TELEPHONES, REST ROOMS, AND VENDING MACHINES

Nearly all plants permit truck drivers on the immediate dock area while their truck is being loaded or unloaded. One reason that this privilege is granted to drivers is to permit them to be certain that their cargo is being properly loaded or unloaded. In many loading operations, only the truck driver knows how to scale the load properly, i.e., distribute the weight of the load properly according to Interstate Commerce Commission trailer axle weight regulations. Plant management also recognizes the right of a truck driver to observe the quantity of material being loaded or unloaded from his trailer, since the driver is responsible for that material.

Theoretically, most plants do not permit truck drivers to be away from the immediate dock area for any reason. However, this policy is one only in theory at most

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[1]Ronald E. Jorgensen, "Interview and Field Observation Data" (Series of interviews collected from April 12, 1965, to June 16, 1965, from various company and plant personnel concerning dock security. Plants to which reference is made in these interviews are consistent with numbers assigned in Tables 1 and 2 of this thesis. Hereafter, all interviews cited will refer to this unpublished material.) Interview with Manager, Production and Materials Control, Plant #1, June 4, 1965.

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plants. In reality, drivers may be seen leaving the immediate dock area on many occasions.

This section represents a description and evaluation of factors which are suspected to prompt the movement of truck drivers from dock areas.

These factors are suspected to have very definite security implications, especially when considering the problem of potential collusion between dock employees, other plant employees and truck drivers. Information regarding the description of each factor was recorded at all ninety-one docks included in this study.

The factors considered were those regarding the location of rest rooms, telephones, and vending machines (cigarettes, coffee, candy, cold drinks) which truck drivers may use. When at docks, these appear to be the needs that truck drivers request most often. Depending upon the duration of stay on the dock, the need for fulfillment of certain of these needs may become more necessary. Most truck drivers will make every effort to satisfy such desires, even if it means leaving the dock area to do so.

There may also be other aspects which merit consideration, but the above listed factors appear to be most significant to the writer. Food or use of company cafeteria was not considered since nearly all plants had a strictly enforced regulation denying truck drivers use of the company cafeteria at all times.

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All relevant data regarding the location of rest rooms, telephones, and vending machines are presented in Table 2. This table presents only general information concerning whether each of these facilities is available in the immediate dock area or whether one must go to other areas of the plant in order to use such a facility.

Some concepts used in Table 2 need additional clarification for proper interpretation.

"Number of Docks" has reference to the total number of dock facilities, both shipping and/or receiving, studied at each of the fifteen industrial plants included in this study.

"Rest Room" and "Telephone" need no further explanation. "Vending Machine" refers to coffee, cold drinks, candy, and cigarette machines. The terms "Dock" and "Plant" under each major category require further explanation. "Dock" has reference to the physical existence of a facility on the immediate dock area. The use of such facility does not necessitate leaving the immediate dock area. "Plant" designates that a particular facility is not present in the immediate dock area, but that such a facility is located at a point in the plant away from the dock. In other words, in order to utilize such a facility, the truck driver or dock employee must leave the dock area and go into other parts of the plant.

TABLE 2

PHYSICAL DISTRIBUTION OF FACILITIES MOST REQUESTED
FOR USE BY TRUCK DRIVERS

Plant	Number of Docks	Rest Room		Telephone		Vending Machines	
		Dock	Plant	Dock	Plant	Dock	Plant
#1	3	1	2	2	1		3
#2	2	2		2		1	2
#3	18	5	13	15	3	3	15
#4	19	2	17	12	7	1	18
#5	5	4	1	5		1	4
#6	3		3	3			3
#7	3		3	2	1		3
#8	3		3	3			3
#9	3	1	2	3			3
#10	4	1	3	4			4
#11	3	2	1	3		2	1

#12	15	4	11	12	3	1	14
#13	3	1	2	3			3
#14	4		4	3	1		4
#15	3		3	2	1		3
Total 15	91	23	68	74	17	9	82

Table 2 indicates that, in the majority of cases, truck drivers must go from the dock area and into the plant if they desire to use a rest room or vending machine. Usually, they go unescorted. While they are away from the dock area, they are unsupervised and have an opportunity to do things they may not normally do on the dock where they are under the supposedly watchful eye of the dock foreman and/or a plant protection officer, if there is one assigned to the dock. When there are no vending machines and rest rooms on the dock, dock employees also must go to other areas of the plant to use such facilities. Such conditions give truck drivers and dock employees an opportunity to become well acquainted. This situation offers a great opportunity for collusion between truck drivers and dock personnel. The collusion opportunities fostered by such situations may eventually lead to misappropriation of company property.

Upon noting the overwhelming majority of docks which are not equipped with rest rooms or vending machines, it becomes quite easy to surmise why the theoretical exclusion of truck drivers from other areas of the plant is not a reality. It must also be noted at this time that lax dock supervision may also be a contributory factor in the breakdown of this theoretical ideal.

Of the three facilities included in this study, the use of telephones is probably the most important need of truck drivers who visit a dock. Most truck drivers appearing

at plant docks are local drivers as opposed to over-the-road drivers. They must make pickups and deliveries at many different locations within a given area around their base terminal. As a result they have a need to maintain almost constant contact with their terminal dispatcher in order that they maintain the proper schedule of pickups and deliveries. Nearly all plants included in this study have telephones which may be utilized by truck drivers. In most cases, the telephone is installed on the dock for the purposes of facilitating company business rather than specifically for truck driver use. In a few instances, coin operated phones were installed specifically for truck driver use.

Most plant management personnel who were interviewed strongly emphasized that plants are not obligated in any way to provide truck drivers with any facility other than a dock at which to load or unload their trucks. Granted, plants are not obligated to provide such facilities for truckers, but in an effort to protect their own interests, they may find it beneficial to provide such facilities on docks which handle high-value and theft-attractive material. At most docks which possess any of the facilities discussed in this section, management personnel indicated that security was not a primary reason for their installation. At only two locations did management cite reasons of security for the existence of such facilities.[1] At these two locations, a

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[1] Interview with Supervisor, Plant Protection, Plant #11, May 18, 1965 and interview with Chief of Plant Protection, Plant #12, May 20, 1965.

telephone, a variety of vending machines, and a rest room were installed to contain more adequately the movements of truck drivers within a certain area which was away from working dock employees.

This section was included in this Chapter in order that greater attention may be focused upon an aspect of physical dock arrangement many times lightly regarded in discussions of dock security. Although seemingly not an important point, this aspect of physical dock arrangement may play a significant role in dock security; at least it merits more thought and consideration than it is now attracting. Perhaps, the wise location and an enforced policy regarding the use of such facilities may have a definite impact on more properly securing docks, especially in combating the problem of collusion between truck drivers and employees of the plant.

III. SEPARATION OF THE SHIPPING AND RECEIVING FUNCTIONS

"The shipping and receiving departments are vulnerable areas in all warehouses and it is good practice to have the two departments separated."[1] "The receiving dock should be operated entirely separate from shipping."[2] These

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[1]William T. Lewe, "Warehouse Security, Sitting Duck or Fort Knox?," Security World, I, #3 (November, 1964), p. 22.

[2]John R. Davis, Industrial Plant Protection (Springfield: Charles C. Thomas, 1957), p. 231.

statements are representative of those expounded by most plant protection personnel in reference to the physical separation of the shipping and receiving functions. Management personnel also stress the importance of having separate dock facilities for both the shipping and receiving operation. However, sometimes, management personnel do allow the two functions to be carried on simultaneously in order to achieve what they refer to as a "more efficient" operation.

John R. Davis, a Chicago plant protection and security consultant, does not feel that efficiency can be improved by combining the shipping and receiving function on one physical dock area. He feels that "such an arrangement requires re-routing of material, with unnecessary handling, to the start of the assembly line. It usually necessitates extra routing to the lines and weakens the controls in both departments."[1] The weakening of controls which affects the security of material is the primary concern for the purposes of this study.

There are many controls established for the purpose of more adequately securing material. Shipping and receiving procedures have their respective controls, varying somewhat at various industrial plants, but generally in agreement on basic considerations. Controls regarding shipping are distinctly different from those pertaining to

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[1] Ibid.

receiving, and considerable confusion may arise when an attempt is made to practice both functions on the same dock simultaneously. Dock personnel tend to become confused and not perform either operation correctly.

Confusion concerning which material belongs where is a common weakness in combining both operations. Another practical problem is what to do with the tremendous volume of material which usually accumulates on the dock area. There is always a conflict regarding dock space. Shipping needs the area as a space for consolidating material for shipments. Receiving needs the space as a spot to store material temporarily prior to transporting it to the warehouse, assembly line, or other storage areas. As a result, there is constant bickering about space and confusion regarding whose material is where. Due to excessive volume and other problems concerning which direction material is moving, there is a strong temptation on the part of dock employees and dock supervision to bypass certain of the security procedural controls in an attempt to process the material more quickly. This type of activity may open many doors for potential misappropriation and theft.

Situations observed while collecting data for this study confirmed the existence of these problems. For example, at a warehouse location where shipping and receiving from the same dock area was accepted policy, one could observe a trailer being loaded in one dock well and, at the

same time, observe another trailer being unloaded in the next dock well. It was common to observe material piled all over the dock area, some which had been received and some which was consolidated for shipping. Even forklift drivers became confused as to what material belonged where. Situations such as were present at this location presented considerable temptation to dock employees and truck drivers. Admittedly, this was an extreme case, but not one which was completely exceptional. It vividly illustrated what can happen when shipping and receiving operations are carried on simultaneously on the same dock facility.

It may be of interest to the reader that at the present time, this plant represents a major problem to the parent company concerning dock security. There is only one physical dock structure in the warehousing section of this plant, thereby forcing all material to be moved over the same dock.

Five of the twenty-nine theft cases which were analyzed in Chapter III involved thefts of material from docks which handled both shipping and receiving operations. Whether these thefts can be attributed to having shipping and receiving functions on the same dock cannot be determined with certainty; however, it must be pointed out that they did occur on docks with that type of arrangement.

Information was recorded concerning the number of docks which combined both shipping and receiving operations

on the same physical facility at each of the fifteen plants included in this study. In order to merit consideration, a single dock facility must have both shipping and receiving operations, material must be received at that dock from a source outside the industrial complex of which the dock is a part, and similarly, material must be shipped from that dock to an industrial complex other than that of which the dock is a part. The material involved may be shipped by or received from either a common carrier or company truck. At most docks of this nature, the majority of material is handled by common carrier. "Industrial complex" has reference to all the buildings or facilities of the division contained at one location, usually all within one city or immediate area, but not necessarily all within the confines of a single perimeter fence. An example is a location which contains two geographically separate groups of buildings within the same city. The term "industrial complex" may be used interchangeably with "plant."

As a result of using the above criteria, docks which handle intra-plant shipments and receipts were not included. Intra-plant movements of material are those strictly among the facilities of a single industrial complex. Intra-plant shipping and receiving presents its own unique security problems. A discussion concerning the security of intra-plant material movements is contained in Chapter XI.

In summation, any single dock which both shipped material to and received material from a source outside its own industrial complex was considered for study. This source may be another industrial complex within the same division, another division of the parent company, or a non-allied plant.

Two basic methods were utilized in obtaining information upon which to determine whether a dock would or would not meet the above stated criteria. These were field observations on dock areas and personal interviews with various dock employees from general foremen to material handlers. Since only limited time was available for field observation, the majority of data was obtained through personal interview.

According to the above criteria, at least twenty-six of the ninety-one docks included in this study were found to contain both shipping and receiving operations from the same physical dock facility.

The tabulation of twenty-six may be somewhat conservative. In order to become categorized in this group, it had to be definitely established that shipping and receiving from the same physical structure was a frequent occurrence, not something which seldom occurred. Those docks which combined shipping and receiving only under exceptional circumstances or emergencies were not included.

It is interesting to note that eleven of the docks which contained shipping and receiving operations

simultaneously are located within one very large industrial complex. This is a relatively old complex at which all other phases of plant operation have outgrown the existing shipping and receiving capacities. As a result, material is moved from any dock area which is most convenient and efficient. The remaining fifteen docks are somewhat evenly distributed among the other fourteen plants included in this study with no plant having more than two.

Two of the twenty-six dock facilities which combine both shipping and receiving are at service parts plants. This is important to note since service parts warehousing operations contain many finished parts which are highly attractive for theft and are very saleable.

A unique situation existed at one location. This location had only one physical dock facility for both shipping and receiving. Theoretically all receiving operations were limited to the first shift and all shipping operations were done on the second shift. In practice, these divisions were being maintained surprisingly well. There were very few instances of mixing the two operations. All trucking firms serving the plant were made aware of these procedures and abided by them.

Since elimination of combined shipping and receiving operations on a single dock facility is a major principle of industrial security, these twenty-six recorded instances take on a more significant meaning than would appear on the

surface. Over 25% of dock facilities included in this study violated this cardinal rule of dock security. Even 25% violation of such a major principle of security as this is significant and must not be overlooked.

As a result of this study, one conclusion seems to be inevitable: some industrial locations which have the capabilities are not making a sincere effort to achieve and maintain the physical separation of shipping and receiving operations. This principle is forsaken in favor of what management refers to as "efficiency," and which really means expediency in most instances.

IV. SEPARATION OF RUBBISH REMOVAL FACILITIES FROM DOCKS

The existence of facilities for the removal of rubbish and various types of scrap material in dock wells is a factor suspected to have a definite effect on the adequacy of dock security. The presence of such facilities is felt by many of those interviewed and by the writer to weaken the security on dock areas.

Such facilities are predominately of two types. The most common type is ordinary open-topped trailers. When the trailer becomes filled, it is usually removed from the dock well and taken to a central rubbish collection area at the plant or taken directly to a dump outside the plant. The other most common type facility is a large steel "gon"

sometimes called a load lugger. Such devices are usually set in trailer wells at the dock. When these "gons" become filled, they are unloaded by a specially designed dump truck which is capable of unloading them in the dock well.

These facilities are used in the removal of various types of material including paper, scrap metal, and other miscellaneous rubbish common to most industrial operations. A few other specialized types of rubbish removal facilities were also observed in trailer wells.

Rubbish removal facilities may be either company owned-and-operated or operated by a contractual agent. This distinction is not of primary concern, for both situations offer potential for theft.

The mere existence of any type of rubbish or scrap removal facility in the wells of docks, whether company or contractually operated, comes within the scope of this section. The removal of rubbish and scrap from docks specifically designated for that purpose was not considered in this study.

Scrap and rubbish removal facilities which are located in dock wells offers a potential avenue for theft of material from the dock areas involved. The proximity to material which is being handled on the dock appears to be the greatest security problem involved on most dock areas; when the opportunity exists, it is relatively easy for persons to place unauthorized material in such removal

facilities without being detected. Another major consideration concerns the haphazard security procedures most plants use in checking on rubbish and scrap removal facilities.

Usually rubbish and scrap which leaves the plant is taken to a dump or incinerator to be burned. In most cases, these loads are given only a cursory visual check by a plant protection patrolman at the plant gate as the load leaves. Depending upon the availability of plant protection manpower, a spot check of the unloading process is periodically performed at the dump or incinerator. Generally, relatively poor security exists in the handling of rubbish and scrap removal vehicles which go to dumps or incinerators.

In order for the rubbish and scrap removal operation to become a worthwhile means for removing material from a plant, collusion is a necessary element. Just by virtue of having removal facilities at dock areas, personnel responsible for its operation may easily make contacts with various dock personnel. This is an aspect which must be continually guarded against by company supervisory personnel. For example, contractual rubbish removal drivers are relatively low paid personnel and many times not of the most reputable backgrounds and character. A means of making a little extra money may readily appeal to them. Such individuals may be very susceptible to collusive activities with plant employees in an effort to make some easy money.

Some plants are now building incinerators on their premises, thus abolishing the need for any burnable waste material to leave the location. Cost and city ordinances relating to smoke conditions impede the construction of more such structures. The existence of a plant incinerator greatly reduces the problem of security regarding the handling of rubbish and scrap material since the need for means of removing large quantities of material from the plant (trailer or truck) is removed. Despite an increase in the use of plant incinerators, the majority of plants continue to haul their rubbish and scrap to areas outside the plant.

In summary, the existence of rubbish and scrap removal operations in wells of shipping and receiving docks presents a situation favorable for the removal of property from the company premises. The removal facilities are in close proximity to various types of material and the facility represents a means of removal. These factors, coupled with potential collusion and relatively weak security procedures regarding the removal of rubbish and scrap from the plant, may render a plant very vulnerable to losses of valuable items in rubbish and scrap.

An attempt was made to determine why these rubbish removal facilities must occupy trailer spaces on docks. Many high ranking plant officials were interviewed in an effort to determine the rationale for the existence of such facilities in dock wells. The most common justification

mentioned was that dock wells were the most advantageous place to locate such facilities in order that maximum efficiency of rubbish removal be attained. It seems that very little consideration was given to the various security implications involved. If management is so concerned about efficiency, it is difficult to understand their rationale in permitting rubbish removal facilities to occupy precious dock well space when some trailers wait for an hour to get unloaded or loaded. Because of inadequacy of dock wells in which to spot their trailers, such situations do occur.

The existence or non-existence of rubbish and scrap removal facilities was noted at each of the ninety-one docks included in this research project. Results revealed that twenty-three of the ninety-one docks studied contained some form of rubbish removal facility. At each of these twenty-three docks, from one to three dock wells were occupied by various rubbish and scrap removal facilities. In the majority of cases, only one well was filled by such facilities.

Of these twenty-three docks, nine were shipping docks, eight were receiving docks, and six were docks which combined shipping and receiving operations. These results reveal that the highest concentration of rubbish removal facilities are contained on shipping docks, precisely the area which most plant protection directors indicated to be most vulnerable to theft.

The security implications of having rubbish and scrap removal facilities in dock areas are very difficult to measure in any sort of quantative manner. Of the twenty-nine theft cases analyzed in Chapter III, only one could be directly attributed to the presence of rubbish removal facilities in dock well areas. This represents very little concrete evidence upon which to advocate the abolition of such facilities, but their potential for theft must be acknowledged.

The writer feels that with cooperation between plant management and the plant protection department and with a little ingenuity on the part of both, many of these rubbish and scrap removal facilities may be removed from dock areas, thus reducing the potential for theft of material from the dock. If a reduction in such facilities could be achieved, it would result in another advantage for management by releasing additional space for trailers to load and unload their cargo.

V. DOCK LIGHTING FACILITIES

Dark or dimly lighted areas tend to foster the perpetration of crime or at least offer temptation for involvement in such activities. Docks appear to be no exception.

Dock lighting facilities may be an important security consideration during nighttime loading and unloading operations. This aspect takes on particular significance in

modern industry since most industrial plants, shipping and receiving functions included, operate well into the night.

Dock facilities at most of the plants included in this study were observed during nighttime operations. An attempt was made to evaluate the adequacy of the light on the docks and the areas immediately surrounding them, particularly the area adjacent the dock facility where trucks usually open and close their rear gates upon entering and upon leaving the dock wells. This area, usually designated as a truck maneuvering area, can be inside the dock enclosure structure or outside of this structure. At docks which are enclosed, this area is usually part of the plant street which passes by the dock.

Adequate lighting was found to be the case at nearly every dock area where there was loading and unloading of cargo. Especially good was the lighting at those docks which were enclosed and an integral part of the main plant structure. In most cases, these docks had the same lighting arrangement that existed in the plant proper. In fact, many had additional lighting facilities. These docks were usually the more recently constructed docks, and therefore possessed the most modern lighting techniques and equipment.

Docks which were not a part of the plant proper, i.e., constructed somewhat like an addition onto the main building, many times had relatively poorer lighting facilities. Despite the fact that they were not as brightly lighted as

their counterparts described above, most appeared to provide an adequate supply of illumination.

Possibly the most important area of interest, at least for the purposes of this thesis, is the truck maneuvering area. This area offers considerable opportunity for theft since it is usually somewhat removed from any type of dock or plant supervision, usually is an area of considerable confusion and movement of vehicles as a result of the high volume of traffic using the area, and all this activity and confusion is occurring at a time when the driver has a legitimate right to be opening and closing the gates of his trailer. Because of these circumstances, this may be a vulnerable area for the placing of small parcels of unauthorized material on a trailer or in a truck cab.

The lighting of maneuvering areas which are located within the dock enclosure is usually very adequate. This lighting is similar to that in the plant, of which the dock is a part. However, on the negative side, there are very few truck and trailer maneuvering areas inside dock enclosures.

Nearly all maneuvering areas are located outside the dock structure and many present a contrary situation as far as lighting is concerned. These areas are located directly outside the dock well area, usually in a specifically designated area which is many times part of a plant street. As a result of their location, the lighting for these areas is a

part of the outside lighting system of the plant. It was found that normal outside lighting systems usually do not provide the proper intensity and distribution of light for an area so vulnerable as dock maneuvering areas where the potential for theft is great. As a result, most of these areas were rather dimly illuminated and possibly did more to encourage theft than to prevent its occurrence.

Plant perimeter lighting may also be an important consideration where the perimeter fence is in close proximity to dock areas. In some cases where this physical condition existed, the perimeter lighting left much to be desired. A few instances were noted where there were no lights on perimeter fences which passed near dock areas. The fence had provisions for proper lights; however, burned out bulbs and broken fixtures had not been replaced.

In conclusion, dock lighting appeared to be quite adequate except in truck and trailer maneuvering areas which were located outside the physical dock structure and the lighting of perimeter fences which passed near some dock areas.

It seems that management has a responsibility to provide proper lighting facilities on all docks and the immediate areas surrounding these docks. Management should assume this responsibility as a part of a "preventive management" approach in an attempt to diminish the opportunity of theft from its premises.

VI. CONCLUDING COMMENTS

Generally, the physical aspects influencing dock security which were discussed in this Chapter appear to have been largely neglected in most attempts to improve dock security. Apparently, plant protection and other personnel responsible for the security of material during the shipping and receiving operation have not deemed them an important part of dock security. As a result, many docks presented physical situations which were not conducive to the maintenance of the high level of security desired at all dock facilities.

The problem of inadequate dock space is one which is inherent in most dock structures. This problem is especially acute at relatively old dock structures, where the volume of material flow has greatly increased, but dock facilities have remained relatively unchanged. "The effort and financial cost involved in improving these facilities would be prohibitive in most instances."[1]

The most practical solution to the problem of inadequate dock space appears to be the construction of new dock facilities of adequate space. Remodeling or renovation of existing dock facilities appears to offer only limited improvement. The old adage, "you can't make a silk purse out of a sow's ear," seems very applicable to attempts to remodel or renovate existing dock facilities.

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[1] Interview with Comptroller, Plant #3, April 22, 1965.

Generally speaking, of the five aspects of physical dock security chosen for discussion, the problem of inadequate dock space seems to be the one most difficult to correct. This problem is by far the most widespread of the five aspects cited. The cost involved in its correction would be very substantial. Therefore, little improvement in space available at existing docks seems likely in the immediate future.

It is the opinion of this writer that the remaining four factors can be more easily improved. However, in order to effect these improvements, the sincere interest and cooperative efforts of all management personnel is necessary. Presently, this interest and cooperation is conspicuously lacking at most plants visited by the writer. Most management personnel felt content to leave things as they were until a "real" need for their alteration necessitated action of some type.

The overly complacent attitude expressed by many persons in higher management positions regarding the adequacy of the physical aspects of dock security discussed in this Chapter is one which must be modified prior to expecting any significant improvement. The writer hopes that management will not have to be reminded of the importance of these factors through a theft resulting in a large financial loss, a theft which can be directly attrituted to one of these

factors, and one which could have been easily averted had the proper corrective action been taken when the need for such action first appeared.

CHAPTER V

DANGER OF COLLUSION

This Chapter is concerned with one of the many types of collusion known to modern industry, collusion between various plant employees and truck drivers who come to the dock to load or unload cargo. Many times such collusive arrangements result in the removal of company property from the premises.

Webster's New World Dictionary defines collusion as "a secret agreement for fraudulent or illegal purpose, a conspiracy." This is precisely the type of activity against which any business or industry that employes even a few people must continually protect itself. This problem knows no time dimensions. It has been a problem in the past, is presently a problem, and will be a problem in the future.

Collusion takes many forms; all forms are primarily designed to bilk business and industry of time, money, and property. Elaborate internal controls and audits which cost business and industry millions of dollars to devise and supervise have become a necessity in an attempt to protect their interests from this menace. Despite the efforts, systems and procedures are circumvented each day by collusive efforts on the part of ingenious employees.

Various levels of plant supervisory personnel interviewed concerning company dock doctrine regarding the fraternization between dock employees and truck drivers unanimously conveyed the impression that such fraternization was frowned upon. Most stated that it was a part of the job description of all supervisory personnel to control fraternization of this nature.

I. COMPANY PERSONNEL INVOLVED

Past experience with theft involving collusion has demonstrated that almost any classification of personnel, either hourly or salary rated, may become involved. Collusion also exists in various combinations. One incident may involve a single company employee and a single truck driver, another may involve a group of hourly-rated company employees in collusion with one or more truck drivers, and still another may involve both hourly and salary dock personnel in collusion with one or more truck drivers. In a few instances, even plant protection personnel have been involved.

Hourly-rated or blue collar personnel have traditionally demonstrated the greatest extent of involvement in collusive effort. Of the twenty-nine theft cases analyzed in Chapter III, seventeen involve collusion. Of these seventeen cases, twelve involve only hourly-rated personnel in collusion with truck drivers, both common carrier and company. The remaining five cases representing collusion involve only salaried employees or combinations of hourly-rated and salaried personnel.

The analysis of theft cases in Chapter III indicated seven incidents in which salaried personnel were involved. Salaried personnel involved ranged from salaried clerks to general formen. Of the seven cases involving salaried personnel, two involved foremen and general foremen of the shipping and receiving operation.

One case involved a shipping foreman, an hourly-rated material handler, and a common carrier truck driver. The foreman was in serious financial trouble and in need of extra money. These three became involved in a collusive effort which was very lucrative until broken by plant protection officials.

The second case involved a company truck driver, an hourly-rated shipping clerk, a foreman with eighteen years of seniority and a general foreman with twenty-two years of seniority. These men were stealing a painting contractor's paint from a shipping dock area where it was being stored prior to painting the plant. The thefts were for personal use only. All employees involved were discharged.

The possibility of plant protection personnel becoming involved in collusive efforts with truck drivers must not be overlooked. Many times plant protection personnel are in favorable positions to permit such activity. Plant protection patrolmen assigned to docks or to truck entrance and exit gates are most vulnerable. Plant protection personnel were involved in two of the twenty-nine cases analyzed in Table 1.

One soon learns that when considering the potential for collusion, virtually no one is exempt from suspicion.

II. ROTATION OF PERSONNEL

Rapid and unannounced rotation of personnel occupying strategic positions is a management technique now gaining wider popularity for use in curbing collusive efforts between or among employees. This technique is particularly widely used with hourly-rated employees; however, a few plants are now using this technique for salaried employees as well.

Rotation of hourly-rated personnel has been especially popular in service parts warehousing operations. Instead of having many classifications of employees such as stock picker, packer, material handler, shipping clerk, receiving clerk, and others, each of which has a different wage classification, warehouse managements are now striving to obtain a single job and wage classification for all employees with perhaps the exception of a few higher skilled jobs such as that of a forklift truck driver. As a result of having this broad job and wage classification, personnel could be rotated from job to job at any time without interfering with labor union job and wage classification requirements which usually do not permit such rotations. These rotations are carefully planned in such a way as to rotate continually personnel occupying positions where collusion is felt most

likely to occur. Rotations are planned so that new personnel are constantly being rotated into and out of jobs which require group effort. Job rotations are planned so that particular pairs of groups of people do not always work together.

One of the strongest forces opposing management's attempt to obtain a single job and wage classification has been the labor unions which represent these hourly-rated employees.

This is a relatively new management technique and in most cases has not been in effect for a sufficient time to be properly evaluated. The rotation technique has had many ramifications, some of which appear to be somewhat detrimental to the company. There has been considerable effect on worker morale, work group sociology, and worker efficiency as the result of rapid rotations of personnel. Although some of the ramifications of this innovation initially appear to be detrimental to the company, management tends to feel that in the long run, the technique of rotating personnel will be advantageous for both the workers and the company. Manpower will be more flexible, boredom will be reduced, and workers will get more satisfaction from their work than if they were limited to only one repetitive operation.

Many plants have a policy of rotating salaried supervisory personnel. Usually, the purpose of such rotation is one of training the individuals involved, with no considerations for security and the prevention of collusion. Recently

some service parts warehouses have adopted a policy of rotating their foremen between shifts and among various docks in an attempt to combat possible collusion between foremen and truck drivers.[1]

Another important consideration for purposes of preventing collusion is the proper rotation of plant protection personnel among various post assignments. Some type of rotation has always been common to plant protection departments. Many plant protection departments not only rotate post assignments, but also rotate shifts. Usually post assignments are rotated quite often and in no particular sequence. This rapid and unpatterned rotation is especially important at truck gates and on docks.

Generally, rotation of various personnel who have direct association with the shipping and receiving operation appears to be an important technique used by management in an attempt to prevent collusion between plant employees and truck drivers, among other purposes. This method is especially effective if the rotation is rapid and unannounced.[2]

There are other methods of preventing collusion. One such method is controlling the activities of truck

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[1]Interview with Warehouse Superintendent, Plant #7, May 5, 1965 and interview with Warehouse Manager, Plant #2, June 2, 1965.

[2]Interview with Warehouse Superintendent, Plant #7, May 5, 1965.

drivers while on docks. A discussion concerning this method is contained in Chapter VI.

III. COLLUSION POTENTIAL

The possibility of collusion between truck drivers and dock personnel is a continual problem for the plant management and plant protection directors. Even though this is one of the most feared aspects of the shipping and receiving operation, it is also one of the most baffling and most difficult to handle.

The potential for collusive activities is most difficult to measure. It is a concept, first of all, that is very hard to define. Exactly what constitutes a situation which may result in collusion on docks has been discussed by many persons and little agreement has resulted. Therefore, if there is little general agreement regarding definition, definite limitations are placed upon the accuracy of measuring the concept.

Despite the many limitations and problems involved in attempting to measure this elusive concept, it is felt that some attempt of recording data regarding the collusion potential between dock employees and truck drivers should be attempted.

One possible approach in gaining meaningful information regarding the collusion potential between truck drivers and dock employees is to record the number of

contacts, which are judged to be of a non-business nature, between truck drivers and dock personnel. The subjectivity involved in judging whether a contact is for business or non-business purposes is immediately recognized as a weakness in this approach. Without a doubt, this is an inherent weakness in this methodology; however after having had work experience in the industrial security profession as a patrolman assigned to the protection of docks, and being exposed to many truck drivers and their behavior, considerable understanding has been gained by the writer concerning what is a legitimate business contact and what is not a legitimate business contact between dock employees and truck drivers. A business contact was regarded to be anything that had to do with the shipping or receiving process. In order to qualify as a non-business contact, more than "good morning or how are you" must be involved. To justify being recorded as a non-business contact, usually a short conversation of some nature was necessary. Since the writer was present on the dock when recording this information, many of these conversations were overheard, therefore making it relatively easy to determine if it was of a business or non-business nature.

Considerable time was spent on various docks while recording the pertinent data for this study. At these times, data concerning the behavior of truck drivers who appeared on these docks was recorded. As a result of the method used

in recording this data nearly all ninety-one docks at the fifteen industrial locations included in this thesis became a part of the collusion potential study. Thus, the docks included in this study were of all types, sizes, and handled a variety of material. Data was collected at various times, both during first and second shift operations.

No attempt was made to follow an established pattern specifically designed for the recording of this type of information. Data were not recorded concerning the behavior of every truck driver appearing on the docks. Information recorded concerned only truck drivers who, during the course of their daily travels, enter and exit from the plant premises. This includes nearly all common carriers and many company trucks. Trucks in this category present the greatest danger to industry for they are the ones which have means of removing material from the plant. The trucks excluded from this study are those which worked within a single location transporting material from building to building. These trucks never leave the fences of the plant during the course of their operations. They are usually company trucks. Others excluded were yard switchers since they, too, do not generally leave the premises with trailers.

The sole purpose of this portion of the study regarding collusion potential was to record the total number of drivers who met the established criteria that appeared on the various docks and to record how many of this total

number had contact with various dock employees for what were determined to be non-business purposes. Such a recording of data was hoped to give a general indication of the collusion potential at each individual plant and an overall total for all fifteen plants.

Table 3 indicates the total number of drivers observed at the various docks of each plant and the number of drivers who had non-business contacts with dock personnel, either salaried or hourly.

A significant aspect affecting this study, however, not directly reflected by its results must be noted. The great majority of common carrier drivers visiting a given plant are local drivers as opposed to over-the-road drivers. Local drivers only make pickups and deliveries in the immediate area of their terminals; therefore they become very friendly with most dock employees since they may see them many times a week. The mere existence of such a situation is likely to significantly raise the collusion potential percentage at most locations.

It can readily be seen that this type of situation creates a very significant problem regarding collusion. Anytime that the same drivers, both common carrier and company trucks, continually come to a dock to pick up or deliver material, a certain degree of friendship will be established between themselves and company dock employees.

TABLE 3

PERCENTAGE INDICATION OF COLLUSION POTENTIAL AT EACH LOCATION INCLUDED IN THE STUDY

(1) Plant	(2) Number of Docks	(3) Drivers Observed	(4) Non-business Contacts	(5) Collusion Potential Percentage (4 ÷ 3)
#1	3	18	8	44.4%
#2*	2	19	6	31.6%
#3	18	32	27	84.3%
#4*	19	114	78	68.4%
#5*	5	40	29	72.5%
#6*	3	10	9	90.0%
#7*	3	19	10	52.6%
#8*	3	18	9	50.0%
#9*	3	10	7	70.0%
#10	4	18	4	22.2%
#11*	3	19	5	26.3%
#12	15	30	14	46.7%

#13	3	0	0	0.0%
#14	4	20	13	65.0%
#15	3	11	8	72.7%
		378	227	60.1%

*There was either full-time or part-time plant protection coverage on some docks at these particular plants. These docks were chosen for coverage on the basis of available plant protection manpower and the theft potential of material they handled on these docks.

Another significant problem may arise as a result of the same local drivers continually frequenting the docks. Because of the friendships established between certain truck drivers and dock employees, they begin to exchange social visits with each other at their homes and at "the corner bar." During these associations away from the plant plans may be discussed concerning the best methods to illegitimately remove material from the plant dock. All necessary arrangements may be formulated so that when the driver appears at the dock, the pre-arranged plan may be smoothly accomplished without giving any overt indication of collusion. This type of pre-arranged collusion is very difficult to protect against for there is virtually nothing that can be done to discourage association between dock employees and truck drivers away from the plant premises. Especially alert dock supervision and a properly designed system of checks and balances in dock procedures may be the only effective measure to counteract pre-arranged collusive efforts between dock employees and truck drivers.

The "plant" and "number of docks" column of both Table 3 and Table 2 in Chapter IV are identical. The actual plant represented by #1 in Table 3 is the same as represented by #1 in Table 2 and likewise through #15. This was done so that the reader can make desired correlations between Tables 2 and 3 by plant.

Table 3 indicates that 60.1% of all truck drivers appearing on docks had non-business contacts with various dock personnel. It also indicates by asterisk that eight of the plants included in this study had either full-time or part-time plant protection coverage on some docks. At the eight plants where plant protection personnel were utilized on the docks to various degrees, 61.4% of truck drivers who appeared on docks had non-business contacts with dock employees as opposed to 57.4% in the seven plants where no plant protection coverage was used. Therefore, a 4% higher collusion potential was recorded at plants which utilized plant protection personnel to various degrees on dock facilities. Theoretically, one of the primary reasons for placing plant protection personnel on dock security duty is to discourage activity of this sort. Although the 4% difference represents a relatively small figure, it may indicate that perhaps plant protection personnel who are assigned to dock security duty are not as effective in the realm of preventing collusion as many plant protection supervisors and other management personnel seem to believe.

IV. CONCLUDING COMMENTS

The collusion potential indicated that 60.1% of all truck drivers appearing on docks who met the established criteria had what were determined to be other than business contacts with dock employees, both hourly-rated and salaried.

This is quite a high percentage of this type of contact, especially since plant supervisory personnel at various levels indicated that this type of fraternization was frowned upon by company policy.

Most plants have elected to grapple with the problem of collusion through some type of employee rotation procedure. The degree of rotation varied somewhat from plant to plant. The primary goal of such rotation is to continually rotate different personnel in and out of those positions in which management felt that the potential for collusion was greatest. The rotation of personnel may be an effective method in the prevention of collusion, but as emphasized above, it may have some detrimental effects on employee morale and efficiency. Most management personnel interviewed felt that in the long run, the initial detrimental effects of employee rotation would be overcome with only a minimum amount of adverse effect on plant operations and employee relations. The writer does not share this opinion without some reservation. The responsibility for controlling the fraternization between dock employees and truck drivers has been placed in the job descriptions of all supervisory personnel. Rather than relying so heavily upon the rotation of personnel, perhaps management should place more emphasis on a basic fundamental of proper management, that of supervising its employees to determine whether or not responsibilities assigned to them are being carried out properly.

This responsibility has been explicitly placed in the job description of all persons occupying supervisory positions, but due to laxity in supervising this responsibility, it has been largely neglected. Not discounting the importance of selective employee rotation, it appears that the present heavy reliance on rotation of all employees involved in the shipping and receiving procedure is nothing but a substitution for a more basic principle of management that has been neglected, i.e., the placing of responsibility and proper supervision to determine whether this responsibility is carried out adequately. Most management personnel interviewed seemed to be aware that the practical application of this supervisory responsibility was not being accomplished as it was theoretically outlined. Despite recognition of weaknesses in application, management personnel appeared to be taking little corrective action to counteract such deficiencies.

Perhaps, more selective rotation of personnel and a greater emphasis on the fundamental principle of management regarding supervision of assigned responsibility is a more practical approach to this problem than is now being utilized. Such an approach may result in the diminution of the detrimental effects inherent in widespread rotation of personnel.

CHAPTER VI

FACTORS INFLUENCING THE MOVEMENT OF TRUCK DRIVERS WHILE ON DOCKS

The purpose of this Chapter is to point out and examine some of the ~~most~~ pertinent factors involved in controlling the movement of truck drivers while they are on docks. Excessive and unauthorized movement of truck drivers while on docks may have very detrimental results in the form of collusion between dock employees and truck drivers.

Some security and management personnel do not feel that truck drivers should even be permitted on docks. They feel that the truck driver should be instructed to remain either in his truck cab or in the dock office and never be permitted in the dock area.

Obviously, this would be an ideal situation, for the possibility of collusion would be greatly reduced. In theory, this proposal sounds plausible; however, there are practical considerations involved which must be recognized.

The major considerations are: the driver of a truck is responsible to his trucking firm for the cargo on his truck; therefore he has a legitimate right to observe what is loaded into and unloaded from his truck if he so desires;

it may also be necessary for him to instruct a plant fork-lift driver concerning the order in which he desires his cargo loaded so that its sequence corresponds with his unloading itinerary; and many times the driver must be on the dock in order that he may "scale his load" properly by axle weight. These and other practical considerations become involved in this problem.

Perhaps, sometime in the future when methods, procedures, customs, and dock physical facilities are modified, the elimination of truck drivers from docks will be the accepted method of operation, but until that time, the situation must be dealt with as it exists. Since the practical situation existing in industry today permits truck drivers on dock areas, the following discussion is premised on that fact. Thus, the problem is not one of whether or not to allow truck drivers on the docks, but is one of how best to control their movements in an effort to prevent collusion while they are on the docks.

The writer feels that the degree of friendliness between truck drivers and dock personnel, which may eventually lead to collusion, has a significant relationship with the freedom of movement permitted truck drivers while on dock areas.

There are many factors governing the movement of truck drivers while on dock areas. Physical factors, such as arrangement of certain facilities desired by truck drivers,

use of instructional signs, lines of demarcation, and gate instructions are discussed. Human control features in the form of dock supervision, use of plant protection personnel, and plant relationships with trucking firm managements comprise major areas of interest. These factors are discussed below and their operational effectiveness evaluated.

A model is also presented of what the writer considers the most ideal physical arrangement of a dock area in an effort to curb collusion and also continue permitting truck drivers access to dock areas.

I. PHYSICAL ARRANGEMENT

Obviously, one of the most influential factors governing the movements of truck drivers while on docks is the physical arrangement of the dock itself and the location of various facilities such as rest rooms, telephones, and vending machines.

One of the first items to consider when discussing physical arrangement and its impact on collusion is the location of the dock office where truck drivers must go to have their shipping or receiving documents processed and signed. Every truck driver must go to this point at some time to "clear" his cargo.

Although no quantitative data was recorded concerning this aspect, nearly all of the dock offices at the ninety-one docks observed in this study were located in such a

position that in order to reach them, truck drivers had to cross the dock area. Many were located almost directly in the center of the dock area, supposedly so that the foremen could better observe dock operations. On many occasions, truck drivers were seen talking with dock employees as they were crossing the dock area toward the dock office. Very few dock offices were located at the extreme end of the row of dock wells, so that the driver could proceed up a short flight of steps from the dock well area directly into the dock office. This physical arrangement may contribute significantly to the lessening of contact between truck drivers and dock employees.

Another major area of consideration involves the physical locations of telephones, rest rooms, and vending machines; usually truck drivers desire the use of such facilities while at the dock. An indication of the general location of such facilities on the docks of the fifteen plants included in this study was presented in Table 2, Chapter IV. It must be noted at this time that "dock" as used in Table 2 refers to locations anywhere on the dock area. Many such facilities were located in such places on the dock that in order to reach them, the truck driver must actually cross the dock, thus creating a possibility for many unnecessary contacts with dock employees. In general, very few of these facilities are located in such places as

to permit their use by truck drivers without proceeding onto the dock area.

The location of these types of facilities possibly is contributory to more truck driver movement on the dock areas than any other factor. Due to locating these facilities in other plant areas, away from the dock or at out-of-the-way places on the dock, all sorts of possibilities exist for movement by truck drivers in an attempt to find such facilities. Usually while at such facilities, truck drivers meet dock employees on their rest period; many innocent friendships develop. However, with such ideal opportunities for collusion as are presented by the location of the majority of these facilities, not so innocent friendships may also develop, some of which may lead to collusion.

There is considerable disagreement concerning the obligation of management in providing these types of facilities for truck drivers. Many management personnel feel that the company has no obligation to provide any such facilities.

Based upon experience gained in researching for this thesis and past work experience in the industrial security profession, it seems that truck drivers usually request or seek use of rest rooms and/or a telephone facility in the majority of instances. Usually drivers have a need to phone their terminals in order to proceed on the proper schedule and to receive any changes in the schedule of pickups or deliveries. The use of a rest room involves the satisfaction

of a basic need. In most cases, this need will be satisfied no matter how far the truck driver must go to find a rest room. Thus, it seems that management should provide a rest room and a telephone for truck driver use. In order to achieve the purpose for which they are installed (to control the movements of truck drivers) they must be located in such a place that truck drivers need not cross the dock in order to reach them. It is ideal if they are located at an end of the dock adjacent to the dock office so that they may be properly supervised by dock supervisory personnel. Therefore, the three most important needs of a truck driver appear to be the dock office, a telephone and a rest room. If these are provided and properly located, considerable movement which may lead to collusion could be eliminated. Granted, collusion problems still exist, but through the proper physical arrangement of these facilities, it is hoped that its probability has been diminished.

Some plants have a designated area on the dock at which truck drivers must remain while waiting for their cargo to be loaded or unloaded. The only time they are permitted to leave such areas is when their truck is being loaded or unloaded. Usually these areas were located adjacent to the dock office. Chairs or benches were provided at most areas. Theoretically, it would be ideal if a dock office, rest room, telephone, and waiting area could be provided and physically located with the improvement of security

in mind, at every dock location in industry. However, it is obvious that all docks cannot provide such elaborate facilities. In many cases, it is very doubtful whether the supposed improved security would warrant the financial cost of such elaborate facilities. Which docks do warrant the provision of these facilities and which do not?

This is the question which plant protection, plant engineers, and other management personnel must answer based upon a study of the particular dock facility in question. Some considerations when performing such a study may be the volume of material being handled, the number of trucks using the facility, the relative susceptibility of this material to theft and other related considerations.

It seems that newer plants which are usually designed in such a manner as to consolidate the shipping and receiving operation into as few docks as possible are in a much better position to provide these facilities than older plants which may contain many buildings each of which usually possesses a dock. The docks in newer plants are usually large and process tremendous volumes of material, some of which is attractive for theft and some of which is not. The cost of providing the facilities such as discussed above appears to be warranted at such locations. At older plants which contain many dock areas, it does not appear economically feasible to provide this arrangement of facilities for truck drivers at all docks. Some of these docks contain only one

or two wells and handle only a small volume of material flow. Some are large docks with greater volumes of theft attractive material. Judgment must govern the extent of facilities provided.

Possibly at smaller and less busy docks, only a dock office, a telephone, and a designated waiting area need be provided. If the truck driver desires use of additional facilities, such as a rest room, an escort may be provided to accompany him. Any member of supervision or plant protection may be considered a satisfactory escort. At most small docks, the incidents requiring an escort are usually very few, thus not placing too great a burden on either supervision or plant protection.

It must be recognized that a danger of collusion also exists between truck drivers and the members of supervision or plant protection who escort them to the location of the desired facility. However, the writer feels that the escort situation would not offer as great a potential for collusion as permitting the drivers to leave the dock and proceed to the facility unattended. At least their freedom of movement is confined and their contact restricted to one individual. Due to various unscheduled duties of supervisors and the rotational pattern of plant protection patrolmen, the probability of a truck driver being escorted by the same individual each time he requests the use of a rest room and other facilities is quite remote. This situation favors the adoption of the escort procedure.

II. SIGNS, DOCK LINES, AND GATE INSTRUCTIONS

One means of helping to control the movement of truck drivers may be more use of signs located in plainly visible areas of the dock. These signs would direct truck drivers to remain in designated areas at all times.

Nine of the ninety-one dock areas studied utilize such devices. Most plants using them did not feel they were of much value. One reason for their dissatisfaction appeared very evident; these plants did not enforce the regulations contained on these signs; therefore they became meaningless.

Despite contrary feelings, there are positive aspects to their use. By using such signs, the plant is placing responsibility on the truck drivers, since it is generally considered that truck drivers are responsible for reading and abiding by plant rules and regulations. While on company property, they are likewise responsible for reading and abiding by various signs instructing them as to where they can and cannot go while on the dock. The cost of installing such signs is nominal; if they do have any value in controlling the movement of truck drivers, the money may be well spent.

Red, yellow, or white lines are sometimes painted on dock areas in an effort to limit the movement of truck drivers. Drivers are instructed that they are not permitted to go beyond these lines of demarcation into plant areas.

When the proposal of using dock lines was presented to various plant protection and dock supervisory personnel at each plant, mixed feelings were expressed regarding their effectiveness in controlling the movement of truck drivers. It was generally agreed that such lines would be practical only if used in conjunction with signs which plainly instructed truck drivers not to go beyond these lines. Since no plant included in this study utilized dock lines, no opportunity was available for the evaluation of their effectiveness as a measure in controlling the movement of truck drivers. Their use does present one obvious disadvantage which must be recognized. Lines of demarcation present a maintenance problem of continually repainting the lines for they become badly worn as a result of the heavy volume of traffic which passes over them.

Gate instructions were provided at one plant in an effort to acquaint the truck drivers with various plant rules and regulations concerning themselves and their truck while on plant property. These instructions were printed on a three by five inch card and presented to each truck driver as he entered the plant. The plant reported that this method was well received by truck drivers and also appeared to be effective in controlling the movement of truck drivers at their plant.[1]

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[1]Interview with Chief, Plant Protection, Plant #4, May 7, 1965.

III. DOCK SUPERVISION

The potential security value of properly arranging certain physical aspects of docks was discussed in the above sections. It was emphasized that the physical arrangement may contribute significantly to controlling the movement of truck drivers while on docks.

In order that proper security may be maintained, the movement of truck drivers must be supervised and the designated rules and regulations concerning truck drivers must be enforced.

Potentially one of the most important elements in the enforcement process is the dock supervisor, a foreman as he is usually classified. "Dock supervisor" as used in this section has a reference to a dock foreman.

By virtue of his position, the foreman possesses many of the pre-requisites necessary for carrying out this enforcement role. He is always present in the dock area, knows his employees, and can easily identify strangers on the dock such as truck drivers. He is also aware of the security problem existing on the dock, the rules and regulations regarding behavior of dock personnel and truck drivers, and above all he is the supervisor on that dock.

The foreman also has a lot at stake in the operation of the dock. This is virtually "his" dock and the efficient operation of it affects his getting promoted or even his

retaining his job. In essence, he is held responsible for whatever occurs there, theft included.

Despite his position and stake in the proper operation of the dock, it was found during the research for this study that many foremen were quite lax in their efforts to control the movement of truck drivers and enforce dock rules and regulations.

On many occasions, truck drivers were observed walking unescorted into plant areas in order to use such facilities as rest rooms and vending machines. In three instances truck drivers were followed by the writer to cafeterias. Many other incidents of truck drivers wandering away from dock areas were observed. Many times the truck drivers walked past the foreman on their way into the plant, creating such a situation that it was impossible to believe that the foreman was not aware of this activity. It appeared to be accepted practice. Very few times was a foreman observed warning a truck driver about his movement; most of these were inquiries such as "do you have your safety glasses on?" In most cases security seemed to be the farthest thing from the foreman's mind.

This general criticism regarding the adequacy of dock supervision in enforcing rules and regulations concerning truck drivers is not meant to criticize all dock foremen. There is a small minority who demonstrated that with a little extra effort and alertness, the dock foreman is able to perform this role.

The adequacy or inadequacy in the performance of this security role by the dock foreman was not so much that of individual foremen but appeared to be a manifestation of plant attitudes toward the foremen's role. Thus, foremen at a few plants did what appeared to be a satisfactory job on the dock or at least made a genuine attempt, whereas foremen at most plants appeared to make little or no effort in this realm.

However, no information regarding theft incidents or value could be found that would indicate a higher rate of theft at those plants judged to be poor in enforcing rules and regulations and truck driver's movement as opposed to the plants judged to be performing a relatively satisfactory job.

Various personnel, such as general foremen, superintendents of material, and warehouse managers, all of whomare supervisors of dock foremen, were interviewed concerning what they felt was the role of the foreman regarding the enforcement of dock rules and regulations concerning movement of truck drivers. A statement from one management official is quite representative of comments heard:

> Sure, foremen have a job in this area, but it is difficult for us to see whether they are doing the job properly. They get paid for moving material across at that dock, not baby sitting for truck drivers. They soon learn on what side their bread is buttered.[1]

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[1]Interview with Superintendent, Material Control, Plant #3, April 26, 1965.

This remark reiterates that in theory, top management does feel that foremen have a responsibility in enforcing dock rules and regulations concerning truck driver movement; however, a poor performance of this less significant function may be tolerated if it is offset by a superb performance of moving material across a dock. In essence foremen get paid for moving material; if this is satisfactorily done, little else counts.

The foreman has many times been characterized as a man between "the devil and the deep blue sea." This is usually in reference to his position relative to management and labor. However, he is in a similar position relative to the demands placed upon him by his supervisors to move material quickly and economically and the demands placed upon him by the plant protection department. As in the case of labor and management, he is not able to properly serve two masters. Therefore one suffers in preference for the other. In this case it is obvious which suffers namely, plant protection. The attitude of the typical dock foreman seems to be "I'm paid to move material, not guard it."

In summary, the foreman is the logical person to exert most control over the movement of truck drivers. He is the only person of supervisory status on the dock who rightfully has the authority to tell a truck driver what he can do and what he cannot do. This is the demand plant protection is placing on him in the absence of dock security

officers; however, management is also placing other demands on his time and attention. The foreman is tangled in the ambiguity of his position.

For the fulfillment of certain job demands he is richly compensated monetarily; for others such as security duties, he receives nothing but possibly a few verbal tokens of appreciation from the plant protection department. It is not difficult to determine in which direction his attention will be lured.

From a security viewpoint, fully recognizing the demands of his position, it is hoped that the foreman will attempt to spend as much time as possible on the dock and do his best to control the wandering of truck drivers away from particularly designated areas. Plant protection needs all the assistance it can receive in controlling the movement of truck drivers and the enforcing of dock rules and regulations; any assistance from the dock foreman is greatly appreciated.

IV. PLANT PROTECTION

The use of plant protection personnel on docks appears to be decreasing throughout American industry. Years ago it was traditional that every dock must have a plant protection officer in order to secure the company's property. Now relatively few industrial dock areas have plant protection personnel. The plants included in this study are no exception.

The primary purpose of placing plant protection patrolmen on docks is to protect the company's property from theft and misappropriation. This is the common rationale reiterated by plant protection directors when questioned as to why patrolmen patrol docks. Little mention was made of controlling the movement of truck drivers in an effort to prevent collusion. For some strange reason, many plant protection personnel do not seem to surmise a relationship between these two concepts. It appears that patrolmen fail to comprehend how excessive movement of truck drivers, which may result in their establishing contacts with company personnel, may lead to collusion and ultimately to thefts of great quantities of material from the dock. As a result of this failure, observation for small individual thefts by truck drivers seems to have taken priority over adequately controlling the movements of truck drivers. Emphasis seems to have been misplaced.

Of the ninety-one docks included in this study, fourteen docks had full-time patrolmen during dock operating hours and one dock had a patrolman on a part-time basis. These fifteen dock areas which had some degree of plant protection influence were distributed among eight of the fifteen plants included in this study.

Generally, the patrolmen at these docks paid little attention to the movements of truck drivers. The majority of their time seemed to be consumed wondering what to do with

themselves while they occupied that post assignment. These men were obviously bored with their jobs and their performances for the most part reflected this fact. In an effort to combat boredom and improve efficiency most plants rotated men on these assignments. Rotation intervals varied from every hour to every two weeks.

Many times patrolmen were observed fraternizing with dock employees and truck drivers. Matching coins to determine who would buy coffee seemed to be a favorite past time.

On two occasions at a single plant, a patrolman accompanied truck drivers to coffee machines on the third floor of the building at which the dock was located. It was obvious that this was not for security escort reasons.

Generally, "disappointing" is the word to describe the role played by plant protection personnel in attempting to control the movements of truck drivers. Most plant protection personnel apparently either did not realize that this was a part of the reason for them being on the dock or they were neglectful in the performance of this duty. Some plant protection directors emphasized the value of the psychological effect of having a patrolman on the dock. They felt that the psychological effect created by having the patrolman on the dock would discourage excessive movement and conversation between truck drivers and dock employees. This is a debatable contention, but it does merit consideration.

However, rather than discouraging collusion between dock employees and truck drivers, a 4% greater collusion potential was noted at plants in which plant protection personnel were utilized for dock security duty as opposed to those plants in which no plant protection personnel were utilized on the docks. This study indicates results contrary to the contentions of those plant protection directors who emphasized the psychological value of patrolmen in controlling excessive movement and conversation between dock employees and truck drivers.

In order to be most effective at those docks which management feels may merit the presence of plant protection patrolmen, the plant protection director has a responsibility to see that the patrolmen assigned to such posts are properly trained regarding the type of behavior and activity toward which they should direct their attention. Controlling the movements of truck drivers must be strongly emphasized as an important part of their job. Plant protection shift supervisors must see that these duties are carried out in such a manner as to be most effective in combating the ever present possibility of collusion.

V. RELATIONSHIP WITH TRUCKING COMPANIES

Usually before the trucks or employees of a trucking firm are given permission to enter the premises of a plant, plant rules and regulations governing the truck company's

equipment and/or personnel are thoroughly explained. There is an understanding that employees of the truck company will abide by these rules and obey any legitimate requests on the part of plant supervision while at a given plant.

Since the trucking industry is so competitive, a trucking firm will make many sacrifices in order to obtain a large account. Most trucking firms are very concerned that the behavior of their drivers while on company premises is acceptable by the company's standards. Trucking firms strongly urge that any misconduct on the part of the employees be immediately reported to the firm's office. Thus, when such a situation as this exists, one of the most effective means of disciplining a driver who continually violates plant rules and regulations and disobeys requests of supervision and plant protection is to notify his trucking firm and request that this individual not be sent to the location at anytime in the future. Upon taking such action, most plants also imply that they will take their business elsewhere if the situation does not improve. This provides an industrial plant with a tremendous leverage.

However, in order that this leverage be effective, dock supervision and plant protection personnel must be attempting to control the movements and behavior of truck drivers or they would never become aware of such violations or acts of disobedience.

VI. ADDITIONAL CONSIDERATIONS

Various factors which influence the movement of truck drivers while they are present on docks have been discussed in this Chapter. These factors have been evaluated in reference to their effects upon controlling the movements of truck drivers while on dock areas. The purpose emphasized for controlling drivers was to prevent collusion activities which may lead to thefts from docks. Obviously, this is the most important consideration for the purpose of this thesis; however, there are additional considerations which merit mention at this point. Perhaps these additional considerations may serve as influential forces to compel all members of management to put forth a more sincere effort to curtail the movements of truck drivers. The additional points to be considered involve safety and wasted company time which results from conversation between truck drivers and dock employees.

Safety is a very important aspect of modern industry. Special effort is made to insure the personal safety of all plant employees. Conversely, there appears to be relatively little consideration given to the safety of truck drivers while they are at the plant. It seems that the possibility of accidental injury to a truck driver while he is at the plant dock areas must be recognized. At most docks there are many men and machines rapidly moving about the area.

Continual alertness on the part of truck drivers is necessary in order that they not become involved in an accident. Thus, it cannot be too strongly emphasized that truck drivers not be permitted on any area of the dock unless it is necessary for them to be there to assist in loading or unloading operations.

Still a greater danger for injury exists when truck drivers are permitted to go from the dock area into the plant for various reasons. Most truck drivers are not familiar with plant processes, practices or procedures; therefore their mere presence in such unfamiliar areas may place them in great danger.

The safety aspect involved in the movement of truck drivers while on plant property should be a very important concern to plant management, since the plant is usually considered responsible for such injuries and may have to pay the medical costs for injuries incurred on its premises.

On many occasions, drivers and dock personnel were observed engaged in conversation. Discounting the potential for collusion involved in such instances, these conversations were usually on company time when emplcyees had a responsibility to devote full attention to their job. When considering the total number of truck drivers who become involved in such conversations over a period of time, considerable working time is lost to the plant. By strictly limiting the movements of truck drivers to certain designated areas

away from dock employees, the plant would be able to save a substantial amount of working time which is now being wasted.

These additional reasons for controlling the movements of truck drivers are felt to be of considerably greater importance than most plants seem to acknowledge.

VII. MODEL PHYSICAL DOCK ARRANGEMENT

As a concluding portion of this Chapter, the writer has attempted to propose a model physical dock structural arrangement which is felt may contribute most significantly to effectively controlling the movement of truck drivers while they are at docks to make a pickup or delivery. It appears that this type of design is justified at most newer plants since most are architecturally designed so as to consolidate material handling operations into one dock area each for shipping and receiving. The cost of constructing such a facility would be justified in the case of a large dock which ships and receives relatively high-value and theft-attractive material.

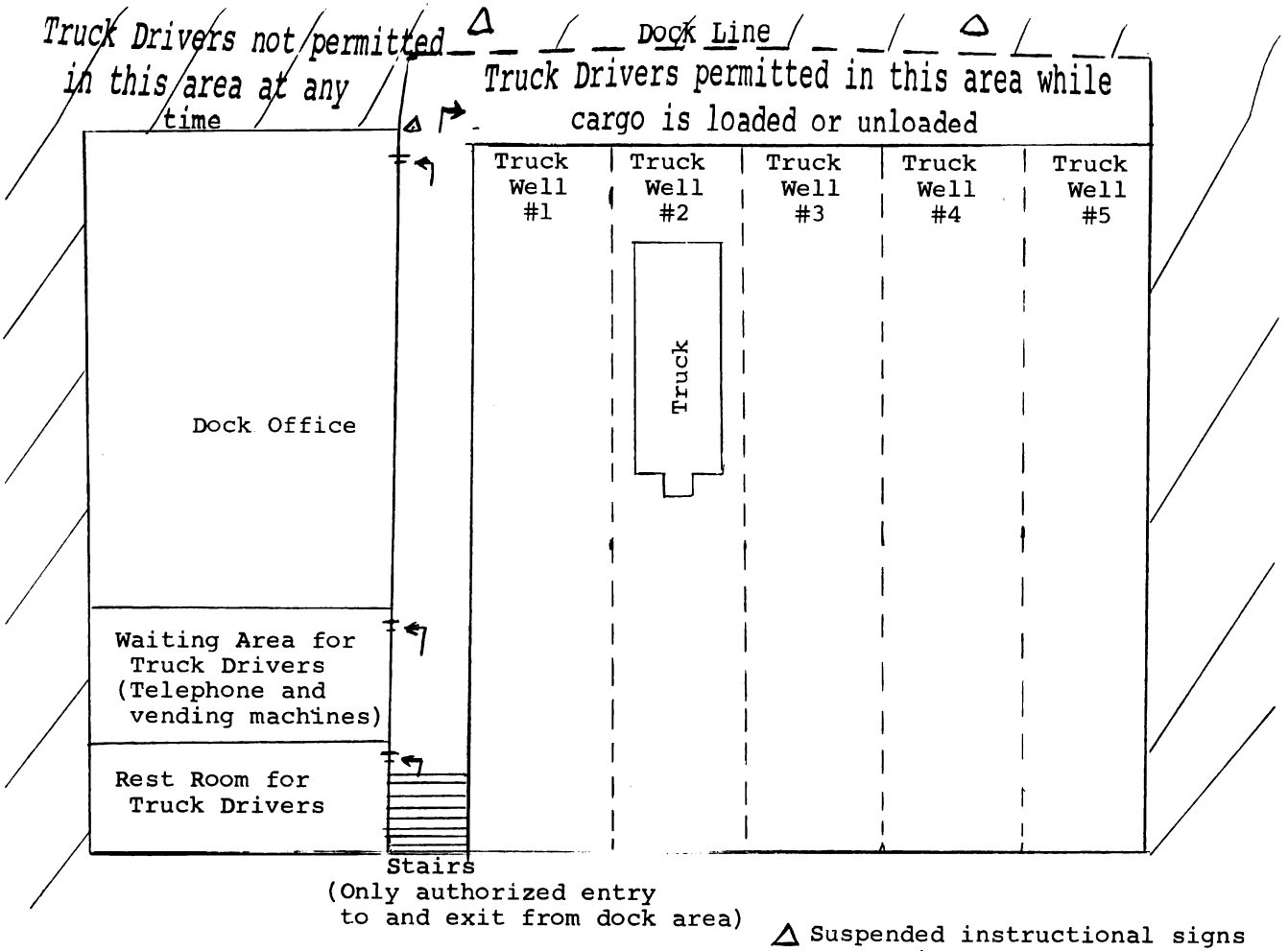
In the case of a dock area which ships or receives steel, for example, either in coil or bar form, such an elaborate design may not be justified. Management must use discretion when determining whether a particular dock warrants such an installation or not.

This design represents what is suspected to be an ideal physical arrangement of a dock area. It has an

advantage of containing all necessary facilities located at the end of the line of dock wells where they are accessible from the dock well area without crossing the dock itself. With all necessary facilities centrally located, there is no need for truck drivers to be on any area of the dock except when their cargo is being loaded or unloaded. The centralization of facilities also has the advantage of permitting the foremen easier supervision of persons using such facilities. Under the proposed design, dock lines would appear on the dock floor. In order to realize the effectiveness of lines for controlling the movement of truck drivers, the use of these lines is supplemented with strategically placed signs instructing truck drivers regarding their activities when they are on the dock assisting with the loading or unloading of their cargo.

This design is presented on the assumption that contempory shipping and receiving procedures, practices, and customs are used. New concepts in materials handling and modifications in shipping and receiving operational procedures may render this proposed ideal physical arrangement obsolete.

Following on page 139 is a design of the proposed ideal physical arrangement of a modern dock area.



△ Suspended instructional signs governing the movement of truck drivers while in the dock area.

Figure 1. Model Physical Dock Area.

VIII. CONCLUDING COMMENTS

There are, without a doubt, other forces influencing the movement of truck drivers while on docks. The forces elaborated upon in this Chapter were those most common and potentially the most effective in controlling the movement of truckers in the industry chosen for study in this thesis.

Generally, forces controlling the movement of truck drivers are of two basic types, namely the physical arrangement of the dock and the human influence of dock supervision. Theoretically, these two forces should complement each other; however, it is the opinion of the writer that in the absence of proper supervision an ideal dock physical arrangement would be rendered largely ineffective for controlling the movement of truck drivers. Therefore, it cannot be emphasized too greatly that the most ideal physical arrangement of dock facilities may be of limited value if the human forces of the management team do not properly supervise the activity of drivers who utilize such physical facilities. An ideal arrangement of physical facilities, such as proposed earlier in this Chapter, provides the dock supervision with much needed assistance in controlling the activities of truckers; however, such an ideal physical arrangement is not meant to be a crutch for inadequate supervision. Both the forces of physical arrangement and human supervisory talent must function simultaneously to have the most effective control of drivers.

In order to successfully combine the potential advantages of both the forces, cooperative efforts on the part of all personnel involved are necessary. Representatives ranging from the plant protection, plant engineering, and materials management departments must function together in an attempt to establish the most effective supervisory and physical means for controlling the movements of truck drivers while on the docks. The endeavors of each department must be supplementary to those of other departments which are assisting.

Generally, all members of the management team must develop a sincere interest in solving the problem of solving the problem of excessive truck driver movement and function together to overcome the problem. As mentioned above, a cooperative working relationship between management personnel of various trucking firms which serve the plant and plant management personnel is also an important consideration.

If this type of cooperation becomes a reality, an industrial location would quickly establish a reputation as one at which truck drivers realize that they must remain in designated areas at all times or be subject to severe reprimand, both from plant management and from their trucking firms. Continual vigilance on the part of all responsible plant personnel is a requirement for the establishment and continuance of such a reputation.

CHAPTER VII

PERSONNEL SECURITY MEASURES

"Personnel security" is a broad term which encompasses many aspects. The term usually suggests a discussion revolving about such concepts as loyalty, security or suitability, each of which is somewhat different, but much more related than most people realize. Dr. Leon H. Weaver, editor of Industrial Personnel Security, suggests that each concept is concerned with an assessment of qualities of human beings and that each has as its central idea fidelity to trust. This fidelity to trust may involve an ideology, property, or money.[1]

Personnel security is usually looked upon as involving two major systems: the private system not affected by government regulation and procedures, and the various personnel security programs of the Federal Government. The conceptual use of loyalty, security, or suitability many times depends upon which of these two major personnel security systems is being discussed. Loyalty and security concepts usually have reference to the Federal Government

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[1]Leon H. Weaver (ed.), Industrial Personnel Security (Springfield: Charles C. Thomas, 1964), Preface, p. vii.

programs and suitability ordinarily has more applicability to private programs. This Chapter is approached from the latter point of view.

All fifteen industrial locations included in this study involved private personnel security systems which had no Federal Government security regulations. Therefore, the loyalty and security of particular individuals was not a consideration of any importance for this thesis. Suitability, that is, the wide range of considerations which must be studied and evaluated prior to placing a person into a given position, is the concern of this Chapter.

The proper selection of personnel is one of the most important jobs in any industrial plant. This vital process is concerned with protection against the hazards of theft of money or materials, as well as properly selecting personnel possessing qualifications necessary for accomplishing the job for which they are hired. Each plant employee represents a great investment; therefore, management has a responsibility to itself to properly investigate each applicant regarding his suitability to perform a particular job.

Usually the primary responsibility for obtaining suitable employees is placed upon the personnel department. The various policies and procedures of the personnel department which govern the employee selection and promotional processes largely represent personnel security in private industrial concerns.

Personnel security programs pertaining to various dock employees is the primary concern of this Chapter. Adequate personnel security programs concerning this type of employee is felt by the writer to be imperative. These personnel are responsible for and handle valuable company property at a particular location (the dock) where the potential for collusive actions resulting in large thefts of material is possible. Material handled by these personnel is "money" to the company. Therefore, recognizing that these are critical positions, the suitability of a person to hold such a position must be thoroughly studied and evaluated.

There are many classifications of personnel on most docks. Among them are both salaried and hourly-rated employees. Obviously, personnel security procedures regarding each job classification cannot be discussed individually in this thesis. Therefore, this Chapter concerns personnel security procedures as they pertain to the two major categories of dock personnel, hourly and salaried.

Of particular concern in this Chapter are pre-employment screening as it pertains to both hourly and salaried dock personnel, plant wide seniority and its effects on dock security, importance of the material checker job classification, the pro's and con's of bonding dock employees, and a proposed personnel security program for dock employees.

I. PRE-EMPLOYMENT SCREENING

Theoretically, pre-employment screening involves those practices and procedures which are performed in an effort to determine a person's suitability for a job prior to hiring the individual. These practices and procedures take various forms, many of which are unique to a particular type of industry or plant.

Pre-employment screening is necessary for both hourly and salaried personnel. Since the large majority of dock workers are hourly-rated personnel, the major emphasis of pre-employment screening in this Chapter involves practices and procedures common to them. A short discussion in reference to salaried personnel follows a discussion and evaluation of the methods most applicable to hourly-rated personnel. It must be pointed out that in the company studied pre-employment screening procedures for general hourly personnel are the same as those followed for hourly dock personnel. There is no difference in procedure; all hourly-rated personnel are processed in the same manner, regardless of job classification.

Initially, all potential hourly employees must complete an employment application form. Usually such a form requests personal information concerning the applicant such as height, weight, marital status, state of health, military status, etc. Most states now have laws which prevent the asking of questions such as date of birth, age, race,

religion, organizations of which the applicant is a member and other similar information that could be used to discriminate against the potential employee. A few states do not permit the asking of questions regarding the sex of an applicant. Other information usually requested on an employment application form involves the level of education attained by the applicant, a list of personal references, and previous work experience.

The completed employment application form is then quickly evaluated by a member of the employment office, which is a part of the plant's personnel department. The potential employee is then interviewed. At this time a decision is made concerning whether or not the applicant merits further consideration for employment.

If it is decided that the person merits further consideration, a more extensive investigation regarding the applicant is begun.

This has been a very general outline of the procedure which occurs up to this point. It is the investigation that follows that is of most interest for the purposes of this thesis.

It is usually at this point ~~where~~ That most private personnel security systems break down and become relatively ineffective in their attempts to determine the suitability of a given person for a certain position. The systems utilized at

nearly all the industrial locations included in this study were no exception.

These investigations are either performed by the plant itself or are contracted to an agency which specializes in that type of work for a fee. The amount of the fee depends upon how thoroughly the person in question is investigated. If the plant performs its own investigation, the employment office and the plant protection department usually share the responsibility.

Of the plants included in this study, only one contracted its investigatory functions to an agency. This agency was Retail Credit Company, a nation-wide company that performs various types of investigations.

Many variables become involved which govern the scope and depth of this investigation. For instance, if the plant immediately needs an individual with a particular skill, a man possessing that skill may be hired without verifying any of the information on the application form. Any investigation which is done on such a person follows during the probationary period prior to the employee's gaining seniority. Many times a plant needs a great number of persons within a relatively short period of time; thus, the employment office and the plant protection department do not have sufficient time to investigate them properly. These and other similar circumstances influence the scope and depth

of the investigation which takes place concerning a particular individual.

Under normal circumstances, some type of investigation is completed, hopefully before the applicant is hired or soon after. Theoretically the purpose of the investigation is to verify information indicated on the employment application form regarding such things as past work experience, educational level attained, and involvement in any type of criminal behavior. Personal references indicated on the application form also may be checked.

The actual investigations which existed at most locations were found to be quite different from the theoretical approach. Past work experience was considered to be the most important aspect on an application form to verify. All plants included in this study attempted to verify indicated past work experience to some degree. This aspect of the investigation usually involved sending special forms to previous employers for completion. Most such forms requested information verifying employment dates and requested an evaluation of the applicant's past work performance. In most cases, these inquiries were by letter; in a few instances they were by telephone. From one to three previous employers were usually included. Special efforts were made to locate employment gaps and investigate them. Instances have been known when employment gaps were represented by time spent in prison. Most employment and plant protection

departments emphasized that they placed little weight on the evaluation given by previous employers regarding the applicant's work performance. The primary concern of such inquiries was to verify the fact that the applicant was, in fact, employed by the company during the times stated on his employment application form. Investigation of past work record was the only aspect of pre-employment screening done unanimously by all plants included in this study.

Education level was felt to be important by some plants if an applicant has had no previous work record, such as in the case of a young person just graduated from high school. At most plants the educational record is not verified, even in the absence of previous work experience, if the person did not attend schools in the general vicinity of where he is applying for work. The cost involved was cited as a primary reason. Another reason cited was the unfamiliarity with school officials and their usual reluctance to release information.

In general, verification of education level indicated on employment application forms was done only in the case of a young person with no previous work experience who came from the general area in which the plant was located.

Perhaps, the most important aspect of this investigation, at least as far as this thesis is concerned, regards the verification of an applicant's statement concerning the existence or non-existence of a criminal record. The

application form at all industrial locations contained a question inquiring as to whether the applicant has ever been arrested. Thirteen of the fifteen plants included in this study made no attempt to verify the truthfulness of the applicant's response to this question if he indicated that he had never been arrested. However, most of these plants indicated that if, during the probationary period, supervision became suspicious of the new employee, a police check would be ordered. Many times police checks are difficult to obtain. A major problem involves the cooperation of police agencies. Police agencies do not particularly like to be bothered by industrial plants who send them long lists of names for which a police record check is requested. It places a serious burden on most police agencies to process the volume of names that a large industrial plant may submit. If the applicant indicated an arrest, all plants followed with a thorough investigation of the incident. Two of the fifteen plants attempted to verify the applicants response to this question whether it was negative or positive. Both plants conducted a local and a state police check on each individual considered for employment. One of these plants had a relatively small hourly work force; as a result it was not a severe burden on local or state police officials to check each individual. The second of these plants is the only plant of the fifteen which contracts with an agency to

perform its entire pre-employment background investigation on each potential employee.

A criminal record which involved such crimes as larceny, burglary, or petty theft could have serious implication for dock security if such a person were hired by a company and eventually obtained a job on the dock, one in which his larcenous tendencies may be sharpened. With present pre-employment screening procedures regarding police checks of criminal involvement ~~being~~ so lax, this situation is very possible. Most plants indicated incidents regarding the falsification of information concerning involvement in criminal behavior on employment application forms. In an effort to counteract the existing difficulty in obtaining police record checks, perhaps police agencies could perform such services on a fee basis, thus making such activity more economically attractive to them. This would, at the same time, provide industry with a source of much needed information regarding the potential employee.

This is not to advocate that industry should not hire persons with criminal records. Industry should give these people an opportunity; however, discretion should be used regarding the type of positions they are given.

> At General Electric's Schenectady plant, for example, the personnel office checks out all places of previous employment and requires the applicant to account for his entire work history. A further investigation is made if there is suspicion that the applicant is covering up a criminal record. 'We don't believe in isolating this type of person from

> society' says John Pritchard, G.E.'s Security Chief at Schenectady, 'but if we do hire someone with a criminal record, we'll see that his job doesn't put him in the way of further temptation.'[1]

One of the major obstacles in keeping such a person on a job where his potential for theft would be lesser is the labor union influence. Additional discussion concerning the union and management's effort to gain control over movements of manpower is contained in the section of this Chapter concerning plant-wide seniority.

Reference checks provided by the potential employee on his employment application form were not considered of too much value. Only six of the fifteen plants involved in this study checked references at all. Most such reference checks fail to do anything but glorify the person being investigated. The plants included in this study failed to use "blind" reference checks. "Blind" reference checks are persons other than those which the potential employee listed on his application form. Such individuals may be employees at the applicants last place of employment who worked closely with him or neighbors who live in the same area as the applicant. Reference checks such as these may supply a more objective evaluation of the individual than those listed on the employment application form.

Only one location investigated the potential employee's credit rating. This was the location which

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[1]Irwin Ross, "Thievery in the Plant," Fortune, LXIV (October, 1961), p. 202.

contracted with the Retail Credit Company to perform the pre-employment screening investigation. At this particular plant, the Retail Credit Company also performed a neighborhood check on each potential employee and drove past and evaluated the place of residence in which the potential employee lived. In general, Retail Credit Company performed a very thorough investigation of all new employees at this particular location. This was a small warehouse which handled many high-value and theft-attractive items. Management felt the money spent for properly investigating each new employee was well spent when considering its type of operation and the potential for theft.

No locations included in this study used polygraph examination in an effort to verify what the applicant indicated on his employment application form. The labor union representing the hourly-rated workers felt that the use of the polygraph infringed upon the individual rights of the workers. Use of such an instrument was not even considered by management. No fingerprinting of hourly-rated employees was done at any location included in this study. There were many reasons for this, the most influential being the cost and lack of facilities to process the fingerprints.

As one can readily discern, most locations included in this study discovered very little concerning the overall suitability of a potential employee to hold a given position of employment. Only the past work record portion of the

employment application form was investigated by all locations. The depth of this investigation also left much to be desired at most plants. Some locations only checked one previous place of employment.

The remaining aspects of the employment application form, such as level of education, existence or non-existence of a criminal record, checking of references and other additional points, were verified at a few plants to varying degrees, but at most plants were not verified at all.

There is considerable debate concerning the value of such verification at all. Since most verification contacts are made with people with whom the potential employer is not acquainted, considerable apprehension exists in their minds regarding the release of any information for fear that it will be mishandled and not treated in strict confidence. It also seems to be human nature for most employers not to release adverse information on a former employee. It appears that they feel that they do not want to be the person directly responsible for the individual not gaining employment even if this employment may be detrimental to the new employer.

In general, the private personnel security practices and procedures utilized at the industrial locations included in this study left much to be desired regarding effectively evaluating a potential employee's suitability. Most locations recognized the many possible weaknesses in their

practices and procedures; however, they felt that for their purposes, existing practices and procedures were adequate. They felt that the additional costs which would be involved to improve present personnel security practices would not be economically justified. This may be true, for it is very difficult to demonstrate in dollars and cents the actual value of a personnel security program that is properly organized and implemented.

Present labor union agreements which involve a probationary period before the new hourly-rated employee gains seniority in the union give management additional time to observe the new employee while on the job. Under provisions in the union contract, an employee may be released at any time during the probationary period. During this time he is not entitled to the grievance procedure or union representation. Therefore, management keeps close watch on all new employees during this time. Any suspicion or acts of unusual behavior are thoroughly investigated. Any additional pre-employment screening that is felt necessary is performed at this time. Management feels that this provision supplements its relatively poor pre-employment screening procedures.

All plants included in this study had another provision designed for their protection. This provision, in essence, stated that any employee who falsifies company records, employment application forms included, is subject to immediate discharge. This provision applies to salaried personnel as well as hourly-rated.

Salaried personnel are subjected to a pre-employment screening procedure of considerably greater scope and depth. The salaried personnel of special significance in this study are dock foremen. Management makes an effort to thoroughly verify all facts indicated on the potential employee's application form. Any discrepancies are noted and the applicant is questioned concerning them.

Many foremen are recruited from colleges and universities. Available school records concerning the individual are consulted. Professors, advisors, and other university officials may be interviewed. The applicant himself may be subjected to various departmental interviews at the plant and may be requested to take a battery of tests. Usually, companies know much about an individual prior to eventually hiring him from the campus.

Some dock foremen may be individuals promoted from the hourly-rated ranks. Management subjects these persons to a very thorough investigation before promoting them to salaried status. All pertinent information felt necessary to know about the employee is obtained, verified, and evaluated. These persons are usually interviewed by various plant personnel. Many times they are required to participate in a battery of mental, psychological, and apptitude tests in an effort to determine their qualifications for a foreman's position.

II. IMPLICATIONS OF PLANT-WIDE SENIORITY

Plant-wide seniority is a development which has recently occurred as a result of evolution in labor-management negotiations in the industry studied for the preparation of this thesis. As a result of plant-wide seniority agreements, an hourly employee in almost any part of the plant has a right to a particular job in any other part of the plant if he has more seniority than the man now performing that particular job and he can demonstrate to management and the union that he is capable of adequately performing that job.

Prior to this development seniority was usually restricted within a single department or at least within a much smaller jurisdiction than the entire plant. The union bargained in favor of plant-wide seniority on the premise that great amounts of newly installed automation were reducing plant manpower in an unfair and non-uniform manner. Installations of automated equipment had much greater influence on some departments than others since certain jobs lend themselves to automation much more readily. The union contended that in departments where manpower was being reduced to the greatest extent, men with considerable seniority were being laid off while in departments in other parts of the plant in which little or no automation was installed, employees with substantially less seniority remained on the job. It was felt that with the initiation of plant-wide seniority, the lowest seniority man in the plant, regardless

of department, would be laid off when manpower cut-backs occurred. This appeared to be a satisfactory method of handling this problem as far as plant employees were concerned; however, it presented management with some formidable problems.

Plant-wide seniority has resulted in considerable transferring of personnel from department to department, sometimes creating inefficiency and additional costs to management for training purposes. Personnel desiring positions in departments other than their own may obtain such positions if they have more seniority than the person holding that position at that time.

Such a concept may result in persons of questionable suitability obtaining positions on dock areas. If this person has the required seniority and demonstrates that he is able to perform the duties required of the position, he has a right to the position and management must accept his presence in that position. Therefore, management has little control over the personnel who occupy a given position if these personnel demonstrate that they can adequately perform the duties required by that position.

As the reader can readily discern, plant-wide seniority has significant implications for dock security. Men who are very able to perform the duties required of a dock employee may possess other characteristics that may not be deemed most suitable for employment on docks. So long as

this employee does adequately perform the duties of this position, management may not demand the removal or transfer of this person to a position it deems more suitable for him.

Many companies were found to be willing to hire parolees, persons with criminal records, and ex-convicts. However, most companies indicated that they would like to have such a person employed in less critical positions than on docks and where they may be properly supervised. This is particularly true for persons who have been involved in any type of criminality involving theft. Management also emphasized that it did not desire that such persons be employed in any position on docks where the potential for theft and misappropriation is relatively high when compared with many other areas of the plant. However, management recognizes that under the provisions stated in plant-wide seniority, it is very possible for such individuals to gain positions on docks.

Positions on docks are usually in high demand in every plant. These positions are thought to be relatively easier than those in which a machine or assembly line governs the pace of the worker. By the very nature of the work, supervision is more loose on dock areas. The dock areas of many plants are characterized as the "old people's home" of the plant because of the slower and more relaxed working pace.

As a result of the great attractiveness of these positions, their relatively high potential for theft, and the existence of plant-wide seniority, management and plant protection must remain especially alert concerning the quality, suitability, and above all the motives of persons who transfer from other departments to dock areas.

III. MATERIAL CHECKER JOB CLASSIFICATION

There are many classifications of hourly-rated personnel working on docks. Some of the most common are material handler, forklift truck driver, utility man, shipping clerk, receiving clerk, stock chaser, and material checker. Of all hourly-rated dock job classifications, none is felt to be more critical, from a security point of view, than that of the material checker or its equivalent. It must be pointed out that the classifications listed above may be designated by somewhat different nomenclature in various plants and companies.

New hirees are very seldom, if ever, placed in a position of material checker. Nearly all material checker positions are filled by personnel who have gained seniority working on other jobs on the dock, such as material handler or forklift truck driver or have gained seniority in wholly unrelated areas of the plant, but as a result of plant-wide seniority agreements, have moved to a material checker job.

If such a person has the necessary seniority and can demonstrate that he can do the job, it is his.

The point to be emphasized here is that material checker jobs are usually filled by persons who are presently employed at the plant, rather than by new hirees who have no seniority and little or no experience in that type of work. Management usually has little voice in who gets the job of material checker when there is an opening. It is based almost entirely upon union seniority charts.

The material checker has many responsibilities which are critical to the security of docks. He is the person responsible for checking material onto trucks as it is being loaded from the dock. He records every item that is loaded on a particular truck and checks what was supposed to have been included in the load. In essence, he probably has more control over the material that is physically shipped from the dock than any other individual, including the shipping foreman.

On receiving docks, the material checker is responsible for verifying that the plant did, in fact, receive all the material that it had ordered.

Many material checkers on receiving docks are authorized signers of the truck driver's freight bills. The signing of such bills acknowledges that the plant did receive the proper number of pallets or cartons of material which the freight bills designated for delivery. The signing of

such documents release the trucking company from further responsibility for the material. On some docks, bills of lading which authorized certain material to be shipped from the plant were signed by material checkers.

Material checkers are sometimes authorized to sign truck passes. Truck passes usually designate one of two things; they may indicate that the truck was empty when it left the dock, or they may indicate that the material remaining on the truck did not belong to the company. These passes are presented to the patrolman at the truck gate when the vehicle exits from the plant. Usually plant protection patrolmen take these passes at face value and make little effort to verify their truthfulness. This can be an especially vulnerable procedure in instances of the truck pass which states that the material remaining on the truck is not plant material; therefore, much responsibility is placed upon the material checker to be sure that the material is not plant property.

In the case of many of these documents, it was necessary that they be countersigned by the foreman; however, in most cases this was only a token gesture. The real responsibility for the information contained on the document rested with the material checker. The material checker works very closely with truck drivers who may appear on docks. Therefore, by virtue of performing the duties of his position, he comes in contact with many truck drivers. The potential for collusion in his position is great.

As one can readily discern, the material checker occupies a very critical position as far as dock security is concerned. Therefore, it is very desirable that management learn as much as possible about this individual to insure his suitability for holding such a responsible position.

As a result of the responsibility management places upon this individual, the effects of plant-wide seniority provisions, and the potential for collusion inherent in the position, it is felt that a special effort should be made by management to thoroughly investigate all persons who occupy the position of material checker.

Under present personnel security programs, very little more is known about this individual than about the man who operates a press in the pressed metal area of the plant where there is little to steal other than a coil of steel. The writer feels that this situation is wholly unreasonable in light of the relative security implications involved in each position.

The position classified as material checker also needs to be upgraded relative to other dock hourly-rated jobs. For example, a forklift truck driver and a material checker were of the same wage classification at most docks included in this study. The existence of this wage structure appears to be a failure to compensate the material handler commensurate with his responsibility. Granted, there is skill required in the proper operation of a forklift truck,

but when weighing this skill against the responsibility placed upon a material checker, it appears that the material checker is being short changed.

At most docks, the material handler, a position requiring relatively little skill and virtually no responsibility, is compensated only slightly less than the material checker. This too, appears to be inequitable when evaluating the skill and responsibilities involved in the duties of both classifications.

The old proverb which states that one cannot buy honesty may be true; however, it is felt that by upgrading the personnel occupying this most responsible position, they will realize that management does feel that they are important and recognizes this fact by paying them more than personnel who have much less responsibilities in shipping and receiving operations. If this psychological state of mind can be achieved, the material checker classification of personnel may identify much more closely with management and the company.

Since the material checker is recognized by nearly all persons as occupying a very significant position, not only from a security standpoint, but also from a material handling point of view, there are some who propose that this classification be made a salaried position, thus making the material checker a member of the management team. Those who advocate this modification feel that most docks need a

salaried employee other than the foreman, and the material checker is the most logical choice.

One of the major obstacles in making the material checker classification a salaried position lies with the labor union. At this time the union strongly opposes such a change, because a salaried material checker would actually be doing the work that it feels unionized men should perform. The union emphasizes that the salaried material checker would not supervise as does the foreman, but would be actually working. Therefore, until this formidable hurdle can be negotiated, the material checker remains an hourly-rated person.

In summation, as a result of the responsibility placed upon persons who occupy positions of material checkers and the exposure of these persons to possible collusion activities with truck drivers, a more adequate personnel security procedure regarding these personnel and an upgrading of their wage classification more commensurate with their responsibilities is strongly urged.

IV. BONDING OF DOCK EMPLOYEES

The bonding of employees who hold positions of trust has long been accepted as a means of insuring restoration of money or property in case of financial loss caused by the act of a specified employee. A bond is actually an insurance contract by which a bonding agency guarantees payment of a

specific sum of money to an employer in event of a financial loss caused him by an act of a particular employee or group of employees.

There are many types of bonds available. Bonds may be obtained for various amounts of coverage depending upon the position of trust, the individual involved, and other factors.

Both individual bonds and blanket bonds are available. Individual bonds are those types in which the employee applying for the bond is requested to complete and submit an individual application to the bonding company. Information on the application form is studied and evaluated by bonding company investigators. Usually some sort of an investigation follows in an effort to verify this information and determine whether the individual in question is bondable. A premium is set by the bonding company for the given position. This premium is paid by management in most cases.[1]

A blanket bond is one which includes a large group of employees, none of which is individually investigated. From past experience, a bonding company sets a premium upon a certain group of employees. Management pays the premium for the coverage of these employees at all locations included in this study. In essence, the bonding company is gambling on the honesty of these employees.[2] The following statement

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[1]Interview with Comptroller, Plant #4, April 14, 1965.

[2]Ibid.

from an article in the Harvard Business Review has reference to the gamble that bonding companies take in the case of blanket bonds,

> Considering the premium rates charged, few bonding companies can afford to employ a sufficient number of competent investigators, or spend the time needed for properly screening applicants for bonds. They rely on the law of averages and hope it will work in their favor.[1]

Individual bonding of dock employees was thought to be an effective means of assuring management that suitable personnel would be employed on docks. Management felt that the bonding company would discover any undesirables who could not qualify for bond during the course of its investigation. As a result, the particular individual would not be permitted to work in the shipping and/or receiving area. The investigation conducted by the bonding company became an effective personnel security program for the plant.

This situation has since changed considerably. At the present time dock employees are still bonded, not under individual bonds, but under blanket bonds. "Only positions of accountability, such as supervisors are bonded individually; hourly-rated personnel who are employed to handle the material on shipping and receiving docks are bonded under blanket bond provisions only."[2] "Individual bonding of

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[1]Harvey Burstein, "Not so Petty Larceny," Harvard Business Review, Vol. XXXVII (May-June, 1959), p. 73.

[2]Interview with Comptroller, Plant #4, April 14, 1965.

hourly-rated personnel is too much bother and seems to be largely ineffective."[1]

Two forces appear to have been most prevalent in affecting this modification. The initial force was the labor union. Investigations of individual union members for the purposes of determining whether or not they were bondable became a bargaining issue. Labor was strongly opposed to such investigations. The labor union which represents the majority of the employees at the industrial locations included in this study negotiated this issue successfully with management. It achieved its goal of forbidding such individual investigations. The union stated that it did not care if management continued to bond the hourly-rated employees, dock personnel included, but it would not permit having its membership individually investigated by any bonding company. The union felt that the investigations represented an invasion into the personal lives of its members which could result in various forms of discrimination. Therefore, if management desired to continue bonding union members, it must do so under provisions of a blanket bond which entailed no individual investigation.

The second major force in eliminating the bonding of individual dock personnel were the bonding companies themselves. Bonding companies became so competitive that they

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[1]Interview with Comptroller, Plant #6, April 29, 1965.

felt that they could no longer afford to individually investigate each member of the shipping and receiving group. Bonding companies became willing to accept all hourly-rated personnel, dock employees included, under a blanket bond. They investigated no one, only gambled upon the honesty of all personnel involved. The gamble seems to have been successful for many more employees are included under blanket bonds each day.

Largely as a result of these two forces, it was the blanket bond which existed for all hourly-rated dock personnel at the various plants visited in the preparation of this thesis. Management has now lost the form of personnel security it once had as a result of bonding companies individually investigating each employee.

Some feel that bonding has a positive psychological effect upon the bonded individual. This positive effect results from the mere fact that he is bonded and he knows it. This makes him feel that his job carries prestige and is more important than an ordinary "run-of-the-mill" job. The bonded employee feels that management has given him a position of trust.

Bonding may have this effect under an individual bond where the employee completes an application for bond and knows that he will be investigated by the bonding company concerning the information on that form and other pertinent data deemed necessary to know. It is very doubtful

that there is any positive psychological effect upon most employees who are bonded under the blanket bonding system. No application for bond is completed and no investigation of the individual follows. Some hourly-rated dock employees were interviewed regarding their feelings about being bonded. Most did not even know that they were bonded!

Most security and plant protection personnel felt that under the present blanket bonding system, the positive psychological effect upon the employee was very little or nothing. A high ranking company plant protection official stated that, "years ago when you paid for your own bond and knew that you would be investigated, bonding meant something."[1]

Dock salaried personnel, such as foremen are also bonded. They are requested to complete an individual application for bond. Dock foremen and other salaried personnel holding positions of trust are bonded individually.

V. PROPOSED PERSONNEL SECURITY PROGRAM

Existing personnel security practices and procedures are not considered by the writer to be sufficient for modern dock operations. Lax pre-employment screening practices, plant wide seniority, and other factors have opened many

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[1]Interview with high ranking company plant protection official (job classification purposely withheld for sake of anonymity), Company Central Office, June 15, 1965.

doors of potential theft and defalcation in the shipping and receiving operation. Despite the great improvements which have occurred in many areas of industrial endeavor, private personnel security programs remain much the same as they were fifteen or twenty years ago. They have remained relatively constant during a time of revolutionary change in the American social structure. Population mobility has created conditions which have rendered most private personnel security programs in use today quite inadequate. The day is passed when the plant knows each of its employees and their families on a personal basis. Today, one may find a man working in a Detroit automobile plant who was born in Alabama and who has had previous residences and work experience in California and New York. This is an extreme example; however, many incidents exist in which persons drive thirty to fifty miles to work each day, or the particular individual in question may have just moved to the city where the plant is located from another city two hundred miles away where he had lived most of his life. In general, a large percentage of most modern industrial work forces may not have been born and raised in the area where the plant is located. It is this type of mobility that has outdated most private personnel security programs since, as indicated earlier in this Chapter, nearly all pre-employment screening done is of a local nature, and would, therefore be almost totally ineffective for the type of worker increasingly found in industry today.

It seems that, in many cases, employment departments and plant protection departments perform these rather cursory investigations to satisfy top management that they are, in fact, doing something to ensure that the company is hiring the type of people it desires. Top management becomes lulled into a false sense of security as a result of the superficiality existing in most modern private personnel security programs.

When hard pressed, employment and plant protection personnel readily admit that they really do know very little about the suitability of the plant work force, shipping and receiving personnel included. This lack of knowledge concerning the work force vividly demonstrates a weakness in present personnel security programs.

Obviously, the performance of a thorough pre-employment screening of all personnel hired by a plant would necessitate the expenditure of considerable amounts of money and require a substantial manpower increase in the employment and plant protection departments. It may be doubtful that such an effort would warrant the additional cost, time, and manpower.

Since docks are one of the most vulnerable areas for theft in the entire industrial complex, it is proposed that all personnel occupying positions on such docks be thoroughly investigated. This proposal is especially important regarding those dock positions which have contact with truck

drivers in the course of normal operations. Of all the personnel employed at a particular location, personnel holding dock positions represent only a small minority of the total work force. It appears feasible that a thorough investigation of these personnel would be within reason. With a little extra effort on the part of the employment and plant protection departments, this proposal should not place undue burdens upon either. Possibly, this work could be contracted to an agency which specializes in work of this nature. Regardless of how this is accomplished, it is felt that a thorough investigation of dock personnel is mandatory for the maintenance of proper dock security.

Usually persons who are employed in various dock positions are not hired directly into those positions. These people are initially hired into the plant as common laborers, assembly line workers, warehouse stock pickers or packers, or various other job classifications which do not bring them into direct association with the shipping and receiving function. As a result of plant-wide seniority and desire to work on docks, these persons may be transferred to dock positions. It is at the time of the transfer that this person's suitability for such a job should be thoroughly investigated. At the time of this transfer, the employee should be required to complete a form similar to the employment application form. The purpose of completing such a form is to provide management with up-to-date information concerning

data usually requested on the employment application form. The person's suitability for dock employment can be evaluated from the information on such a form.

Since persons are hired only very seldom specifically for placement on docks, most investigations will involve persons being transferred from their present positions to positions on dock areas. However, if a person is hired specifically for a dock position, a thorough pre-employment screening procedure should occur prior to initial employment.

The goal of this proposed personnel security program is to thoroughly investigate and screen all personnel who hold dock positions, regardless of whether they are transferred to those jobs or whether they are hired directly into such positions.

The writer feels that the proposed personnel security program is necessary since dock workers hold positions of trust in the company and by the very nature of their positions they may easily become involved in collusive efforts with various truck drivers. These collusive acts may result in considerable loss of property to the company. Management has a responsibility to itself and the company to learn more about these individuals so that more adequate protection may be devised.

This personnel security program should include a thorough check and verification of all data indicated on either the initial employment application form completed by

the person hired directly into the shipping and receiving area or on the form similar to the employment form required of employees who transfer from other parts of the plant to dock positions. All references should be contacted, and above all, police record checks should be requested from all localities where the individual indicated that he has resided.

The reader may question the value of learning so much about the individuals who work on the docks, since in most cases management has little control regarding who works on the dock and who does not. This fact is fully recognized; however, it is felt that despite the general lack of control, the proposed personnel security program can contribute much to the dock management function. Initially, it provides management with considerable knowledge regarding the men working in dock positions. Management is able to evaluate each employee and determine those individuals who have what are felt to be unsuitable records for employment in positions of trust, such as positions on docks. By virtue of this knowledge, dock foremen can maintain closer observation and supervision over these individuals. A supervisor who knows his employees well is usually able to supervise them more adequately. Proper supervision may be a very important factor concerning a person who may become involved in thievery from the dock area if given the opportunity. If pre-employment screening or investigation reveals any information concerning an individual which may make management

suspicious of him in any way, management can be forewarned and thus, can supervise the individual accordingly.

The proposed personnel security program may also discover individuals who have purposely falsified information on their employment application forms. This could be grounds for discharge if management feels that it would be in the best interest of the company to do so. Knowledge of such action on the part of a dock employee also places management in a favorable bargaining position with the labor union in an effort to have such a person removed from the dock area and transferred to a less vulnerable area of employment.

It is hoped that over a period of time, the proposed personnel security program would be contributory toward improving the caliber of personnel generally found on docks.

VI. CONCLUDING COMMENTS

Prior to commencing research for this thesis, the existence and effectiveness of personnel security measures regarding dock personnel was suspected to play a significant role in dock security. As a result of performing the field research aspect of this thesis, this feeling was confirmed in the mind of the writer. This was particularly so regarding personnel security programs for hourly-rated employees.

Generally speaking, most personnel security procedures regarding hourly-rated employees amounted to very little more than a token attempt to verify that information on the

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employment application form which was the easiest and least expensive to verify. As a result most plants knew very little about their hourly-rated employees, especially from a security point of view.

This situation seems to be becoming worse instead of better. Many factors account for the erosion of long accepted personnel security measures. Some of the most significant of these factors are the great population mobility of modern times, the increased influence of labor union activity which generally opposes many personnel security techniques, and various state and federal legislation prohibiting certain investigatory techniques.

Obviously, these factors are certain to lessen the effectiveness of present personnel security measures. But, rather than devising new methods and procedures and attempting to restore effectiveness to industrial personnel security measures, it appears that most personnel departments and plant protection departments are content to accept the lesser security now available. There seemed to be little creativity or spirit of innovation (to discover new and more effective personnel security procedures) in the thinking of many individuals interviewed at the plants. Many of these persons appeared to have given up attempting to overcome the factors which have hindered their effectiveness. As a result of such attitudes on the part of many plant personnel responsible for conducting personnel security programs and the increasingly

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widespread effect of the factors related above, many personnel security programs have been undermined to the extent that they exist in name only. Their effectiveness in discovering information of security significance has been greatly reduced. Top management appears to have realized the general ineffectiveness of existing personnel security procedures. They appear to have taken a round-about way in attempting to correct this recognized deficiency. As a substitute for the inadequacies of most present personnel security programs, management has instituted elaborate systems of checks and balances and various supervisory techniques, such as more extensive personnel rotation, primarily to combat the many forms of employee dishonesty.

The direct cost of devising and supervising many of the present systems of checks and balances amounts to quite a substantial sum of money. This is not to mention the intangible cost in the form of inefficiency and unfavorable employee relations which the writer suspects may result from the greater use of employee rotation and other similar techniques which have a tendency to undermine employee morale and confidence.

The writer believes that management may be allocating great sums of money in the wrong direction. Rather than allocating millions of dollars each year toward the formulation and supervision of various systems of checks and balances designed to catch those who steal and attempt to

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defraud the company by numerous methods, perhaps management ought to allocate more of its resources, both human and monetary, toward improving existing personnel security programs. Such improvement should be primarily directed toward identifying those individuals whom management suspects to be undesirable before they are hired. It is the opinion of the writer that rather than relying so heavily upon an elaborate system of checks and balances to identify and expose undesirable employees such as those who might steal, management may be farther ahead in the long run to place increased emphasis on the more basic fundamental of personnel management, that of more adequate employee selection through an improved personnel security program. The present emphasis seems to be slanted to the side of devising systems to expose undesirable employees after they have been selected.

This is not to advocate the elimination of all systems of checks and balances which have been devised to protect the plant's interests, but it is meant to imply that much of the financial and human resources presently allotted in that direction be re-routed in the direction of improving personnel security methods. The resulting improvement in employee selection may negate the need for many of the elaborate systems of checks and balances and supervisory techniques utilized in modern industry.

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CHAPTER VIII

INVENTORY CONTROL METHODS

An inventory is an itemized listing of goods or property which is kept in stock by a place of business or an industrial plant. Usually the size and type of operation governs the number of parts maintained in inventory.

"The average manufacturing corporation has about 24% of its assets invested in inventories and only 39% in net property, plant, and equipment."[1] "(Other assets are cash, accounts receivable, and miscellaneous items.) Inventories are the second most important asset in the average company, and their control is one of the most vital phases of materials management."[2]

It is necessary that inventories be controlled for many reasons. One of the most important is production control. This type of control is most common to a manufacturing or assembly location. Production and material control departments are usually responsible for maintaining the proper

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[1] Dean S. Ammer, Materials Management (Homewood, Illinois: Irwin, Inc., 1962), p. 6, citing Quarterly Financial Report for Manufacturing Corporations. (The exact figures vary from quarter to quarter.)

[2] Ibid.

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quantities of various materials which are necessary to fulfill the needs of production. It is imperative that this department know exactly how much of each necessary part is available so that production may be scheduled accurately. It is desirable that a certain amount of "bank" be maintained for each necessary item so that if a supplier should fail to meet his scheduled date of material delivery, the scheduled rate of production may be maintained. Too much material on hand, or too large a bank, must also be guarded against for such situations result in high storage and handling costs which ultimately affect the profit structure of the company.

As a result of this brief discussion, it becomes very clear why production and material control departments have a need for properly controlled inventories.

Another major reason for the maintenance of proper inventory controls involves service parts warehousing operations. In a service parts warehouse where no production occurs, it is necessary to maintain a proper supply of stock to fill anticipated customer orders. In order to determine if the warehouse does have the quantity of stock it feels is necessary, there is a need for knowing the exact quantity of each part it possesses at any given time.

Superimposed upon and interrelated with all reasons for inventory control is the aspect of security. Inventory controls must be established not only for the purpose of maintaining proper production control and the adequate

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completion of customer orders, but also for the maintenance of the proper security of these materials. "Whatever type of system is in use, it must be made to serve the security program. Inventory control and periodic spot checking can alert the warehouse manager to thefts before they reach serious proportions."[1]

The primary security value of all inventory control techniques lies in the function of comparing the quantity which was found to be in stock by actually counting or weighing the material (physical inventory) with that quantity which should be in stock (book inventory) according to clerical records. Obviously, if the book inventory is not maintained on a perpetual basis, i.e., adjusted during the course of the business day as a result of receipts and various disbursements, it may not reflect the true figure concerning the quantity which is actually in stock at the given point in time. Rather than being an up-to-the-minute inventory, it represents an after-the-fact figure. Such an after-the-fact figure may be a very accurate indication of the quantity of material which was supposed to be in inventory at a particular time in the past, perhaps five days ago, but for purposes of utilization for verification of a physical count just performed, it has very limited value. Large

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[1]William T. Lewe, "Warehouse Security, Sitting Duck or Fort Knox?" Security World, Vol. I, #3 (November, 1964), p. 22.

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quantities of the particular part may have been received and disbursed within this five day period. Such transactions would not be reflected in the available book inventory figure. It can be readily discerned that the primary security value to be derived from inventory control procedures lies in the continual availability of a perpetual book inventory figure for all items. In order to be of the greatest security value, knowledge of the exact quantity of a particular part that should be in inventory must be available simultaneously with the physical count of that part. If such book inventory knowledge were always available for each part, discrepancies noted between the physical inventory and the book inventory would probably represent true shortages of material. It is possible that the discrepancy may be due to theft from the plant's docks. Immediate knowledge of verified inventory shortages places the plant protection department in a more favorable position for investigating such losses.

Suspected physical inventory shortages based upon after-the-fact book inventory figures and present physical count figures may not be due to losses at all, but rather due to the cycle time necessary for the paperwork of receipts and disbursements to be processed and reflected in book inventory. The more widespread use of modern electronic data processing equipment is constantly reducing such cycle time and making great strides toward providing continual availability of perpetual book inventory figures.

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Therefore, in order that physical inventory counts taken for security purposes be most effective, it is advantageous that perpetual book inventory figures be continuously available for each part in the plant. This is especially important for those parts which are highly attractive for theft, since frequent inventory counts are requested on these parts for security purposes.

Various elements designed specifically as security precautions are built into a modern industrial inventory system. It is the purpose of this Chapter to discuss these elements and how they relate to the entire inventory control system.

Inventory control methods vary widely from location to location. Some systems are relatively simple, while others employ very elaborate and sophisticated controls. Many controls are specifically designed for the particular needs of a certain plant and may be totally inoperative at another plant. Despite the many variables found in inventory control procedures, all contain certain broad and basic principles. These broad and basic principles are the concern of this Chapter.

Special attention is focused upon the annual physical inventory, various special inventories, security inventories, and the role of electronic data processing equipment in improving inventory control procedures.

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I. ANNUAL PHYSICAL INVENTORY

The most common inventory known to industry is the annual physical inventory. As the name implies, this is an inventory which is taken once each year. It usually involves inventorying everything a plant has on its premises, both in the realm of productive material and non-productive material. In most cases the plant is shut down except for those who are involved in the inventory taking procedure. There is no production, or shipping and receiving of material during this time. All scrap is disposed of and all material is sorted and identified by part.

Prior to taking the annual physical inventory, the book inventory is closed out for the year. The book inventory reveals the quantity of each part that the plant is supposed to have on hand after all receipts and disbursements have been totaled. The book inventory is maintained by various means. Some locations maintain book inventory by posting receipts and disbursements on ledgers, while others use electronic data processing equipment and punch cards. Given that the book inventory is accurately computed, it is the goal of the annual physical inventory count to match the book count.

Annual physical inventory taking can be a slow and cumbersome task. Plant managements are continually striving to make the physical inventory taking process as efficient as possible.

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In preparation for the annual physical inventory, the plant is usually sub-divided into designated areas; each area has an inventory foreman in charge of directing the inventory taking procedure. He is assigned a group of hourly-rated personnel who perform the actual counting of the inventory.

The personnel performing the counting procedure are usually employees of the materials department and various production departments. These men are divided into teams of two or three men for the purpose of performing the physical count. Persons directly responsible for maintaining the physical inventory during the normal operating year are not assigned to a team which counts the inventory in their usual working area. This is a security aspect which is invoked in an effort to prevent manipulating the count to conceal a theft.

In addition to inventory foremen, the work of these various counting groups is overseen by members of the plant's auditing section of the accounting department. Auditors from the parent company are usually assigned to the plant during the physical inventory period. Special auditors from private unaffiliated accounting firms may be also employed at this time. It is the duty of these persons to oversee the operation and see that it is properly performed. All these persons are professional auditors and represent

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disinterested parties. By their very presence at the plant, these persons represent a built-in security measure.

The plant auditing section then assigns an inventory ticket to each different part in the various plant sub-divisions. One inventory card is assigned to each part. These tickets are pre-numbered and are issued in sequence. All sequential numbers must be accounted for in each sub-division upon the completion of the physical inventory. Inventory tickets are divided into two identical parts since most plants utilized the "two-count" inventory system.

Annual physical inventories were nearly all "two-count" inventories. The "two-count" system was initiated in order that accountability and security could be improved. The "two-count" terminology means that two different counting teams count the quantity of each different part that is available. Each counting team counts independently of the other. The initial counting group does not know which of the other groups will follow it for the second count. The first counting team indicates its count on one of the two identical inventory tickets assigned to each part. This ticket is then torn off and the second ticket is completed independently of the first by the second counting team.

Upon completion of both counts, the two identical inventory tickets are matched and audited by representatives from the auditing section. If the two independent counts agree, that count is accepted as the final inventory count

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for the particular part. If the two counts do not agree, as many counts as necessary are ordered until any two of them agree. This additional counting is directly overseen by a member of the auditing section.

One plant used a "one-count" physical inventory system. An entirely disinterested person performed this count. If this count was within the tolerated limits pre-established for each part, it was accepted. If not within the tolerated limits, additional counts were performed in an effort to determine a final acceptable physical inventory quantity.

Some plants which were included in this study had what were called "no-count" inventories. "No-count" inventories were composed of a few parts such as small washers, seals, and cotter pins. These items were not counted every year. Most plants counted such items on a schedule in which one-third of these part numbers would be counted each year. Therefore, in a three year period, each part would be counted once unless additional counts were felt necessary. Management did not feel that the cost and time involved in performing an annual physical count of such low-value material was warranted.

There are three basic methods used in counting the physical inventory. They are the hand count, label count, and scale count. The hand count is the actual physical counting of each part piece by piece. This counting method

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is used for most items, especially larger parts and the high-value parts.

Label counting is used on any part that is packaged in a standard pack and there is no evidence of tampering with the package or carton. The count on the label is taken as the quantity in that particular carton.

Scale counting method is used to inventory various types of steel, such as coil and bar steel. It is also used to inventory very very small parts such as nuts, bolts, and washers. It would not be feasible to physically count this type of material. Such a count would consume too much time and obtaining an agreement between two counts would be practically impossible. Every scale weight pound represents a pre-determined quantity of a particular nut or bolt. The total quantity can easily be computed when the total weight of the part is determined. Usually weight counts are only a one count procedure. Items are weighed only by one team of inventory counters under close supervision.

As stated earlier, it is the goal of the annual physical inventory to arrive at the book inventory. Usually a certain value or quantity variance which will be tolerated between these two figures is established. Any count that falls within the established tolerances is considered adequate. Those counts which do not fall within the established tolerances are investigated in an effort to determine why the count is either over or under the book inventory figure.

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If the source of the excess or shortage cannot be determined, a special inventory adjustment is ordered. A special inventory adjustment is an adjustment of the book inventory to the quantity which was actually found to be in the plant as a result of the physical count. It is different from the normal inventory adjustment which is performed when the physical count was found to be within the tolerated limits, but not exactly the same quantity of the book inventory figure.

There are many reasons why book inventories and annual physical inventories do not agree, theft being only one. In manufacturing and assembly operations, a certain quantity of material is received into the plant. This material is disbursed for the manufacturing or assembling of the plant's product. Most of the material disbursed is utilized in the manufacturing or assembling of the product. However certain quantities of this material are found to be defective or machined improperly. Such material does not measure up to quality control standards and must be scrapped. Scrap tags are supposed to be prepared for this material, but often are not. Therefore, this material will reflect on the book inventory as a shortage since it never became a part of the plant's product and no record was completed indicating that it was scrapped.

Other material may be sent to the company or plant engineering laboratories for testing purposes; some may find

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Provisions have been made in the form of various types of documents for the control of such disbursements of material which do not become part of the plant's final product. Such documents are designed so that these various types of disbursements may be accounted for and reflected in the book inventory of a particular part. However, many times these documents are not completed when such disbursements are made, therefore, a particular part may ultimately reflect a shortage in its book inventory as a result.

Discrepancy between book inventory and physical inventory may also be a result of clerical mistakes, lost material, and floor losses. Floor losses represent situations in which items such as nuts, bolts, and washers may be dropped or spilled on the floor and swept up by a sweeper and ultimately thrown into the trash with other rubbish.

What is known in the industry as "shrinkage" is also another possible means of achieving an inventory shortage. This is most common in pressed metal and stamping plants. It results when a tooling change occurs and the specifications for steel have not changed to meet the new tooling. For example, on a particular job fifteen parts were being produced from a piece of bar steel eight feet long with only a quarter inch of the bar resulting in waste. Now, as the result of a tooling change, only fourteen parts are being

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produced and three inches of the same eight foot bar is being wasted. As a result of such a change in tooling, the plant is producing only fourteen parts and is using the same amount or poundage of bar steel. Many times such a problem is the result of poor communication between the purchasing department and the particular production department. As can easily be seen, inventory shortages in manufacturing and assembly operations may be the result of many different things.

In a service parts warehouse operation, the annual physical count should be more easy to verify with the book inventory, for usually the only legitimate method of disbursement is to sell the material to customers. Since much of the material in a service parts warehouse is a usable product and is highly attractive for theft, any type of inventory shortage must be thoroughly investigated for theft may be the source of these shortages.

An attempt was made at some manufacturing and assembly plants and service parts warehouses to determine what percentage of total inventory shortages were due to theft in general. As a result of the inventory figures available in the form of receipts and disbursements it was possible to note inventory overages or shortages for each part. However, due to the many different things which may result in an inventory shortage, theft being only one, attempts to pursue this path were abandoned. The records available were not designed specifically for this purpose and any attempt

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to utilize them in such a manner may result in only false and dangerous generalizations.

Perhaps, the only relatively safe generalization which can be expressed as a result of this attempt is that service parts warehouse inventory shortage figures may have a more significant relationship with theft than inventory shortages discovered at manufacturing and assembly plants. The primary reason seems to be that, generally speaking, service parts warehouse material is more attractive for theft and is more saleable than most material found in manufacturing and assembly plants.

II. SPECIAL INVENTORIES

Special inventories are physical inventory counts which are taken periodically throughout the year. None is as inclusive and elaborate as the annual physical inventory. In most instances, special inventories serve as supplements to the annual physical inventory. Special inventory counts are usually performed by hourly-rated personnel who work in the area where the particular part is stocked. These men are supervised by foremen or members of the auditing section when performing such counts.

Some special inventories are taken on a periodic basis as a matter of routine. Routine periodic special inventories are usually taken on parts which plants call their "big money items." Others are requested because

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At some industrial locations which manufacture only a few very high-value products, special inventories on such products may be taken on a daily basis, for the loss of any one unit would represent a loss of many thousands of dollars to the company.

In some instances, special inventories are requested at random by the auditing section. There is no particular reason for such an inventory other than keeping personnel responsible for maintaining the inventory of the particular part alert in the performance of their duty. The auditing section may also desire to determine the physical inventory of a given part and compare it to the recorded book inventory. This is only one way to randomly check the inventory status of various parts.

In manufacturing or assembly plants, a special inventory is usually requested when a particular part continually appears on the critical shortage listing although book inventory figures indicate that there should be an adequate supply of the particular part available. This type of special inventory actually amounts to an investigation in an effort to determine why these parts are not available and where they might be. They may be lost or misplaced, stolen from the manufacturing or assembly line area, or stolen from the dock area. It must be remembered that such shortages may also be

due to any of the various reasons elaborated upon earlier in this Chapter.

In service parts warehousing operations, special inventories are usually requested when a particular part constantly appears on a back order listing. According to book inventory, the warehouse should have a sufficient quantity on hand to complete customer orders which have been received by the warehouse; however, when the stock picker goes to pick the part, he finds that there is none available, or that there is not a sufficient quantity on hand to complete the order. An investigation will be launched in an attempt to determine why there is not a sufficient supply of a particular part in stock when the book inventory reveals that a sufficient supply should be in stock.

Periodic special inventories are usually routine at most warehouses for certain high-value and highly attractive parts. One warehouse included in this study, which maintained a stock of extremely highly attractive and high-value parts, required a special inventory on most parts on a daily basis. At this plant, a report was issued each morning from the electronic data processing center concerning the amount of stock which was supposed to be in the warehouse. The stock picker who was assigned to a particular area was responsible for conducting the special inventory of all parts in his area. His physical count should agree with the daily

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book inventory which was published. The plant referred to this special inventory as an "internal inventory."[1]

As a result of using the special inventory approach, losses of particular parts may be detected before growing into large financial losses to the warehouse. However, because of the large number of parts in most warehouses, it is feasible to perform periodic special inventories on but a few parts. The cost involved in such inventories is substantial and is not justified but for a few parts.

In reference to those parts not included on special inventory listings, only the presence of continual back ordering may serve as an indication of possible theft losses between annual physical inventories. Therefore, it is very necessary that frequent back ordering of particular parts be immediately and thoroughly investigated. Items which continually appear on back order listings when book inventory indicates that a sufficient quantity should be in stock are frequently placed in security inventories. The security inventory is discussed in a later section of this Chapter.

The special inventory has great security significance if properly implemented. Discretion must be used in determining which parts a plant will include in its routine special inventory listing. High attraction for theft is a major criterion for chosing such items. Thus, if properly

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[1]Interview with Superintendent, Shipping and Packaging, Plant #12, May 19, 1965.

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executed, the special inventory may be a very effective weapon for discovering shortages of any kind, those due to theft being the major concern for purposes of this thesis. As a result of the special inventories, shortages may be noted soon after their origin. Such knowledge is very essential for the effective and efficient investigation of such shortages.

III. SECURITY INVENTORIES

A security inventory is one composed entirely of high-value and extremely highly attractive parts. The parts initially chosen to be included in a security inventory are those which plant management felt merited special protection and accountability. "The attractive items should be placed in storage areas which can be kept under observation easily by supervisory personnel. These special areas also should be kept under lock and key and special periodic inventory checks should be made of them."[1]

Both productive and non-productive material may be placed on such a listing. The value of the part and its attractiveness for theft are the primary considerations in determining whether or not a part is placed on a security inventory.

Usually security inventory items are secured in fenced cribs or specifically designed rooms physically

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removed from the normal plant inventory. Only authorized personnel are permitted in such areas. Unauthorized personnel in such areas are subject to disciplinary action. In most cases, a loyal and trusted hourly-rated employee with considerable seniority is placed in charge of the security crib or room. He is responsible for what is received and disbursed from that crib. His actions are subject to constant review by his supervisors, plant management, and the auditing section. The honesty of this individual is of vital importance.

Some plants kept their security cribs or rooms locked at all times. Only a few persons were issued keys for the lock. In most cases, only members of supervision who were responsible for operations in that area of the plant were issued keys. In order that any item be removed from the security crib, a member of supervision must unlock the crib and physically release the proper quantity of a particular part. In most cases the locks on security cribs were changed very frequently to insure better security.

Physical count of each part included in the security inventory was taken at various intervals. Some plants included in this study physically counted their security inventories twice a day. The final count of the day was verified with the book inventory of the electronic data processing count. Other plants physically counted their security inventories daily, weekly, monthly, or at three month intervals.

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Most plants maintained the established physical count intervals unless a reason was found to count the part more frequently. All counts were verified with the book inventory count at each counting interval. Usually, a member of supervision, such as a foreman, who had responsibility for the security inventory, and a disinterested outsider, sometimes from the plant protection department, performed such counts.

Many security cribs maintained perpetual inventory at the crib for each part on security inventory. Such inventories were usually maintained on a ledger. Each receipt and disbursement was posted on the ledger for the particular item. Such perpetual inventories were maintained in addition to the electronic data processing perpetual book inventory or the ledgers posted for central inventory control purposes.

The establishment of security inventories and security cribs have been generally successful in maintaining proper control of theft-attractive parts. It is very important that the inventory listing included in the security crib not become so large that the necessary tight control and accountability is lost. Management must use discretion regarding what parts should and should not be included in such an inventory. Parts must be continually added to or taken from the security inventory listing as the need arises. Only the parts most highly attractive for theft should be included.

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IV. ELECTRONIC DATA PROCESSING EQUIPMENT

Electronic data processing equipment has recently gained wide acceptance in many phases of business and industry, one of the most important of these being in the general area of materials management. Many of the functions involved in the materials management operation can be accomplished more rapidly and with much more accuracy by this equipment than by human effort.

One of the most important segments of materials management, that of production control, has seen revolutionary changes as a result of electronic data processing equipment.

Presently, some applications of electronic data processing to production control are quite elementary, while others are highly sophisticated and almost beyond comprehension to the layman. These various stages of evolution are usually in direct proportion to the length of time that a plant has used electronic data processing equipment for such purposes. It takes considerable time to establish an electronic data processing system that is applicable to a plant's specific operation.

As a result of the application of this equipment in the area of production control, inventory control methods have likewise been affected. The result, in some cases, has been the existence of perpetual book inventories on all items or parts in the plant. This included both finished

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goods and various raw materials. Perpetual book inventories are maintained on non-productive materials as well as productive.

In the case of the manufacturing or assembly plant, perpetual book inventories have made it possible for production control officials to determine at any given time how much material is available for productive usage. As a result, production can be scheduled more quickly, more accurately, and for a longer period in advance. Prior to perpetual book inventories, the production control department had to count physically the quantity of material on hand and then formulate production schedules. Sometimes, there was a lapse of many days between the time that material had passed over the plant's receiving dock and before it was recorded on the book inventory. During this time, the material was actually in the plant's inventory, but production control people had no knowledge of it, unless they physically counted it.

In many cases now, as soon as material arrives at the receiving dock, the receipt of this material is immediately acknowledged through the electronic data processing system and the inventory is adjusted accordingly.

Warehousing operations have also benefited from the perpetual book inventory system. Many service parts warehouses now maintain a perpetual book inventory figure on every part in stock. As a result of this figure, the

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service parts warehouse can immediately determine if it has a sufficient quantity of a particular part available to complete a customer's order. Former service parts warehouse book inventory figures were usually after-the-fact by many days, thus could furnish no accurate information regarding the quantity of material in the plant at the present time.

In essence, electronic data processing controlled book inventory systems have replaced the type of book inventory systems in which a clerk physically posted each receipt and disbursement on a ledger form. As emphasized earlier, this posting sometimes occurred many days after the material had been consumed in production or sold from the warehouse. In reality, this after-the-fact book inventory figure was of little value for security. The electronic data processing method is much faster, more efficient, has proven considerably more accurate, and above all has provided better security as a result of the continual availability of a perpetual book inventory.

Very few electronic data processing systems were specifically designed with the improvement of security as their primary purpose. However, the security function and its responsibility in the realm of theft control has been greatly improved by such advancements.

When special physical inventories are requested, such as in the case of suspected theft, it is possible to determine exactly the quantity that should be in inventory as

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a result of the perpetual book inventory. The full effectiveness of such special physical inventories can be achieved only if the perpetual book inventory is available.

Security inventories also depend heavily upon the availability of perpetual book inventory figures for their effectiveness. Physical counts of security inventories are taken at various intervals. In order to determine whether or not a shortage exists, in a particular part, it is necessary that the perpetual book inventory figure be available.

Plants included in this study were at various stages of development in achieving the type of inventory control which presently appears to be the goal of most industrial locations, namely an up-to-the-minute perpetual book inventory figure for all parts in the plant, both productive and non-productive. A few plants were still physically posting all receipts and disbursements on ledger forms and were only beginning to initiate the use of electronic data processing equipment. Others were utilizing the equipment to the extent of making available book inventory figures on a monthly or weekly basis. Some had achieved the sophistication of providing a daily perpetual book inventory figure. One location was in the process of experimenting with an electronic data processing system which would present management with an up-to-the-minute perpetual inventory figure. Such a system would record each receipt and disbursement immediately

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Two aspects regarding the use of electronic data processing equipment and the improvement of inventory control procedures appeared quite evident throughout this study. These aspects are: 1) the seeming lack of cooperation in exchanging information concerning the use of electronic data processing equipment for the improvement of inventory controls among the divisions of the parent company and even among plants within the same division, and 2) the general lack of interest demonstrated by plant protection departments regarding the use of this equipment, improved inventory control methods and their implications for better security.

The various stages of application of electronic data processing equipment in regard to inventory controls was very obvious. The use of this equipment would, without a doubt, improve inventory control methods in all plants, but there seemed to be very little exchange of information in an effort to improve the quality of inventory controls for all divisions and plants.

Most plant protection departments did not seem to realize the implications for improving the security of plant inventories which would become a reality as a result of electronic data processing equipment usage. Worse than not realizing such implications, most plant protection departments expressed little interest in learning about such implications.

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As soon as the concepts inventory control and electronic data processing were mentioned, most plant protection personnel closed their minds to further discussion since they did not understand very much about these concepts. They rationalized their action by indicating that such areas were not a concern of theirs. Such an attitude is detrimental to the upgrading of the industrial security profession. It is imperative that any profession, industrial security included, makes every effort to learn about anything that may upgrade its level of performance.

This writer does not advocate that plant protection personnel need to become electronic data processing and inventory control experts. These are very technical areas and such a contention would be absurd. However, plant protection personnel should, at least, make an effort to understand and comprehend some of the basic principles of both the equipment and inventory control procedures in an effort to learn how they may be helpful in improving the plant protection department and its functions. Plant protection personnel should make an effort to meet with inventory control and computer personnel and exchange knowledge concerning how both groups may function together in an attempt to improve inventory controls from a security point of view.

Presently, most plant protection departments make little or no attempt to secure such information. This situation appears to be only another in the long list of similar

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situations in which plant protection personnel demonstrate very little receptivity to learn about new ideas and developments, many of which may improve the efficiency and effectiveness of the plant protection function.

V. CONCLUDING COMMENTS

Of the four security factors stated in Chapter I originally suspected as being most significant concerning dock security (the physical arrangement of the dock; personnel security programs; the physical handling of material and its corresponding document flow; and the availability of perpetual book inventory figures) the realm of inventory control and all its ramifications appears to be most progressive and demonstrates the greatest improvement.

Generally, inventory control procedures seem to be in a state of rapid transition. Perhaps the most important reason for such rapid change has been the extensive application of electronic data processing equipment to the materials management and production control functions. The primary reason commonly cited as the greatest impetus for improving inventory control procedures is to provide much needed assistance to materials management and production control personnel so that they can more accurately and efficiently plan production schedules. The ultimate goal in the application of electronic data processing equipment appears to be the achievement of up-to-the-minute perpetual

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book inventories on all parts in the plant, especially those parts utilized in the manufacturing process.

As a result of the effort extended by materials management and production control personnel, the plant protection department now has, at its disposal, a tool which may be very useful in the investigation of inventory shortages of all kinds, including those which may be due to theft from dock areas. This tool is the availability of perpetual book inventory figures. The security value of the perpetual book inventory seems to lie in its potential for quicker detection of inventory shortages so that investigations may be launched as soon as possible in an effort to determine the reason for such shortages. The availability of perpetual book inventory figures also renders special inventories and security inventories more effective from a security standpoint. The availability of the perpetual book inventory provides an immediate and accurate book inventory verification for special and security physical inventory counts.

A disheartening aspect of the general improvement in inventory methods and procedures is that this improvement has largely gone unnoticed by many plant protection personnel. This group has made little or no attempt to understand the implications which perpetual book inventory may have for inventory control procedures and ultimately for the improvement in dock security. It is hoped that all plant protection personnel will soon express an interest in learning

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about improved inventory control methods and the potential value they may have in theft investigations.

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CHAPTER IX

ROLE OF DOCK FOREMEN AND PLANT PROTECTION PATROLMEN

The role of dock foremen and plant protection patrolmen in controlling the activities of truck drivers while in dock areas was discussed in Chapter VI of this thesis. It is the opinion of this writer that plant protection patrolmen assigned to docks and dock foremen in charge of the operations on these docks have much broader responsibilities in improving the security of material as it is moved from the truck into the plant or moved from the plant into the truck. The purpose of this Chapter is to discuss these broader responsibilities and their relationship with dock security.

I. RESPONSIBILITIES OF DOCK FOREMEN

Aside from controlling the activities of truck drivers when on the dock, the foreman has other significant responsibilities in the maintenance of proper security on his dock. The dock foreman must continually audit the methods and procedures of handling material on his dock. Such an audit should be performed in an effort to verify that dock personnel are or are not adhering to the methods

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and procedures established for the performance of the particular operation. This responsibility is especially important since most plant auditing personnel and plant protection supervisors indicated that a large percentage of dock thefts and misappropriations of which they were aware occurred as a result of methods and procedures not being implemented as they were written.

Dock foremen also have a responsibility to supervise their men in such a manner that the dock functions in the most efficient method possible. Among other things, this responsibility involves controlling of excessive loafing, lengthy coffee breaks, and conversation with truck drivers. This, too, is a major responsibility for by the very nature of dock operation, inefficiency is a continual problem. The pace of dock operations is not controlled by mechanical supervision such as in the case of the assembly lines; therefore, the continual presence of human supervision is very necessary.

In order that the dock foreman be able to adequately discharge these and other related responsibilities, it is imperative that he be present among his men on the dock during most of the operating shift. His presence on the dock for such extended periods of time is not always possible. Rather than being a supervisor out on the dock among his men, the foreman has become an office paper shuffler who must attempt to supervise the activities of the dock from his office.

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Obviously, adequate supervision is not possible under such circumstances.

This condition occurs through no fault of the foremen for they categorically expressed distaste for the voluminous paper work which is now required of them. As a result of this condition many admitted that their docks were inadequately supervised. Inadequate supervision breeds circumvention of established procedures which may ultimately be contributory to theft and misappropriation of material. This problem is especially critical on large docks which process great volumes of material.

It is advocated by this writer that dock foremen be relieved of the clerical duties which have engulfed their positions and that they be restored to their original positions as supervisors of men. Perhaps, foremen on docks which are most seriously faced with this problem should be provided with assistance for processing the vast quantities of paper work they encounter. At some locations included in this study, it seems that the salary involved in the employment of a secretary or clerk may be well worth the additional cost of operation. At least the possibility of such assistance should be investigated by all plants faced with this problem. The employment of a secretary or clerk would release the foreman from his clerical duties and permit him to spend most of his time on the dock supervising the activities of his subordinates.

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The foreman's availability on the dock would permit him to perform other functions which may improve dock security. Such a function as was performed by foremen in one service parts warehouse included in this study is an example. This particular service parts warehouse had one dock each for shipping and receiving. Each dock was supervised by a foreman. As a security precaution, the shipping foreman was required to actually count ten to twelve receipts per week as they were unloaded at the receiving dock. Likewise, the receiving foreman was required to perform the same function on ten to twelve orders per week as they were loaded. These security checks were performed on a sample basis. This duty was a part of the written procedure for the position classification of foreman at this location.[1] The shipping foremen were required to count shipments as they were being loaded at one other warehouse included in this study. The foreman's job description required that they count one shipment per shift. Shipments to be counted were also chosen on a random basis. The majority of shipments from the warehouse were made to various assembly plants, both within and without the parent company.[2]

If the dock foremen were able to spend sufficient time on the dock, they would be able to perform similar

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[1] Interview with Warehouse Manager, Plant #2, June 2, 1965.

[2] Interview with Superintendent, Shipping and Packing, May 20, 1965.

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security functions as those discussed above and would also be in a more favorable position to audit continually the written procedures and methods regarding the proper operation of the dock. Continual supervision of this nature would, no doubt, improve the level of adherence to the written procedures and methods. Such improvement may ultimately have favorable implications for the improvement of dock security.

II. RESPONSIBILITIES OF PLANT PROTECTION PATROLMEN

Plant protection personnel were assigned to only a small percentage of the docks included in this study. Of the ninety-one docks which supplied the majority of data for this thesis, only fourteen employed full-time plant protection patrolmen and one had a plant protection patrolman on a part-time basis during dock operating hours. Of these fifteen docks which utilized plant protection personnel to some extent, nearly all involved the handling of relatively high-value and theft-attractive material. As a result of the limited plant protection manpower available for dock duty, most plants which utilized plant protection personnel on their docks did a commendable job in distributing their limited manpower among docks where the use of such personnel may have the greatest value.

In the opinion of the writer, it is at the point of manpower distribution that the commendable job terminates. This statement is made as a result of observing plant

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protection personnel in the performance of their duties at dock assignments. As a result of the means used in gathering data for this thesis it is felt that the activities observed were those that the patrolman would normally have performed in the course of his job.

After observing and evaluating the activities of patrolmen who were assigned to docks, it was concluded that they did very little. Occasionally they would warn a truck driver regarding his movement away from the dock area, but for the most part patrolmen either paced the dock, stood in a corner and gave the dock a scanning look, or carried on conversation with anyone willing to pass the time of day with them. Generally, their security effectiveness appeared to be minimal.

The following paragraph from John Davis' book, Industrial Plant Protection, nicely summarizes the general impression concerning the security value of plant protection personnel assigned to docks:

> A round was made of the guard posts and two guards were found assigned to the shipping docks. It was noted that one was occupying a chair in the corner of the dock and was intent upon whittling a piece of wood. The other guard was across the dock in an obscure spot, passing the time of day with a truck driver. An inquiry was made as to what duties they were assigned--the reply was that they generally kept their eye on the area.[1]

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[1]John R. Davis, Industrial Plant Protection (Springfield: Charles C.Thomas, 1957), p. 252.

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Aside from controlling the movement of truck drivers on the dock, what are the security responsibilities of plant protection patrolmen assigned to docks? A responsibility of primary importance is that of checking or actually counting shipments and receipts on a spot check basis. At only four of the fifteen docks which utilized plant protection personnel were patrolmen required by written procedure to check any shipments or receipts. Patrolmen assigned at the remaining eleven dock facilities were required to give no more than a cursory glance to material which was being loaded or unloaded. In essence, the patrolman was assigned to the dock to "generally keep an eye on things." There was no procedure written regarding specific responsibilities of the plant protection patrolman while on the dock. In essence, all that was required of him is that he be there.

Nearly all plant-level plant protection personnel who were interviewed expressed the feeling that the mere presence of a uniformed plant protection patrolman on the dock was a very significant force in curbing dock thefts. These persons felt that there was little security value in having the patrolman check shipments or receipts. Most plant protection supervisors were advocates of the philosophy that the mere presence of a plant protection patrolman on the dock created a psychological effect which discouraged theft or misappropriation from the dock.

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Although no evidence could be found to support or discredit the contention that the mere presence of a patrolman on a dock had a phychological effect which discouraged theft, it is the opinion of this writer that the psychological effect has limited security value. It is believed that the psychological effect especially has limitations in dealing with those offenders and potential offenders who have devised well planned methods to bilk the plant of materials from its docks. Such well planned methods of theft may be those in which collusive relationships between truck drivers and dock personnel have been established. Generally persons who have gone to such efforts to study existing dock procedures and discover their weaknesses from a security standpoint are intent upon stealing and a plant protection patrolman who is merely present on the dock will not discourage their efforts. It might be said that such offenders are somewhat professionally oriented as opposed to the occasional, amateurish, or impulsive thief, who usually works individually. It is precisely with the former type of offenders that most major dock thefts originate. Such well organized theft attempts, which commonly involve collusive efforts with truck drivers, may occur for extended lengths of time in the immediate presence of the patrolman who is assigned to the dock with instructions to "generally keep an eye on the docks." Since it is primarily against thefts of this type that all security measures must protect, more

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security than the mere presence of a patrolman on the dock is necessary.

Perhaps the only type of offenders against which the mere presence of a patrolman on the dock may be effective is the occasional, amateurish, or impulsive thief. Thefts of this nature usually involve only a single individual as opposed to those well planned thefts commonly involving collusive effort. Such thefts usually occur only when undue temptation is placed before the individual.

A plant protection chief at a plant in which management had recently abandoned the use of patrolmen on all docks was interviewed concerning the security value of having patrolmen assigned to dock areas. Aside from the obviously favorable psychological effect created by patrolmen who are assigned to dock security duty, this plant protection chief emphasized that plant protection personnel should physically count as many shipments as possible as they are being loaded. He stressed that ideally all shipments leaving the plant should be counted by plant protection patrolmen. In addition to the security value involved in these counts, this chief also justified this extensive counting of material on the grounds that such counts discovered a substantial number of errors in shipping. As a result of the counts performed by plant protection patrolmen, these errors were discovered before shipments left the plant, thus reducing the

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cost involved in the correction of the shipping mistakes.[1]

It is the opinion of this writer that any count of shipments by the plant protection department should be on a random sample basis and primarily designed for improving dock security. If excessive numbers of mistakes in shipping are being made in the present shipping process, this problem should be attacked from the standpoint of better training and supervision of shipping personnel. If plant protection patrolmen are assigned to dock areas, it should not be their duty to verify the correctness of all shipments that leave the dock. If plant protection dock security duties degenerate to such a point as they apparently had at this plant, the patrolman ceases to serve an effective security purpose, but becomes merely a material checker.

In order to be most effective, patrolmen assigned to docks must be required to do more than merely be physically present on the dock. Patrolmen assigned to dock duty must be given specific duties to perform rather than only being instructed to "generally keep an eye on the dock." If not assigned certain functions, patrolmen soon become bored with dock duty and become very ineffective from a security viewpoint. Such conditions were frequently noted while performing this study.

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[1]Interview with Chief, Plant Protection, Plant #14, May 27, 1965.

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One chief of plant protection stated that dock security duty is considered the "easy way out" by most patrolmen. Dock assignments appeared to be quite popular since patrolmen knew very little effort would be required of them. This chief emphasized that this attitude was largely due to plant protection chiefs not giving the patrolman specific functions to perform when assigned to dock duty.

The present attitude of patrolmen concerning dock security duty will prevail until patrolmen assigned to dock duty are given particular duties to perform. In order to determine whether or not these duties are carried out effectively, the performance of these duties must be properly supervised by the shift sergeant.[1]

Patrolmen should be required to perform a designated number of security counts during each operating shift. Such counts would consist only of counting the number of cartons, boxes, skids, or pallets of material which are loaded or unloaded. All counts must be performed independently of counts performed by shipping or receiving checkers. After all the cargo has been loaded or unloaded, the patrolman's count should be verified with the checkers count in the presence of the dock foreman. Any discrepancy should be immediately investigated.

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[1]Interview with Chief, Plant Protection, Plant #3, April 27, 1965.

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It is very important that such counts by patrolmen be on a random sample basis and be limited in number. However, it is necessary that such counts be performed in such a manner that at least one truck from each common carrier which services the dock be subjected to counting by a patrolman during a designated period of time.

The performance of these counts has a disadvantage in that patrolmen may have a tendency to focus too much attention on this function and disregard other security responsibilities on the dock area. Therefore, it is very important that the frequency of counts be on a periodic basis only. Each plant must study and evaluate its individual needs before determining the frequency of counts felt necessary.

When patrolmen are assigned to docks, all breaking, application and locking of seals should be the duty of this individual. The patrolman should be responsible for maintaining adequate written records of all seals issued from the dock and a record of all seals on inbound vehicles. Dock patrolmen also have a responsibility in overseeing that the immediate dock area is kept clear of all material, dock housekeeping is maintained in a satisfactory condition, and other functions which may have implications for improved dock security.

Regardless of the specific duties assigned to plant protection patrolmen who are posted on dock security duty,

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it is imperative that they be properly trained in the performance of such duties. An example of a complete lack of training was observed at one service parts warehouse included in this study. As a result of recent thefts from the dock at this particular warehouse, plant management had decided to assign a patrolman to its only dock facility; this dock handled both the shipping and receiving function.

While casually conversing with the patrolman assigned to dock security duty concerning his responsibilities on the dock, the patrolman conveyed the impression that he was assigned to the dock to check shipments and receipts of material. After observing this patrolman for some time, it was very obvious that he did not know how to perform a security check. This patrolman was unfamiliar with the documents used in the shipping and receiving procedure and had no idea of their meaning or of the flow of such documents. His unfamiliarity with dock proceedings was so obvious that common carrier truck drivers and dock personnel were noted chuckling as he attempted to check particular shipments and receipts.[1]

This miserable performance quite obviously was a result of improper training. The blame for such an inadequate performance of duty should not be placed on the patrolman, but upon his supervisors for their apparent complete neglect

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[1]Interview with patrolman and observation at Plant #7, May 4, 1965.

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Patrolmen assigned to dock areas must be subject to constant rotation which follows no particular pattern. It is important that dock assignments follow no particular rotational pattern so that potential collusive efforts among dock employees, truck drivers and patrolmen may be counteracted.

It is also proposed that an additional security measure be performed by plant protection personnel, on a sample basis, as trucks and trailers leave the vehicular exit gate of the plant. Although procedures utilized at truck exit gates are not included within the scope of this thesis, mention of this security aspect is, since it would not be a part of the normal procedure to which each vehicle is subjected as it leaves the premises.

It is proposed that a complete and thorough checking of the cargo of trucks on a sample basis be implemented at all vehicular exit gates. Because of the thoroughness and comprehensiveness proposed in such a check, it may be feasible to perform this type of security measure only a few times each month.

By virtue of the thoroughness required in such a check, a patrolman other than the patrolman assigned to the vehicular exit gate would be needed to perform the check. This security check may be performed by a patrolman who is

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free of any specific assignment at the particular time. If such a check cannot be performed by merely opening the gates and climbing into the truck, the truck should be requested to return to the shipping dock, and if necessary, the entire cargo unloaded and counted by the patrolman. A detailed record of the cargo count should be made by quantity and parts if possible.

A security check of this type is especially necessary in plants which do not perform random security checks on the shipping dock, either by plant protection personnel or dock supervision. Special effort should be made to have personnel and time available for these types of checks at such locations.

As in the case of plants which perform dock security checks, it is felt by the writer that the mere knowledge that a plant does perform such thorough checks on a sample basis does have a psychological value in discouraging the potential thief, whether he be amateur or professionally oriented.

III. CONCLUDING COMMENTS

Dock supervision and plant protection personnel assigned to docks have definite roles to play in improving the security of the shipping and receiving procedure. Presently, much of the security potentially available in their roles is not being realized. This unrealized security potential is

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largely attributable to non-supervisory functions which have become a part of the foreman's informal job description and in many cases, the total lack of an adequate job description for plant protection personnel who are assigned to dock security duty.

Each plant should re-evaluate the security effectiveness of their dock foremen and plant protection personnel in light of presently acceptable job descriptions. As a result of this re-evaluation, modification of present job descriptions and acceptable standards of performance should be considered. Such modifications are felt by the writer to be necessary in an effort to improve the level of security on docks, as well as to improve the efficiency of overall dock operations.

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CHAPTER X

SHIPPING AND RECEIVING PROCEDURES

Shipping and receiving procedures exist primarily to maintain order and continuity in the shipping and receiving functions. These procedures are written statements of methods by which plant management requires that all movements of material be processed. As a result of written procedures, plants hope that all material movements will be handled in a uniform and efficient manner.

Shipping and receiving procedures vary considerably from plant to plant. Of the fifteen industrial locations included in this study, no two were found to have identical shipping and receiving procedures. Perhaps the only influence that assists in maintaining any uniformity among the various procedures is the portion of the company basic policy and procedural guide regarding shipping and receiving. This material is prepared by parent company accounting personnel.[1]

Despite the established basic procedures in this publication, company management recognizes that in order to

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[1]Company Accounting Department, "Company Practices and Procedures," Company Central Office. This publication consists of various volumes which are subject to continued revision. (mimeographed.)

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operate most effectively, shipping and receiving procedures must be adapted to the operations of particular plants. No two plants operate alike; therefore, there is always variation in procedures, even within the plants of the same division of the parent company.

Despite such variations in procedures, there are basic common elements which can be identified in all procedures regardless of the many unique aspects of each.

It is the purpose of this Chapter to point out and discuss the most basic elements of shipping and receiving procedures. Emphasis is especially placed upon those elements which are considered to have a significant relationship with the securing of materials during the shipping and receiving process.

I. SHIPPING PROCEDURES

The shipping as opposed to the receiving function is usually thought of as being the one which offers the greatest potential for the unauthorized removal of material from the plant. Collusion between truck drivers and dock personnel may result in the over-shipping of material, i.e., the loading of unauthorized material on a truck for the purpose of theft. If steps are not taken to prevent such overshipping at the dock, chances are quite good that the over-shipments will not be detected, not even at the plant exit gate unless the over-shipment is very obvious.

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One of the most effective means of preventing the unauthorized removal of property during the shipping process is the establishment of a method of procedure. Although most methods and procedures were not originally formulated for security purposes, by their very nature they have contributed much to improve the security of materials.

Shipping procedures varied widely among the plants included in this study. Much of the great variation in methods and procedures can be attributed to the many different types of shipments which may originate from any given plant, and also the various destinations of such shipments. For example, it is not uncommon for a single plant to ship finished products to private businesses; ship various products to local, state, and federal governmental agencies; ship material to foreign countries; ship service parts to warehousing locations around the world or directly to customers for replacement purposes; and to ship various manufactured parts to final assembly points. This material may be shipped to both allied and non-allied destinations. Such shipments are transported by both common carrier and company owned and operated trucks. The type of shipment control document used and the flow of the various copies of these documents vary somewhat according to the various types of shipments.

Despite the procedural variations among various types of shipments which may originate at a given dock area, all

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involve certain basic procedures and all are faced with many of the same security problems. This section makes no attempt to deal with the particulars of the various shipping procedures. An endeavor of this magnitude would be wholly out of order in a thesis of this nature. The particulars of such procedures represent more than sufficient material upon which to construct an entire thesis. Therefore, this section of Chapter X only attempts to present a general discussion of shipping procedures with emphasis on those procedural aspects which have security significance.

Generally, two basic shipping procedures exist, namely those involving production parts and those to fulfill specific customer service orders.

As a rule production orders are most commonly shipments from manufacturing plants to various final assembly points. These shipments usually consist of great quantities of the relatively few parts that the shipping plant manufactures and which are used in assembling the finished product. In most instances, the assembly points may be either in the same division as the manufacturing plant or plants of an allied division of the parent company. In a few instances, such assembly points are also non-allied plants. Usually the final assembly plant schedules the production of an estimated number of finished units for a specific time period. Based upon this production estimate, the assembly plant creates an open purchase order with each manufacturing

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plant supplying material for its final assembly process. Normally, such purchase orders request that the manufacturing plant ship a particular quantity of each part at intervals designated by the assembly plant. The manufacturing plant is notified of any variations in the estimated production schedules between shipping intervals and is advised to adjust shipments accordingly.

Shipments of a similar nature may also be made in replenishing the inventory of service parts plants. Such shipments are usually made directly from parts manufacturing plants to service parts plants on a periodic basis in order that its warehouse inventory be maintained at a particular level.

In contrast to the procedure involving shipments of production parts to final assembly plants and to service plants is the procedure resulting from a specific customer order desiring particular service parts. These shipments commonly originate at service parts plants. These orders may consist of only one of a particular part or may consist of large quantities of a variety of different parts. As contrasted to shipments from manufacturing plants, shipments from service parts plants are made almost exclusively to non-allied destinations. Many shipments of this nature are made to dealers and directly to consumers.

Regardless of which type of shipping procedure to which reference is made, nearly all shipments originate at a

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dock facility in some type of warehousing operation. In service parts plants, the warehouse may consist of the entire structure, for usually little or no manufacturing or assembling is performed at such locations. In most manufacturing plants, the warehousing aspect of the operation is quite small. Normally only enough warehouse space for two or three days inventory of manufactured parts is provided. Therefore, inventories turn over very rapidly in most manufacturing plants. In fact, some manufacturing plants were noted which were unable to maintain any inventory on particular parts. In such instances, service parts plants and final assembly plants absorbed these parts as quickly as they were produced.

Generally, much tighter security exists regarding service parts shipments resulting from specific orders as contrasted to production shipments to final assembly and service parts plants. Shipping and security personnel indicated that more extensive document and physical control is exercised over these types of shipments because of the very nature of the shipments. Nearly all shipments of this type go to non-allied destinations. Most shipments form only partial loads rather than complete loads. Generally trailers filled with these types of orders contain material for many destinations. These trailers must be taken to trucking terminals and their cargos unloaded and distributed among over-the-road trailers which are going in the general

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direction of the destination of such material. Generally more adequate document and physical control is felt necessary for the security of this material since its exposure to theft is relatively great.

The processing of shipments from a service parts plant initiates as a result of specific customer order. Generally, the shipping procedure consists of the creation of an authorization to ship, the picking of the material, packing-checking stage, the consolidation of the shipment, and checking the shipment onto a trailer. This represents a very general summary of the shipping procedure. The following pages attempt to explain this basic outline and relate it to the security of such shipments.

Prior to the shipment's being made, some sort of order to ship must be received by the service parts plant. Such orders are normally received by the shipping plant's order department. The order department is a functional department separate from the shipping department. The order department creates authorizations to ship from the shipping orders. All authorizations to ship must originate in the order department. All authorizations to ship are pre-numbered and all must be accounted for by the service parts plant.

Usually some record of the shipping authorization remains in the order department. In many cases it is the original copy of the document. In other cases, electronic data processing equipment punches a card for every order

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received. Quantities, parts, the source of the order, and other pertinent information are indicated on the card. This card becomes a record of the shipping authorization and is filed.

In most instances order department personnel and shipping personnel never come in contact with each other since orders are sent to the warehousing area by means of a pneumatic tube or mail boy.

It is precisely at this point that a major security aspect enters the shipping procedure. The functional separation of duties performed by the order and shipping departments is necessary for the maintenance of proper security. If these two functions were performed by the same individuals, the potential for misappropriation would be significantly increased. For example, shipments might be authorized to dummy companies and the documents manipulated in such a manner that no record of such an authorization to ship would be maintained for invoicing and billing purposes.

When the shipping authorization reaches the warehousing area, the foreman usually assigns a stock picker to pick the order from the warehouse stock. Sometimes an entire order is assigned to a single stock picker; other times more than one stock picker may be involved in picking a given order. Regardless of the number of pickers who are involved, each is held accountable for that part of the order assigned to him. He must place his signature on that

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portion of the order which he picked. After the order has been picked and placed upon a picking cart of some type, it is moved into the packing-checking area.

At most service parts plants included in this study, packing-checking personnel are functionally separate from stock picking personnel. At many plants these two groups are even physically separated.

Orders are usually assigned for packing-checking in the chronological sequence in which their picking was completed. The packing-checking foreman usually supervises this assignment. As a result of assigning the packer-checker personnel by this method, the packer-checker has no knowledge of who picked the order which is assigned to him. The packer-checker must also acknowledge that he packed a particular order by placing his signature on his work.

In addition to packing the material, the packer-checker usually has the responsibility of verifying that the correct parts and quantities have been picked. The packer-checker's verification acts as a check on the work of the picker and reduces the percentage of incorrect shipments. Some plants also place the responsibility on the packer-checker for determining the least expensive freight classification for easier shipment. A packer-checker who is knowledgeable in the realm of freight classification can save a service parts plant considerable money by channeling shipments into proper freight classifications.

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The security aspect at this point represents one which is only a by-product of the original purpose for separating functionally the picking and packing operations. Originally, such separation was initiated for the detection of mistakes that stock pickers had made when picking the order. It was found that many mistakes were being made in the picking and packing operation when one person was responsible for both functions. These mistakes resulted in unfavorable customer relations in many cases. Separate picking and packing operations were instituted. At this time, picker and packer-checker job classifications were formulated. As a result, security of material was improved, for now any theft required the collusive efforts of two persons.

In order to determine that such functional separation is actually maintained, the auditing section of the plant's accounting department continually audits this operation. Auditors note the signatures of the picker and packer-checker on orders which have been processed. Auditors also attempt to note picker and packer-checker combinations which appear quite frequently.

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In effect, the above related procedure is a 100% check, both for security and mistakes. However, this is a check involving only hourly-rated employees. With the thought of saving manpower, money, and time, a procedure to reduce the 100% check by hourly-rated personnel to 10% random sample check by foremen and combine the picking and packing-checking classifications into a single classification of picker-packer, was instituted at a few service parts plants of one division included in this study. Under this procedure, the same hourly-rated person would both pick and pack an order. The 10% check by the foreman may be at the time the picker-packer was picking the order or at the time it had already been packed. Theoretically, 10% of the work of each picker-packer was spot checked rather than 10% of all shipments. This check, too, would have the two-fold purpose of auditing the picker-packer's work for mistakes in part and quantity and also for checking security.

Initially, top ranking company plant protection personnel were quite apprehensive regarding adequacy of security involved in this procedure, but consented to permit the system to exist on a trial basis. The procedure did save considerable money, but also resulted in an increase in the frequency of customer complaints involving wrong parts and quantities. Even including the cost of rectifying such mistakes, the procedure was still saving money for the plant.

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However, top management of the division involved eventually decided that the intangible cost of unfavorable customer relations was greater than the direct monetary savings of the picker-packer system. As a result, plants in this division are now performing 100% checks as before with the functional separation of the picker and packer-checker. From a security point of view, no conclusions could be drawn regarding the effectiveness of the picker-packer procedure, for it was not in effect a sufficient period of time for adequate evaluations. No known dock theft incidents occurred during the time the procedure was operational.[1]

After orders are picked and packed, they are normally placed in an area to be consolidated for shipment. Such an area is commonly referred to as a marshalling or staging area.

Once a group of shipments are consolidated for loading on a particular trailer, they are loaded by a forklift truck driver and a shipping checker. The shipping checker usually has a listing by part and quantity of the material which should be placed into the trailer. As the forklift driver loads the trailer, the shipping checker checks off the number of cartons and/or boxes only. The exact quantity

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[1]Interview with Assistant National Warehouse Manager in Charge of Facilities, "X" Division, Company Central Office and interview with high ranking Company Plant Protection Official (job classification purposely withheld for sake of anonymity), Company Central Office, June 15, 1965.

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of material has already been packed in the box or carton and therefore cannot be checked unless the box or carton is unpacked. As a result the shipping checker count is merely a box or carton count. In essence, this point in the shipping procedure serves as another independent check to verify that the customer is receiving the correct number of boxes and/or cartons. This function is usually performed by a different individual than the picking or packing-checking function.

The shipping checker's function represents another security point in the shipping procedure. Granted, in most cases, he is not able to detect over-shipping or under-shipping within the box or carton he is checking, but he is able to prevent unauthorized boxes or cartons from being placed upon trailers.

Once the correct quantity of material has been loaded on the trailer, the shipping checker and the forklift truck driver place their signatures on the check sheet. The shipping checker then authorizes a bill of lading to be drawn up for the total amount of material. A shipping clerk in the dock shipping office usually prepares the bill of lading. The bill of lading indicates the quantity of material supposedly on the trailer as it leaves the dock. The truck driver's signature, acknowledging that he did receive the indicated quantity of property, along with the signature of the shipping foreman or shipping checker is required on the bill of lading. There are many copies of the bill of lading,

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two of which are retained by the truck driver. One copy serves as a gate pass and the other is retained in possession of the driver.

When truck drivers sign a bill of lading, they are acknowledging that they did receive the exact quantity indicated on the bill of lading. The driver is, in effect, legally signing as an agent of his trucking company. If, at the trailer's destination, a certain quantity of the material is missing, the trucking company is liable for the loss. Therefore, rather than merely taking the word of the shipping checker, many truck drivers were seen checking the material as it was being loaded to verify that they received exactly the quantity for which they signed. Many drivers were rather insistent upon checking their loads as they were being loaded for trucking companies have been known to discipline drivers who blindly sign for their loads. The count performed by the truck driver also complements the count of the shipping checker.

As a further security consideration, the auditing section of the accounting department audits the combinations of shipping checkers and forklift truck drivers who work as a team. The auditing section does not desire to have the same combinations working together continually. Auditing places a responsibility upon the shipping foreman to rotate constantly the combinations of forklift truck drivers and shipping checkers who work together.

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In one plant the auditing section is also very insistent upon the rotation of shipping checkers so that a particular checker does not always check the material on trailers of the same common carrier. At this plant, many common carriers serve the service parts plant dock; therefore, this type of rotation is practical. The supervision of such rotation is the responsibility of the shipping foreman. Such rotations are on a periodic unannounced basis. Prevention of collusive efforts is the primary purpose of such rotation of shipping checker personnel.[1]

By effectively auditing the entire shipping procedure, the auditing section hopes to detect and/or prevent efforts of collusion of any kind.

The second general shipping procedure observed at plants included in this study involved shipments of production material from manufacturing plants to final assembly plants and to service parts plants. When contrasted with the level of security available in the procedure related above, this procedure represents one of significantly lesser control. Shipping control documents paralleling the movement of material are somewhat less sophisticated than those which paralleled the movement of material in shipments from service parts plants to the predominately non-allied destinations spoken of above. The great majority of these type of

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[1]Interview with Plant Auditor, Plant #5, June 16, 1965.

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shipments are made to plants within the same division or to plants in allied divisions of the parent company.

Despite the obvious lesser security in this procedure, shipping and plant protection personnel at plants in which this general type of shipping procedure is common, expressed a feeling that the lesser control was adequate. They cited many reasons for this feeling. Rather than having a trailer leaving the shipping dock with a variety of shipments going to many customers, most trailers involved in this type of shipment are fully loaded and contain a large quantity of only one part or a very few parts and are moving this material to only one "customer," an assembly plant or a service parts plant. Many times, such trailers are loaded entirely with one part, sealed, and taken directly to a single location. This material is usually transported in the form of a standard package which renders it considerably easier to handle and to account for. Standard packaging means that a specific amount of material is in each carton or package. In many instances one common carrier may always transport all shipments of a certain type of material to a given assembly point or service parts plant, thereby pinpointing responsibility for the shipment. In general, the exposure of such shipments to theft is significantly less than in the case of many small orders being shipped in a trailer from a service parts plant.

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Prior to shipping any material to an assembly point or a service parts plant, the manufacturing plant must receive a purchase order of some nature. Usually such an order is in the form of a request for an indefinite quantity of material over a specific length of time. According to production schedules and service parts plant needs, the receiving plant requests shipments of specific quantities of material at desired intervals during the period of time the purchase order remains valid. Therefore, rather than ship as a result of a purchase order requesting a specific quantity of material, the manufacturing plant ships the desired quantity of material for an interval of time until a sufficient quantity has been shipped to meet the demand.

At each shipping interval (whether it be daily, weekly, or every two weeks) the shipping foreman usually provides a forklift truck driver with a work sheet of the parts and the quantities of each needed for the shipment. The forklift truck driver proceeds into the manufacturing plant warehousing area and brings the designated amount of the shipment to the shipping consolidation area.

Usually this material is already packaged in standard sized cartons, boxes, or racks, so there is no need to do any further packing of the shipments. In essence, the forklift truck driver is acting as a picker for he is picking the designated number of cartons, boxes or racks necessary to complete the interval shipping requirements.

Up to this point, the only assurance that the correct quantity and parts of material are in the consolidation area is the reported count of the forklift driver who "picked" the material. The fundamental functional separation of the picker and packer-checker is conspicuously lacking in this procedure. The functional separation of these duties is one of the major security check points in the service parts plant's shipping procedure, but is totally lacking in most shipments of this type. The absence of such functional separation has the effect of weakening the security of this type of shipping procedure.

Theoretically, the shipping procedure from this point through the shipping checker's function and the loading operation is the same as that outlined in the discussion of a service parts shipment. In reality, however, wide variations were noted in the application of this phase of the shipping procedure. Sometimes the theoretical procedure was closely followed; other times it was almost completely disregarded, especially in situations involving shipments within the same division of the parent company.

In an effort to illustrate such variation, a few examples are offered. In one plant shipments of high value to allied destinations were verified for correct quantity and part by a checker as the material was being consolidated for shipping. As the material was loaded, the shipping checker also independently counted the material. In this instance,

the truck drivers were also counting the material; therefore, three independent verifications existed.

Most other situations observed provided far less security. For example, many instances were observed in which the shipping checker's count was the only count on the material being loaded aside from the forklift truck driver who assisted.

A few instances were also noted in which the forklift truck driver "picked" the material and placed it directly on the trailer. He completely by-passed the consolidation phase. Such a procedure was most common in shipments within the same division. In such cases the forklift truck driver had the work sheet and he also served as shipping checker. The bill of lading was prepared from information indicated on the work sheet by the forklift truck driver. There were considerably more shipping errors noted in instances in which a forklift truck driver "picked" the material and placed it directly on a trailer. The higher percentage of error was attributed to the fact that there was no verification of the forklift truck driver's count.[1]

The writer feels that instances such as the last one described above represent far too lax security regardless of the type of material being shipped or its destination. Such a procedure provides fertile ground in which the seeds of

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[1]Interview with Shipping Foreman, Plant #15, May 26, 1965.

collusion may sprout. No material which leaves any shipping dock should be under the control of only one man, regardless of who he may be. A two-check system seems to be the minimun acceptable standard of security which can be tolerated.

The plant auditing section also seemed to take less interest in auditing shipping procedures involving movement of materials to allied destinations than they did in auditing the shipping procedure of material movements to non-allied destinations. This factor alone may be significantly contributory to the breakdown in certain written procedures.

Aside from the lax security involved in some procedures governing shipping between allied plants, a major problem regarding the security of the shipping function in general is the physical location of the marshalling or staging area in which shipments are consolidated for shipping. This problem appeared to some degree at all shipping docks visited by the writer. Consolidation of material is commonly done in an area designated as a staging or marshalling area. The security problem involves the location of the staging or marshalling area. At most plants, the staging area was a part of the immediate dock shipping area, sometimes adjacent to the open rear gates of trailers which were parked in various dock wells. As a result of locating staging areas so near the major activity on the dock, truck drivers were sometimes seen wandering through this material while they were waiting for their cargoes to be loaded. In general, staging

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or marshalling areas which are physically located in the manner described above provide conditions whereby theft potential is greatly increased.

The length of exposure to theft of material is normally but a few minutes. Despite the relatively short period of time that this material is in the consolidation area prior to loading, the potential for unauthorized removal of such cargo must be recognized. In essence, industry is presenting an invitation for misappropriation. Norman Jaspan's emphasis on "preventive management," which the writer feels merits far more consideration than it is now receiving, does not seem to have influenced the thinking of persons who proposed that the staging areas be located in such a place.[1]

The problem regarding the location of the staging or marshalling area is one which does not present an easy solution. Various security and materials department personnel interviewed cited a lack of space as the primary reason for marshalling or staging areas being located on the dock area. They also recognized the adverse security implications involved in the present location. After observing operations on many shipping docks, it was quite obvious that the only area with sufficient space to serve as a shipment consolidation area was on the dock itself, so the problem of

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[1]Norman Jaspan, "Stopping Employee Theft Before it Starts," Management Review, XLIX (January, 1960), pp. 51-52.

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inadequate dock space discussed previously raises its ugly head once again.

In the construction of new shipping docks and the remodeling of old facilities, consideration should be given to the location of the marshalling or staging area. The proper location of the consolidation area has implications for improving the security of shipping procedures.

Ideally, adequate space should be provided so that all shipments could be consolidated in an area away from the actual shipping dock. No truck drivers should be permitted in the staging or marshalling area at any time. When the shipment is completed and consolidated a forklift truck driver should move the material from the consolidation point directly onto the truck. A shipping checker should check the material as it is placed on the truck. If such a proposal could be achieved, there should be no material on the immediate shipping dock area at any time, thereby reducing the theft potential at shipping docks.

II. RECEIVING PROCEDURES

As in the case of shipping procedures, there are also many different methods utilized in receiving material. Regardless of the receiving procedure utilized, prior to having any material received at a plant, a purchase order must have been issued by the purchasing department of the receiving plant. The purchase order conveys to the supplier

that the plant desires to purchase a certain quantity of a specific type of material and authorizes the supplier to ship the material. In the case of plants included in this study, the supplier may be either an allied or a non-allied source.

In most cases, this material arrived at the purchasing plant by common carrier; however, in some instances, the material was transported via the supplier's truck fleet.

The vehicle transporting the material to the plant is usually signed into the plant at a plant vehicular entrance. The truck then proceeds to the receiving dock. Once at the dock, the common carrier driver presents his freight bill to a dock foreman, material checker, receiving clerk or other similarly classified personnel on the dock. The freight bill usually includes information concerning the name of the common carrier trucking company; the quantity of material in the shipment by box, carton, or pallet count and the total weight; the number of the seal if the trailer is sealed; indication of the consignee and the supplier (shipper); date; trailer number in which the shipment is transported; and supplier's shipping document number(s). Freight bills are pre-numbered and are prepared by the trucking company from information related on the supplier's shipping documents such as the bill of lading.

Most trailers arriving at receiving docks are less than truck load lots (LTL); therefore these trailers generally are not sealed. Also, many trailers which are

full load lots are not sealed. However, when a sealed trailer does arrive at the receiving dock, usually the first thing that is done is to verify the number indicated on the seal with the seal number indicated on the freight bill. These numbers should be in agreement. At the same time the seal is inspected in an effort to determine whether or not it has been subjected to tampering. This procedure is generally performed by the receiving dock foreman, the material checker, or receiving clerk. Other pertinent information indicated on the freight bill is also verified at this time.

It is generally recognized that the security problem involved in LTL receipts is greater than in the case of full truck load lots. LTL receipts create the greatest security problem, for part of the load will leave the plant premises designated as material not belonging to the plant. Opportunity exists for the concealing of material that does belong to the plant in the partial load as it leaves the plant. Only a thorough check of the outgoing material will reveal that plant material has not been taken from the premises.

At most plants, either the foreman, the receiving clerk, or the material checker is also responsible for verifying that the plant did, in fact, receive the exact quantity of material indicated on the freight bill.

It is at this point that the major security problem exists in the receiving operation. It is the concern of the

receiving plant that it receives the exact quantity of material indicated upon the freight bill, no more and no less. As one can readily discern it is of utmost importance that the receiving plant can depend upon the integrity of the personnel involved in this aspect of the receiving procedure. The tremendous responsibility placed upon material checkers or receiving clerks at this point in the receiving procedure is an example of why employees occupying such positions should be subject to more thorough personnel security investigation than are now being performed.

If a truck driver and a dock employee become involved in a collusive effort at this point, the plant may be bilked of much material. For example, the receiving checker may simply acknowledge that he did receive a particular amount of material which was not really received at all. The material was acknowledged as received, but really never was unloaded from the trailer and left the plant with other portions of the load which was not plant material. Perhaps the first indication of such thefts would be an inventory shortage of the particular part.

Any discrepancy in the form of an overage or shortage which is noted at the time of unloading the material is verified immediately with the truck driver. The truck driver acknowledges the existence of such a discrepancy by noting the amount of the discrepancy and signing his name on both his and the consignee's copy of the freight bill. It is

then between the consignee or the supplier and the trucking company to determine the source of the discrepancy and to reconcile the discrepancy to the satisfaction of the parties involved. If a shortage is noted and the trucking company cannot determine where the material is located, the trucking company usually makes restitution for the financial loss suffered by the plant. The claims department of the trucking company is the source of such adjustments.

The employees who check this material into the plant also have a responsibility to inspect the boxes, cartons, or pallets for damage incurred during transit. The trucking company is immediately notified of any such damages and adjustments are requested.

If the entire shipment is of the proper quantity and is in acceptable condition, a plant representative signs both the truck driver's copy of the freight bill and the consignee's copy. For all practical purposes, this signature releases the trucking company of any further responsibilities for the material and acknowledges that the plant did receive the proper number of boxes, cartons, pallets, or skids.

Up to this point, most receiving procedures are quite similar; however, from this point on there is considerable variation noted in procedures.

Now that the material has theoretically been removed from the trailer and has been acknowledged as received by

the plant, another critical security problem exists in the physical handling of the material.

In order to combat the potential problem of preventing a truck driver (either alone or in collusion with a dock employee) from returning to a trailer material which has already been unloaded and officially checked into the plant, every effort must be made to immediately move all material which has been unloaded as far away from the immediate dock area as possible. Material which is physically placed in remote areas diminishes the temptation of the truck driver and/or dock employee from attempting this type of theft. Such a procedure may be interpreted as a manifestation of Norman Jaspan's theory of "preventive management." Most docks included in this study exhibited failings in this realm. Material of all types could be seen stacked up all about the dock area, much of it in the immediate area of the open trailer gates, practically inviting theft. This point is also a manifestation of why shipping and receiving operations should always be physically separated. If this was only a receiving dock, a person who was loading material would appear somewhat suspicious and may be more easily detected.

Of all the material received, only two types appeared to be handled with any degree of security consciousness once they were received at the dock. These types of material were non-productive items and parts which were on

security listings for special handling. This type of material was only carton counted as it was taken off the truck. It was generally taken to a crib area either on the dock or in other parts of the plant for the purpose of counting the contents contained in the box or carton. Parts which were on security listings were usually taken to specially designed security cribs and counted at that point.

At most plants, the vast majority of all receipts involved production material. Although it is recognized that for practical reasons this tremendous volume of productive material, much of which is not attractive for theft, cannot be processed with such security consciousness as nonproductive material and security listing parts, it is felt that the industrial plants included in this study could handle this material in a more secure manner than is presently being done. Most plants handled this material with little concern for guarding it from theft. They portrayed the complacent attitude that "nobody wants this stuff anyway."

Despite the shortcomings of most plants, a few did attempt to protect this type of material from theft. Some receiving docks were noted where dock personnel immediately transferred all production material to what was designated as a material counting area. These areas were removed from the immediate dock area, although they were not usually physically separated by any type of barrier. Truck drivers

were supposedly not permitted in this area, although many were seen in such areas.

A few plants had material counting areas which were physically separated by a wall. Truck drivers were not permitted behind this wall. There were a number of openings in this wall from which roller conveyors protruded. Material was taken from the trailers by forklift trucks and placed upon these conveyors. The material then rolled into the material counting area for counting and receiving inspection.

At this point the contents of the boxes, cartons, and pallets were ready to be counted. This was one in the material counting area of the dock, the dock crib, or in the security crib. The material had passed the point of greatest exposure to theft by trucks and truck drivers when it reached this portion of the receiving procedure.

Even though the plant has verified that it has received the proper quantity of boxes, pallets, or cartons, plant personnel must count the contents of shipments in an effort to verify that all the material for which the plant was invoiced was actually received. Quite often the quantity of material indicated on the exterior of a container is not actually in the container. This may be the result of a mistake or carelessness in preparing the shipment at the supplier's plant.

Despite this realization, most plants only label counted the majority of productive material they received.

The quantity which the label indicated as being contained in the box, carton, or pallet was accepted as the quantity to adjust inventory figures. In performing a label count the box, carton, or pallet was not opened.

Material which was not label counted was usually counted by an actual physical hand count or by weight count, depending upon the nature of the material. It is only by using these methods that the exact quantity of material being received may be accurately determined.

Most non-productive material and parts on security listing were hand counted or weight counted at all plants included in this study.

In an effort to verify the label count on productive material, the material was physically counted or weighed by a schedule. This schedule was designed in such a manner that a certain number of shipments from each supplier were checked during a designated period of time, usually a month. In addition to this basic requirement, a list of parts composed of high-value and theft-attractive productive items was also compiled. This was an arbitrary listing determined only by the value and the theft attractiveness of the particular part. As a result, this listing might include many parts from a particular supplier and none from another supplier. One-hundred percent of all receipts involving such parts were physically counted or weighed.

Such schedules are designed primarily with emphasis on the high-value and theft-attractive productive materials. Many plants had no such schedules; others had just begun to devise such schedules; and a very few plants had designed quite elaborate programs. One plant had devised such a sophisticated schedule that by physically counting or weighing a very small percentage of its total number of receipts, it was able to obtain a 100% check on material which composed approximately 80% of all the value received at the plant.[1]

Discrepancies between what was actually received and what the plant was invoiced for were generally taken up directly with the supplier or vendor, not the trucking company. Such discrepancies may be either an overage or a shortage. Over a given period of time, the values of such overages and shortages usually counter-balance each other.

All information concerning the count, regardless of whether a label count, weight count, or hand count is generally recorded on a form commonly referred to as a receiving memo. The receiving memo is a record of the material checker's count. It is the quantity indicated on the receiving memo which is taken as the figure in making inventory adjustments. A receiving memo is prepared for each shipment from each supplier.

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[1]Interview with Supervisor Data Processing and Methods, Plant #3, April 24, 1965.

Each plant has a somewhat different method of performing such physical and weight counts, many of which are very detailed. However, the methods of such counts are not of concern in this Chapter. These counts are primarily designed to insure that the supplier is actually packaging the proper quantity of material in the cartons, boxes, and pallets which it ships to the purchasing plant. The counting process has a security value in that most counting schedules are formulated around the high-value and theft-attractive items. The counting of this material also serves as a security check on the receiving checker who originally received the material at the receiving dock.

An accurate count of the quantity of such material which has been received also contributes significantly to a more accurate book inventory of these items.

The discussion of receiving procedures thus far may have given the impression that there is a distinct difference between the steps of carton or box counting the material as it is unloaded and the counting of the articles contained in those containers in the material counting area. This is not always true.

At some plants the initial procedure of signing the truck driver's freight bills, thus releasing the truck, and the actual counting of the material either by label, hand, or weight count, is performed at the same time and by the same person. As a result one person has entire control of

receiving the material into the plant. Such a procedure has certain obvious unfavorable security implications. Whenever one person has that much control over any given portion of a procedure, the opportunity for theft is greatly enhanced. Large thefts may occur under such circumstances if collusion with a truck driver should occur. In such instances, there is no separation of functions, no system of checks and balances on the work of this single individual. The proper receipt of material depends almost entirely upon the integrity of one person.

It is proposed that two different persons be involved in the performance of these two receiving functions. Since both processes must be done anyway, the manpower required should remain relatively the same regardless of which method is utilized. In order to insure that different persons perform each portion of this function, the material departments and the security department must continually audit the implementation of the procedure. While auditing this aspect of the receiving procedure, special attention should be directed at the combination of signatures involved. Theoretically, three signatures are involved: the common carrier truck driver, the receiving checker who signs the freight bill releasing the truck driver, and the checker who actually counts the material. Certain combinations which appear together frequently may be an indication of possible

collusion. Especially important is an audit of receipts which contain high-value and theft-attractive items.

The auditing section of the accounting department may also audit this procedure to insure that the proper functional separation is being adequately maintained. Proper functional separation would not represent a solution for all theft problems but it would provide more adequate security than now exists in many instances.

Under the proposed procedure, it would be necessary to involve an additional individual in a conspiracy before theft may become a reality. It is the goal of any procedure where the security of material is involved, to provide for a separation of functions in such a manner that as many persons as possible must be involved before the procedure may be successfully circumvented. The activities of one person are to act as a check on the activities of another.

After the completion of the counting procedure, and the preparation of the receiving memo, all material must then pass through the receiving inspection department before being moved into inventory or used for production. It is usually the sole function of the receiving inspection department to determine whether the material which has been received meets the designated specifications and the minimum standards of quality established by the plant. If the material does not meet such minimum standards, it is rejected and returned to the supplier. Normally, most receipts are only sampled by the receiving inspection department.

At the majority of receiving docks, the receiving inspection department performed its functions very slowly, thus creating a great backlog of material on the receiving dock which had already been counted and was ready to move to inventory or production. A serious bottleneck in material flow was created on the receiving dock as a result of this slowness.

As a result of the backlog of material, security on the receiving dock was impaired since material had to be stacked all over the dock area prior to being moved into the receiving inspection area. Generally, it appeared that this department left much to be desired regarding the promptness with which it performed its function and its cooperativeness with the receiving department in assisting it in more adequately coping with its problems of clearing material from the dock area.

III. CONCLUDING COMMENTS

It is the opinion of the writer that the most critical point of shipping and receiving security is at the dock rather than at the plant gate. Usually, the patrolman assigned to the plant vehicular gate has only sufficient time to perform a general inspection of each truck as it leaves the plant because of the high volume of vehicular traffic flow. Only special security inspections such as proposed in Chapter IX can provide truly adequate security at truck

gates. Such inspections are not practical, except on a sample basis; therefore the general gate inspection continues to be the security check at the truck gate for the vast majority of trucks leaving the plant. At most plants included in this study, the general gate inspection appeared to be of little security value, largely because of the lax manner in which it was performed. At some plants, no inspection existed. As a result of the ineffectiveness of the general gate inspection it becomes of primary importance that all security aspects of present shipping and receiving procedures at the dock be adhered to at all times in an effort to prevent the unauthorized removal of material from the plant.

Despite the security weak points existing in most shipping and receiving procedures, most procedures provide sufficient security if properly supervised. The responsibility for supervising such procedures lies primarily with the dock foreman. However, many instances were observed in which established procedure was circumvented. When existing procedures are circumvented, certain of the security aspects of the procedure are weakened, thereby increasing the potential for theft from the dock. It must be always remembered that any procedure no matter how well designed it may be, is only as good as the manner in which it is implemented and supervised!

In some instances the foreman even sanctioned such activity especially if this circumvention permitted him to

handle material in a more rapid manner. In most cases, this type of action by the foreman could be traced to the pressures placed upon him by his supervisor to move material quickly and efficiently. This dilemma was discussed in Chapter VI of this thesis.

It must be emphasized at this point that the security checks in present shipping and receiving procedures represent nothing more than hurdles for the potential thief. If potential offenders possess sufficient ingenuity and intelligence to clear these hurdles, they can "beat the system" so to speak. This is especially true when collusion is involved. Such hurdles were built into shipping and receiving procedures by intelligent human beings; therefore, they can be circumvented by even more intelligent and ingenious persons. The existence of a seemingly adequate procedure to guard against theft and misappropriation is no guarantee against it occurring.

The overly complacent attitude exhibited by most management and plant protection personnel regarding the adequacy of the security hurdles in shipping and receiving procedures cannot be over emphasized. These personnel conveyed the impression that "we got a system nobody can beat." Such an attitude is dangerous and may lead all plant personnel into a false sense of security regarding the security involved in shipping and receiving operations. Such complacency may also be stifling to creativity and new ideas

for the improvement of procedures, for these ideas may fall upon unreceptive ears and die.

CHAPTER XI

ADDITIONAL FACTORS INFLUENCING DOCK SECURITY

Many factors in addition to those already discussed influence the security of shipping and receiving operations. Some are unique to a particular industry or a particular plant location and others have more widespread applicability. It is the purpose of this Chapter to discuss some of these factors which appeared to be most significant at the industrial locations included in this study.

I. SECURITY AND ACCOUNTABILITY OF PRE-NUMBERED FORMS

Each plant uses some type of forms to authorize the movement of materials. "These forms themselves may be worth only a few cents, but when their function is considered, they become an instrument that may be worth hundreds of thousands of dollars."[1]

Forms which affect the shipping and receiving operation are of primary concern in this section, especially those utilized in the shipping function, since such forms

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[1]John R. Davis, Industrial Plant Protection (Springfield: Charles C.Thomas, 1957), p. 270.

usually represent authorization to remove material from the plant.

Some of the most important forms which must be properly secured and accounted for are purchase orders, shipping authorization forms, various sundry shippers, bills of lading, invoices, and other similar forms, which if misused, may result in the unauthorized removal of material or money from the plant. "Some thieves will steal blank bills of lading as well as shipping and purchasing orders in preparation for such robberies. Therefore, there should be a control system, including numbered forms to prevent the theft of these papers."[1]

All forms of this nature are pre-numbered at all industrial locations included in this study. These forms are usually purchased from a private printing source rather than being printed by the company. All forms are pre-numbered at the printing source with indelible ink so that there can be no tampering of numbers, without such activity being readily apparent. As a result of pre-numbering forms, both the forms used and the forms which are unused become more easily accountable.

Prior to pre-numbering forms of this nature, numbers were manually assigned. The numbers were either written or

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[1]William T. Lewe, "Warehouse Security, Sitting Duck or Fort Knox?" Security World, I, #3 (November, 1964), p. 23.

stamped upon the forms as they were utilized. There was considerable room for mistakes in this system. It became very difficult to account for the forms which were not used and to guard against their unauthorized removal from storage areas. In general, pre-numbering, if properly handled, has considerably improved the security of forms.

Once received at the plant, all pre-numbered forms are audited by the auditing section of the accounting department or by stationery stores department personnel in an attempt to insure that the printers have not skipped or duplicated any numbers in the particular sequence.

Most plants secured all pre-numbered forms under some sort of lock and key system. A few plants secured such forms in vaults and various other locked areas. Other plants did not secure pre-numbered forms in any way different than other forms which were not pre-numbered.

Generally, the accounting department or the stationery stores department is responsible for controlling and issuing pre-numbered forms. In either department only certain personnel are authorized to release such documents. In most cases, pre-numbered forms are also issued only directly to certain high ranking management personnel or agents of such persons. Agents of authorized high ranking personnel must possess a requisition for such forms. This requisition must be signed by a member of management who is authorized to obtain such forms.

The accounting department or the stationery stores department issues a particular sequence of numbers to a certain individual. As these numbers are issued, a record is prepared indicating to whom each particular sequence of numbers was issued. This is commonly referred to as the master listing. Individuals to whom numbers are issued are held responsible and accountable for all numbers in the particular sequence. If any of the numerical sequence issued to an individual turns up unaccounted for, it is he who must explain what happened to the particular number.

Nearly all forms used in industry, pre-numbered forms included, are composed of many duplicate copies. Each copy is designed to serve a particular purpose in processing the document. At some time most of these various duplicate copies must be accounted for and combined. It is the auditing section of the plant's accounting department which usually first verifies that the entire numerical sequence is present and secondly, that the proper duplicate copies of each numerical sequential number are available. Any missing numbers or duplicate copies which cannot be accounted for are thoroughly investigated. This investigation usually initiates with the person to whom the document was originally issued.

The functions of the auditing section of the accounting department are most vital to the security of pre-numbered forms. The majority of plants insist upon the

accountability of all pre-numbered forms. This task is completed by the auditing section as soon as the document has passed through the required paths of travel during the course of serving its various business purposes. It can be readily seen that the audit section of the accounting department is a very essential element in accounting for all numbers of a numerical sequence and the various duplicate copies of each number.

In order that the auditing section perform this function most effectively, it is necessary that all pre-numbered forms which are missing, lost, voided, or stolen be recorded and forwarded to that section immediately. It is the responsibility of the persons held accountable for these numbers to do so.

The security regarding the storage and the issuing of pre-numbered forms appeared to be quite satisfactory in most cases. Only a few plants appeared to be lax in this area. However, a general lack of securing pre-numbered forms after they had been issued to the operating department was apparent at many plants. On many occasions, such forms as bills of lading and sundry shippers were noticed on office desks or typing stands in shipping offices. In most instances, these documents were in such places that they could have been easily stolen and used to defraud the company of money or materials if the proper collusive situations existed among dock personnel and truck drivers. Employees

would only have to complete the form and forge the proper signatures. If this was done skillfully, a document which appeared to be genuine could be completed.

These documents represent cash to the plant and should therefore be handled as if they were cash. Most plants did not handle these documents with such thoughts in mind after they had been released from either the accounting department or stationery stores department where relatively tight security had been maintained. Despite the seemingly lack of control and accountability sometimes noticed at dock offices, most plants had little or no difficulty accounting for their pre-numbered forms. Whether these plants had been only fortunate in this area or whether the existing methods of control were adequate was very difficult to determine; however, the potential for misappropriation existed for an enterprising thief under present circumstances. The control at the point of usage was left to the discretion of the foreman in most cases.

Some persons in the plant protection department advocated that their department should control, issue, and account for all pre-numbered forms. These persons felt that this was a security function. No doubt there are strong security implications involved in this function, however, the plant protection department does not appear to be the department which can handle the security of pre-numbered forms in the most efficient and secure manner.

As now exists in industry, either the stationery stores department or the accounting department issues pre-numbered forms and maintains records of the numerical sequences issued. It seems that the issuing of all forms, whether pre-numbered or not, should originate in the stationery stores department at all plants. Many accounting departments which were responsible for issuing and controlling pre-numbered forms looked upon the duty as not belonging to them, but to the stationery stores department; as a result, they did not take a sincere interest in this responsibility. The stationery stores department should maintain an accurate record of all numerical sequences issued and to whom they were issued. This information could be forwarded to the accounting department for auditing purposes.

As a result of separating the issuing of pre-numbered forms from the auditing or accounting function, a security feature is added. Separation of functions such as would exist under the proposed procedure would do much to counteract a collusive effort within a single department which may result in the manipulation of documents in such a manner so as to possibly defraud the plant of material and/or money.

Plant protection should also play a vital role in the security of pre-numbered forms. Plant protection patrolmen posted at plant truck gates "clear" all vehicles leaving the plant premises. They should generally inspect all trailers for unauthorized material. Most inspections are

only visual, cursory checks in an effort to spot unauthorized material which is leaving the plant. On a spot check basis, entire loads should be physically checked and the contents of the load verified with shipping documents.

Most plants required plant protection gate patrolmen to check all documents for authorized signatures. In order that gate patrolmen can be effective when checking for authorized signatures, it is necessary that an up-to-date listing of all authorized signatures in their own handwriting be available at each vehicular gate so that if any question should arise, it is relatively easy to verify the signature in question. "It can therefore be seen that control over physical transactions is mainly dependent upon the control over the forms authorizing these activities."[1]

Although the security and accountability of pre-numbered forms appeared to present little problem at any of the locations included in this study, two aspects stood out as being potential problem areas. First, a few plants did not secure their pre-numbered forms under constant lock and key security. Pre-numbered forms were seen onshelves along with other forms which were not pre-numbered and in which there was little need to control. It seems that for the proper security of pre-numbered forms, they must be under constant lock and key in one area of the stationery stores

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[1]Davis, op. cit., p. 271.

department. Only a limited number of persons should be issued keys or be given the combination of the locks that secure the area within the department where the vital pre-numbered forms are kept. As an additional security precaution, only authorized personnel should be permitted in the area where forms are stored, especially in the area where pre-numbered forms are stored.

It seems that if management deems a particular form important enought to deserve pre-numbering, this form also merits more stringent security than does a form not felt to be of sufficient value to be pre-numbered. This is not always the case in some plants at the present time; as a result the purpose for pre-numbering has been partially destroyed. Locking such forms appears to be only good business practice since many of these forms are as valuable as the money they represent.

Secondly, after the pre-numbered forms are issued from either accounting or stationery stores departments, they are taken immediately to the area where they will be utilized. Many times, at this point the security of these forms becomes quite lax. Forms could be seen on all the desks and tables in areas where they were being used. Many were in the open where they could be easily stolen. Many forms such as bills of lading and sundry shippers were seen in shipping offices; theft of such documents may very easily lead to unauthorized removal of material from the plant. It

seems that it would not be unreasonable to request that all pre-numbered forms be kept in desk drawers and in a neat numerical sequential order rather than leaving them all over on the desks where such documents can easily be stolen and used to defraud the company.

Representatives of the plant protection, stationery stores, and accounting departments, should meet and formulate a procedure for the security and accountability of all pre-numbered forms. This must be a cooperative effort in order to become effective and result in improving security and accountability. It must be the duty of all departments involved to enforce the formulated procedure in an effort to obtain better security of pre-numbered forms.

II. SEALING PROCEDURES

The sealing of trucks is a realm of industrial security which was found to represent about as wide a variance in opinion and practice as any encountered while researching for this thesis. Six of the fifteen plants included in this study did not seal any trailers. Those which did seal trailers carried out this procedure in varying degrees of thoroughness.

There are many variables which are contributory to this wide variation, some of which have little or nothing to do with security _per se_. One of the major factors influencing whether a load will be sealed or not is whether it

is a full load or a less than truckload lot (LTL). This is especially true in the case of common carriers. If a plant has a shipment which fills only a portion of a trailer and the plant wishes that the shipment be sealed and be transported directly to its destination, the plant must pay a freight charge equivalent to an entire load. This type of freight charge is usually prohibitive, for many times the freight rate costs almost as much as the monetary value of the material being shipped.

When shipped by common carrier, LTL loads are consolidated with other shipments of various local companies at the carrier's terminal and loaded in an over-the-road trailer to be transported to a distant terminal. At the destination terminal, cargo is unloaded once again and placed in local trailers for delivery to its ultimate destination. There is great exposure of such shipments to theft under such circumstances; however, this is the pattern of movement for most industrial shipments which are shipped by common carrier. Most industrial shipments by common carrier are LTL in nature and are not sealed when leaving the plant.

Even when the load fills an entire trailer and goes directly to its destination, many plants do not seal the load. Some plants were noted that did not own a seal for trucks, not even their own company trucks. Personnel at these plants felt that once the material was on the trailer of the common carrier, it was the carrier's responsibility to move

the material intact to the destination point. This feeling existed even in the case of high-value and theft-attractive items; these plants place the entire responsibility with the common carrier. Since the load is the responsibility of the common carrier, it is his perogative whether such loads are sealed or not. Usually common carriers apply their own seals at their terminals when over-the-raod shipments leave. The terminal usually maintains a record of such sealing so that the trucking company can protect itself from shortage claims which are not its fault. This means that from terminal to terminal the trailer is sealed. The local trailer used for pick up and delivery at each terminal site is not usually sealed.

Many common carrier trucking companies now require that their drivers count the material being loaded on their trailers so that they can verify that they did receive the quantity of material the driver signs for at the dock. Some common carrier companies also hold their drivers financially responsible for mistakes such as not receiving the quantity of material for which they sign. This is one way that common carriers protect themselves against claims which are really only errors in shipping.

In the case of company owned and operated trucks, some plants sealed all such trailers when they left the premises, some sealed only a few depending upon the value of the material involved, and still others sealed none. The

position which each plant occupied along this continuum appeared to reflect the particular plant's general philosophy on the issue of sealing.

As opposed to the situation involving common carriers, the cost of shipping any size of load by company trucks is practically the same for the driver is a company paid employee and is paid the same hourly rate whether hauling a full load or a partial load. Therefore the cost of shipping LTL in the case of a company truck should have little influence upon whether the truck is sealed or not. Most company trucks usually transport materials only short distances among plants of the same company division or among divisions which have plants relatively close together.

In those plants which do seal trailers, there is usually no written procedure governing the sealing operation. It appears that most present sealing procedures have been established by tradition rather than by a methodical step by step study in an effort to determine the best method to accomplish the task. As a result of this approach to the sealing procedure, the procedures vary somewhat from plant to plant. This section attempts to relate the basic principles of the procedures generally followed at the nine plants included in this study where sealing is done to varying degrees.

At most plants all seals were usually secured at one central point. The plants included in this study varied

widely as to where this central control point was located. This point may be the plant protection department, the superintendent of materials office, or in some other related department. It appeared that no department willingly accepted this duty. As a result of this type of reluctance, the duty of maintaining proper control and accountability of seals sometimes left much to be desired. The plant protection department seemed to take the most genuine interest in performing the duty of issuing seals to the various docks and maintaining a record regarding where certain numerical sequences have been issued and who was responsible for them.

A group of seals were usually issued from the central security point to each particular dock area. The foremen who supervised that dock on the various shifts were responsible for maintaining control over the seals issued to them. In most cases these seals were locked in a cabinet or drawer in the dock office. The seals were arranged in numerical sequence and were used as needed. Theoretically only authorized personnel were permitted to remove seals. Usually these persons were shipping clerks who typed the bills of lading or shippers which authorized the removal of material from the premises. As the bills of lading or shippers were typed the number of the seal to be used on the particular trailer was indicated on it. At the same time the number of the seal was recorded on a log. Along with the seal number was indicated all the vital information

which may be needed to identify the trailer and the shipment to which this particular seal was assigned. Every seal issued to a particular dock must be represented on this log and accounted for by auditing personnel.

At the time the truck driver received his copies of the bill of lading and a gate release pass, the seal for his truck was usually given to the material checker. If seals were applied at the dock, usually the material checker applied the seal and locked it. Under no circumstances was the truck driver supposed to apply the seal. The foreman was usually required to verify the number of the seal with the number typed on the shipper or bill of lading. It is also the duty of the foreman to see that the seal was applied properly and locked. Despite the required procedures at most docks, the foreman usually never inspected the seal to determine if it was properly applied and locked. Also, on many occasions, truck drivers were seen applying the seals.

When the sealed trailer left the plant, the patrolman at the gate was supposed to inspect the seal to determine that it was properly applied and locked. He was also supposed to check the number of the seal with the number indicated on the shipper or bill of lading. The patrolman served as a second check on the proper usage of the seal.

Many plants did not allow seals to be applied at the dock areas. These plants felt that it was necessary that the plant protection patrolman at truck gates check all

loads prior to the load being sealed. As a result the trailer was pulled to the truck gate and after visually checking the trailer, the patrolman applied the seal and verified that it contained the same number as indicated on the shipper or bill of lading. While observing whether this procedure was being carried out properly, many incidents were observed where the truck driver applied the seal himself.

Any time the truck driver applies the seal himself and his action is not checked by a member of supervision and/or plant protection, there is a chance that defalcation may result without anyone realizing it. Seals must be locked or they may be removed without anyone detecting that tampering has occurred. If the driver is intent on stealing, he could apply the seal and not lock it. He then can remove the seal at a later time and remove material from the load. After the removal of such material, he could put the same seal on the trailer and lock it. Therefore, materials would be missing from the load upon arrival at its destination, but the seal number would be correct and the seal would be locked properly. Therefore, such shortage may be attributed to an error at the time of loading. Therefore, it is necessary that either a foreman or a plant protection officer thoroughly check that all seals are correctly locked before permitting trailers to leave the plant.

When receiving a trailer which is sealed, the receiving clerk, material checker, or foreman first inspects

the seal to determine whether the number of the seal agrees with that indicated on the freight bills. The seal is usually then inspected in an effort to determine if it has been subjected to tampering. If any material is missing and it can be determined that the seal has been tampered with or the seal number does not agree with the number indicated on the freight bills, the trucking company may be held responsible for the loss.

Sealing of vehicles can be an effective security measure if the sealing procedure is properly carried out and adequate records of all seals are maintained. However, if the proper procedures and maintenance of adequate records degenerate into the haphazard function which was noted at many locations, the application of seals becomes little more than a routine exercise and serves little or no security purpose.

III. PERIODS OF SPECIAL VULNERABILITY

Nearly all plant protection supervisors recognized the security problems existing at docks during operating hours. However, many failed to prepare adequately for the security problems which plague docks during such non-operating hours as the lunch period, period during shift change, and the time period during the early morning hours when no dock personnel are working on the dock. Such

periods of time were found to be especially vulnerable on many dock areas included in this study.

If dock manpower is poorly utilized or assigned, lunch periods may become a period of great theft potential. The lunch periods of dock workers should be staggered so that there is always a skeleton crew on the dock area at all times in order that a truck may be unloaded anytime that it may arrive at the dock. This would prevent truck drivers from having to wait until the lunch period was completed before getting their cargo unloaded. Such a plan should not be devised solely for the comfort of the truck driver in mind, but for improving security of the plant's property. The movements of truck drivers who must wait for long periods of time on the dock prior to being loaded or unloaded are many times difficult to control. They wander about and may become involved in activity which may be detrimental to the company, both from a security and safety standpoint. The purpose of the proposed policy of having someone on the dock at all times is to get the trucks cargo loaded or unloaded and to get it out of the plant as quickly as possible.

In addition to staggering lunch periods, it is also necessary that the dock personnel be rotated among the various lunch groups so that the same personnel do not always compose a given skeleton crew. Since the skeleton crew is a relatively small group of persons, it may be relatively easy

for this group to become involved in collusive activities with truck drivers. Collusive efforts are usually more easily achieved when a small group is involved in a given activity. Constant rotation of the composition of these skeleton work crews may be an effective means of counteracting collusion. If a group of this nature is not subject to rotation, this group may become overly familiar with a given truck driver, who always makes a special effort to visit the dock only during a particular part of the lunch period when this skeleton crew is on duty, and at no other time. It is with this particular group of employees that the truck driver may become involved in collusive efforts.

One of the largest dollar value dock theft cases in recent years within the company included in this study occurred during lunch periods at a particular plant which did stagger lunch periods, but which did not rotate its personnel. This particular group of dock employees became very friendly with a truck driver who always came to the plant at a time when he knew that this group would be working on the docks. Collusion among these persons resulted in great quantities of material being removed from the plant.[1] (This particular theft case is Case #2 analyzed in Table 1, Chapter III.)

In addition to the availability and proper deployment of manpower, it is also necessary that proper supervision in

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[1]Interview with Assistant Warehouse Superintendent, Plant #7, May 4, 1965.

the form of a foreman or general foreman always be present on the dock, especially during the lunch period. The dock foreman should never take his lunch period at the same time as his employees. If at all possible, it is advisable that another foreman or general foreman supervise the dock when the regular foreman leaves for lunch.

Most plants have now realized these potential security weaknesses and have taken strides to protect against them. Nearly all plants now rotate the lunch periods of dock personnel in such a manner that someone is continually available on the docks to load or unload trucks, however, most plants do not rotate their employees among various lunch groups; the same groups of employees are usually working together as groups during these staggered lunch periods.

Also, most plants do not have constant coverage on the dock by a salaried person. Usually, when the foreman eats his lunch, an hourly-rated material checker or group leader is designated as the person in charge. A group leader is a high seniority hourly-rated employee working on the dock who is felt by management to be a dependable employee.

If a dock is one which completely terminates operations during the lunch period, no trucks should be permitted to come into the trailer wells during this time. If the dock is one which has doors in front of each trailer well, these doors should be closed during the lunch period, thus not permitting any trucks into the dock area.

In dock areas without doors for each trailer well, all drivers arriving at the dock must remain in their cabs or remain in the truck driver waiting area during the lunch period. Trucks should not be permitted to maneuver into dock wells during this period of time.

In essence, no trailers or drivers should be permitted to come into dock areas during the lunch period at plants in which the entire dock crew eats lunch at the same time. Even under these circumstances the foreman should be present on the dock during the lunch period. It is desirable that some member of supervision be present on the dock at all times, both during lunch periods and normal operating hours.

During shift change is also a vulnerable period of time for dock security. The trend today is to have an hour between shifts because of the congestion and parking problems encountered when the first shift terminates and the second shift commences simultaneously. This hour break poses formidable security problems for most docks operating under such circumstances. Sometimes the first shift foreman leaves the dock and the plant before the second shift foreman arrives at the dock, therefore, there is no supervision on the dock for a given period of time.

On many occasions, trucks which arrived at the plant immediately after completion of the first shift had to wait an entire hour before loading or unloading. The drivers of these trucks were often seen walking about on the dock where

much valuable material was located, no foreman was present, all first shift hourly dock personnel had left, and none of the second shift hourly personnel had arrived for work. Sometimes, truck drivers were the only persons seen on the docks at this time.

In order to combat this problem, the first shift foreman should be required to remain one-half hour after his normal quitting time and the second shift foreman should be required to arrive at work one-half hour prior to the starting time of his shift. It is necessary that a member of supervision always be present on the dock. When the foreman is at the dock he should always attempt to position himself in such a manner that he is able to observe the entire dock area. Foremen should be especially alert to the dock area during shift change.

One method of improving security during the shift change period is not to permit any trucks into the dock well area during this period. All doors to the trailer wells should be closed. If any trucks are in wells at the time of shift change, the truck driver should be instructed to remain in the truck driver waiting area.

If the dock well has no doors, the driver should be instructed to park his truck in an area away from the dock. He must either wait in his cab or in the truck driver waiting area until the second shift is in operation. Drivers

who do not obey this regulation should be immediately reported to their trucking terminal.

A third area of concern in this section is the security of docks during the early morning hours when under normal circumstances only a few third shift personnel are present in the plant. Management goes to great lengths to properly protect docks from intrusion from the exterior during dock non-operating hours. All doors are thoroughly locked and many are "bugged" with various electronic devices. This type of elaborate protection usually adequately secures the dock from outside intruders. However, most managements fail to adequately protect the dock against intruders from within the plant. On many occasions, third shift employees who are on their rest periods or lunch breaks wander into the dock area. This problem is compounded because of the limited number of supervisory personnel available during the third shift. Many times these employees steal various tools and other small valuable items. Of the twenty-nine theft cases analyzed in Chapter III, eight involved thefts of this nature.

In an effort to prevent such thefts, dock areas should be enclosed with a wire screen security fence. This fence would physically isolate the dock area from the other parts of the plant so that no personnel are able to wander unaccompanied into the dock areas during dock non-operating hours. It is necessary that this fence be constructed in

such a way that the flow of goods is not impeded during operating hours. Perhaps gates could be built into the fence. During dock non-operating hours, these gates could be locked. Only the plant protection department and dock supervisors need to have keys to unlock such gates.

Presently, most docks are not physically separated from other areas of the plant by a wire screen fence, therefore, all highly valuable material should be secured during dock non-operating hours in the dock office or special cribs, which exist at most docks for the purpose of securing such items as expensive non-productive materials until they may be taken to their proper storage place. It should be the duty of dock supervisors to see that their employees always secure all valuable and theft-attractive material in the crib or dock office each night. Plant protection personnel should inspect the dock to see that this is done while on patrol during the non-operating hours.

Other periods of special theft vulnerability may be the very beginning of a shift and during the confusion at the termination of a shift. Each dock should evaluate its vulnerability to theft during these periods and plan its security accordingly.

IV. INTRA-PLANT MOVEMENT OF MATERIAL

Intra-plant movements of material referred to in this section are those movements of material within a single

industrial complex which may have buildings spread throughout various parts of a city. In order to transport material from one group of buildings within the complex to another group of buildings within the complex, the truck must leave the confines of one group of buildings and enter the confines of a geographically separate group. Thus, these vehicles must travel on public streets and roads out of the sight and control of plant protection and other supervision. Therefore, it is necessary that the proper security precautions be taken so that intra-plant movements of material arrive at their destination intact. Relatively few plants encounter such problems for the large majority of industrial complexes are confined within a single location. All movement of material is done within a single perimeter fencing at such locations.

Industrial locations faced with this problem may have portions of their complex in various parts of a city or the immediate surrounding community. These locations are faced with special security problems in transporting material from one portion of the complex to another. This situation is especially characteristic of older plants as opposed to the relatively newer industrial complexes which are ordinarily entirely constructed within a single perimeter fence.

In most cases, intra-plant movements of material are accomplished with company trucks and drivers as opposed to common carriers. Characteristically, intra-plant movements

of goods involve moving goods only a short distance. Sometimes, it may be only across the street, other times it may be across a large city. Normally the activity of company trucks involved in intra-plant movements of goods is not logged on a daily gate truck log as is the activity of common carrier trucks which enter and leave the plant. Personnel at most plants indicated that no log was maintained on such movements because of the great volume of this type of traffic during a given period of time. Since such shipments are moved with company trucks and drivers, many personnel indicated that they felt it was not necessary for such movements to be recorded or logged. Since there is no log maintained in most cases, it becomes especially imperative that proper security be maintained during such movements.

Most plants used some type of material transfer forms for such movements. These forms were pre-numbered and contained many copies, one of which was retained by the truck driver who moved the material between the various parts of the industrial complex. This form usually indicated the quantity and the part numbers of the material on the vehicle. Such material transfer forms were presented to supervision at the destination point.

Some plants did not lock or seal these vehicles as they proceeded onto the public streets and roads to other parts of the industrial complex. Generally, these trucks were seen being waved through plant gates subject to no inspection by plant protection officers.

Other plants locked each intra-plant trailer as it left the confines of one portion of the industrial complex and unlocked every trailer as it entered the confines of other portions of the industrial complex. At such locations, plant protection patrolmen at the various truck gates were the only personnel authorized to lock and unlock these trailers.

At plants which locked intra-plant movements of material, the trailer must approach the gate with its rear gates open. In most instances, the plant protection patrolmen visually inspected the trailer, closed, and locked the rear gates of the trailer. Occasionally, the plant protection officer requested the truck driver's copy of the material transfer form and instructed the driver to pull the trailer aside. The patrolman thoroughly inspected the entire load and verified its contents with those indicated on the material transfer form.

When the trailer arrived at the truck gate of the other portion of the industrial complex, the trailer gates were unlocked by another plant protection patrolman. This patrolman may also request the material transfer form and thoroughly inspect any given trailer as it enters the plant gate.

Such thorough inspections were not performed very often, but often enough that a driver never knew when he may be next. The great volume of traffic at most truck gates

prevented further use of this security measure. Also, much time may be consumed during the inspection of a single trailer. This procedure was designed as a psychological device in an effort to deter drivers and/or other company personnel from theft. The security hoped for as a result of locking trailers has a major inherent weakness. This weakness involves the key utilized in the locking procedure. Keys may be lost, stolen, or duplicated regardless of how tightly they are controlled. Therefore, an unscrupulous intra-plant truck driver may be able to obtain a key, get it duplicated, and bilk the company of considerable material. This is especially dangerous since the locks on every trailer are identical and may be opened with a single key.

Thefts resulting from a truck driver obtaining a key for the truck locks may go undetected as to <u>modus operandi</u> for some time. It would be known that the trailer left one portion of the industrial complex in a locked condition and arrived at the other portion of the plant in a locked condition. Therefore, shortages may be attributed to errors in loading rather than to theft of material during transit among various portions of the plant.

A second major method of securing intra-plant movements was accomplished through the use of seals. At industrial complexes which utilized seals, a certain number of seals were issued to the various truck gates. A thorough record of the numerical sequence of seals issued to each

gate was maintained. It was necessary that each seal be accounted for at all truck gates. Any discrepancies were thoroughly investigated.

All exiting vehicles which were loaded with intra-plant material transfers approached the plant truck exit with their trailer gates open. The plant protection patrolman at the gate usually visually inspected the trailer, closed the gates and applied a seal to the gate. It was required that the plant protection patrolman apply the seal; the truck driver was not permitted to seal the trailer. This procedure was strictly enforced, for in order for a seal to be of any value at all, it must be installed in such a manner that it is properly locked. If a truck driver was permitted to seal his own trailer, he may place the seal on the gates in such a manner that it appears to be locked but is not. He may then remove the seal enroute and remove a portion of the load, put the seal back on the trailer and lock it; when he arrives at his destination, the seal would appear intact and properly locked.

The plant protection patrolman at plants where intra-plant loads are sealed also occasionally pulls trailers aside as they leave the plant and thoroughly inspects their contents against what is designated on their material transfer forms.

After the plant protection patrolman sealed the trailer and recorded the number of the seal in a log which was maintained at each truck gate, he recorded this seal

number upon a pre-numbered truck pass form which was issued to the driver as he left the gate. This form was prepared in duplicate for auditing and accountability purposes. In addition to the seal number, this form indicated the trailer and trailer number, the patrolman's badge number, the name of the driver, the time, and other pertinent information.

The driver must present this form to the plant protection patrolman at the gate as he entered the other portion of the industrial complex. It was the primary duty of this patrolman to check the seal number indicated upon the truck pass form with the number of the seal actually on the trailer. He must also determine if the seal has been subject to tampering of any nature. Upon completion of these responsibilities, he removed the seal from the trailer and indicated upon the truck pass form that the numbers agreed. The patrolman then collected the truck pass form. This form was audited by plant protection supervision in an effort to insure the accountability of all seals and numerical sequences of truck pass forms.

Of the two most widely used methods of securing intra-plant material movements, the sealing method appears to be the most effective in guarding against theft in such material movements for it is relatively easy to determine if a seal has been subjected tampering. In the case of locks, a duplicate key may be obtained and thefts may continue for a considerable length of time before being discovered.

Although sealing seems to be a more secure procedure it must be recognized that seals can be duplicated. Despite this shortcoming of the sealing procedure, the writer feels sealing provides more adequate security than do locks.

Regardless of which method is utilized, it is essential that plant protection patrolmen be rotated at all truck gates which are involved in intra-plant movement of materials in an effort to guard against collusion between themselves and company truck drivers.

If the distance between portions of the industrial complex is quite substantial, some plants equip their trucks with a timing device which records every stop a truck makes and the period of time consumed for each stop. Any deviations from the normal amount of stops or the normal lengths of such stops is thoroughly investigated, especially if shipments are short. Such a device has proven to be effective in discovering possible defalcations which may occur during the transfer of material. These devices have also been very effective in controlling drivers who have a tendency to stop at all the coffee shops and truck stops enroute to their destination and waste the company's time.

In order to better secure the intra-plant movements of material every effort should be made to eliminate the use of open-topped trailers and stake-trucks for such movements since neither the locking nor the sealing procedure is effective. If at all possible, all intra-plant material

transfers of material should be in vehicles which are enclosed and can be secured by locks, seals, or other means.

V. DOCK HOUSEKEEPING

"Housekeeping simply means that there is a place for everything and everything should be in its place."[1] It is suspected by the writer that adequate housekeeping practices may have significant implications for the maintenance of proper security of material on docks. Housekeeping in dock areas is a constant and demanding problem since the very nature of the activity at dock areas lends itself to poor housekeeping. Material is continually being moved across an area which is not of sufficient space to adequately handle the volume. As a result, many times material must be placed anywhere that there may be space and proper housekeeping becomes of secondary concern.

Housekeeping is important from a security standpoint since when material is not kept as orderly as it possibly might be, it may be more susceptable to theft or misappropriation. Usually, when housekeeping is poor, material is strewn all over the dock area and much confusion exists concerning where it belongs. Disorderly dock conditions breed opportunities for theft. As a result of disorderly conditions on the dock, material which is stolen may not be

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[1] Davis, op. cit., p. 438.

missed for some time after the theft. If the material is stacked neatly and orderly, it is probable that thefts could be noticed soon after they occur. Therefore, poor housekeeping may be a factor which may be conducive to the theft of material from dock areas.

Every effort should be made to keep docks completely clear of materials especially the area near the dock's edge or near the rear gates of the trailers which are in the dock wells. Material should be kept as far back from the immediate loading or unloading area as possible and neatly stacked.

The relative evaluation of housekeeping at each plant included in this study was a subjective judgment on the part of the writer. However, after observing many dock areas, it was felt that considerable significance could be placed upon such evaluations regarding the adequacy of housekeeping.

The level of housekeeping on the docks at the various industrial locations included in the study varied greatly. Some plants performed very adequately in the housekeeping role and others performed atrociously. The housekeeping situation at each plant's docks appeared to be a direct reflection of the particular plant's management attitude toward the importance of housekeeping throughout their entire plant. Usually if housekeeping throughout other areas of the plant was judged to be either good or poor, the housekeeping on the docks was correspondingly good or poor.

Generally, housekeeping on shipping docks appeared to be more adequate than on receiving docks. Relatively good housekeeping procedures on shipping docks may have resulted from management realizing the theft potential involved in such operations, especially in service parts warehousing operations. Good housekeeping practices were especially noted on service parts warehouse shipping dock areas.

Receiving docks at most industrial locations appeared to be the poorest kept from a housekeeping perspective. Housekeeping on some receiving docks was so bad that one could hardly walk across parts of the dock area. Most receiving docks were very overcrowded, but with some extra effort in the housekeeping realm, much more space could have been provided upon the dock.

The dock foreman must take a great deal of the responsibility for maintaining proper housekeeping conditions on his dock. He is always present on the dock and should instruct his employees concerning the importance of good housekeeping practices. If a foreman does not care about good housekeeping, usually his employees will not care either. Good housekeeping does not just happen; each employee must be continually reminded of its significance by members of plant supervision, plant protection included.

Plant protection personnel also have a responsibility to see that housekeeping practices are maintained adequately. While patrolling the plant, the plant protection

patrolman should observe housekeeping conditions throughout the plant and especially those in the dock areas. If dock housekeeping is found to be poor and in need of improvement, it is the duty of the patrolman to write a report on such a condition and forward this report to his supervising officer.

Housekeeping is also important from a safety standpoint. Many industrial injuries have been the result of poor housekeeping practices.

Fire is one of the most costly and devastating hazards in modern industry. Poor housekeeping has been known to be responsible for many industrial fires. The realm of fire prevention represents only another reason for stressing the housekeeping function.

VI. DOCK REGISTERS

Dock registers are logs maintained at docks upon which pertinent information is recorded regarding each truck that visits each particular dock. Usually, dock registers contain such information as tractor and trailer numbers, tractor and trailer license plate numbers, the driver's name, name of the trucking company, time arrived at the dock, time trailer left the dock, numbers of the bills of lading or shippers authorizing the cargo if such documents are involved, and other information which is deemed necessary. At docks where registers are maintained, this type of information is recorded regarding every vehicle which utilizes the

particular dock. In most instances, similar information is also recorded at the truck gate when the vehicle enters the plant premises.

Dock registers were originally instituted as an additional security precaution to facilitate maintaining control of trucks while on the industrial complex. However, it was soon determined that the additional security provided by such a log did not justify the additional time and cost required to perform this function. Therefore, the existence of dock registers as a security measure is declining today at the industrial locations included in this study. Counterbalancing the decline for security purposes is the increased use of the dock register for other purposes.

Many docks continue to utilize the dock register, but security is not the primary purpose for its existence. The primary purpose of dock registers today is to maintain a record of the time that a particular truck arrived at the dock and the time the truck left the dock. Such an exacting record of time serves a twofold purpose. Initially, it serves as a schedule for servicing trucks in the order which they arrived at crowded dock facilities. Secondly, and perhaps the most important purpose served by dock registers is the record of the precise time that trucks arrived at the dock and the precise time they left the dock. Usually trucking companies allow a particular length of time that one of its trucks may be held at the dock for the loading or

unloading of material. Any time that a truck is held in excess of the permitted length of time, the plant must pay demurrage charges to the trucking company. Therefore, the dock register is utilized to provide the plant with an accurate record of the period of time which the truck is held at the dock so that the plant is not paying unjust demurrage charges.

Dock registers also serve to protect the plant from unjust accusations from trucking companies which complain that their trucks have been spending too long getting loaded or unloaded at the plant. As a result of the time recorded on dock registers, it can be pointed out to a complaining trucking company that its truck was in and out of the dock in a much shorter time than the trucking company stated. In some instances, the drivers were, in fact, gaining access to the docks and being loaded or unloaded in a much shorter period of time than they were reporting to their companies. These drivers would leave the plant and waste considerable time in coffee shops and truck stops before continuing on their journey. Again, dock registers serve to protect the plant from unjust claims being made against it.

Eleven of the fifteen plants involved in this study utilized dock registers at some of their docks. Only four plants did not use dock registers at all. Of the plants which did use dock registers, the extent of use varied from using dock registers at all docks within the industrial

complex to using them only at certain docks at which plant personnel felt their use was justified.

Generally, dock registers were used more widely at receiving docks as opposed to shipping docks. Eleven of the plants included in this study used dock registers to some extent at receiving docks and only seven plants used them in varying degrees at shipping docks. The explanation for this general situation is quite obvious. It is usually at receiving docks that one encounters the majority of problems with demurrage, order of serving trucks, and other related problems. It is usually much more time consuming to unload trucks than it is to load them.

Dock registers may also be used for security purposes if the need should arise. Security personnel may be able to obtain pertinent information from dock registers regarding all vehicles which appeared at such docks during any given time if such information is necessary for the purpose of investigating a particular truck driver or trucking company. Therefore, even though the purpose of the dock register is not primarily for security, its existence may have significant favorable security implications.

VII. TRAILER PARKING AREAS

Most large industrial complexes are faced with the problem of parking large numbers of trailers on their premises. Many times a trucking company brings a trailer to

the plant and finds that there is no dock space available to spot the trailer. Rather than taking the trailer back to the terminal most plants allow the trucking company to park the trailer at designated areas throughout the plant. These areas are usually near the docks. When there is room to spot the trailer, a yard switcher performs this function.

Other trailers usually parked in designated parking areas are those which are empty and have been pulled from the dock area by a yard switcher. These trailers are kept in trailer parking areas until trucking companies come to claim them. Also, many trailers in the parking area are those which have been partially unloaded at a plant dock. The remainder of the load may belong to another dock within the complex, but due to crowded dock conditions, the trailer cannot be immediately spotted at that particular dock. Therefore, this trailer is usually parked in a trailer parking area rather than being taken back to the terminal. The remainder of the load may not belong to the plant. If the trucking company does not come to claim its trailer immediately after the plant's portion of the material has been unloaded, this trailer is also taken to a trailer parking area by a yard switcher.

At most larger plants, trailer parking areas are not of sufficient size to handle the volume of trailers which must be parked. Many trailers are ultimately parked in any available space that can be found. As a result, many times

the parking of trailers interferes with plant operations because of the lack of space available. Some trucking companies compound this problem by attempting to utilize the plant provided parking space as a parking area for the trailers which are not in use. Plant management must continually be alert for such abuses. Usually when such conditions exist, the plant need only to notify the trucking company of such abuses and instruct them to remove their empty and partially loaded trailers from the premises.

Most plants, regardless of the number of trailers parked on their premises, are faced with significant problems regarding the security of the material in these trailers while they are parked on the plant premises. Most plants make no special effort to grapple with this problem. They only display an attitude of complacency and gamble that they will not encounter problems of theft and misappropriation from these trailers.

One plant included in this study has faced this problem and seems to have made significant progress toward developing a practical solution to the problem. This plant has a single area designated solely for the purpose of parking trailers. Therefore, this plant has immediately gained centralized control over the parking area for such vehicles. The designated area was well lighted and was some distance from any buildings of the industrial complex. It was not physically separated by a fence or barrier, but plant

management was seriously pondering whether the area should be physically separated by a fence of some sort.

As a further security measure, this plant required that all trailers which contained material parked in the trailer parking area must be sealed. If a trailer which was not sealed upon arrival at the plant and the trailer had to be parked in the trailer parking area prior to being unloaded, the plant protection patrolman at the truck receiving gate sealed the trailer with a yellow seal. Trailers that entered the plant which were sealed were permitted to go directly to the trailer parking area to be parked. The seal on such trailers was considered sufficient.

Trailers which had been partially unloaded at any one of the plant docks and which had to be parked in the trailer parking area were sealed by dock personnel with a yellow colored seal. The remainder of the load may be either for another dock at the plant or for an entirely different plant or place of business. Regardless of the case, if the trailer had to be parked in the trailer parking area, it must be sealed with a yellow seal. This seal was applied by dock personnel at the dock from which the trailer was pulled. As a result of these procedures regarding sealing of trailers in the trailer parking area, all trailers which contained material were sealed with either a yellow seal provided by the plant or the silver colored seal on the trailer when it arrived at the plant. No trailer containing

material was permitted to park in the parking area without a seal.

Plant protection personnel made inspections of these trailers twice during each twenty-four hour period. The purpose of such inspections was to verify that every trailer which contained material was properly sealed. It was not necessary that empty trailers be sealed.[1]

Based upon what was seen while researching for this thesis, it appears that most plants have a long way to go in providing adequate security for trailers which are parked at the industrial complex. It seems that the first step might be to provide a centralized parking area which is physically separated from the remainder of the plant by some sort of fence or barrier. This area must be well lighted at night and periodically patrolled by plant protection personnel. If these basic security provisions could be supplemented by a method of sealing similar to the method related above, it seems that adequate security could then be provided for trailer parking areas.

VIII. LOCATION OF DOCKS

Docks are usually located in those areas of the industrial complex which are felt to be the most efficient for rapidly moving materials to and from the plant. In some

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[1]Interview with Sergeant, Plant Protection, Plant #5, April 20, 1965.

instances, such locations may be near the plant truck gate, in other instances they may be deep within the interior of the industrial complex.

The location of a dock may present significant security implications in situations where the dock area is located in the interior of the plant, far from a truck gate. The distance from the truck gate to the dock area may present the driver with an opportunity to stop his truck and load unauthorized material into the cab or trailer. The behavior of a truck driver enroute from the plant entrance to the dock is especially important for he is not normally escorted. Also, plant supervisory personnel are many times too busy to ask questions of the driver if he should stop his truck. The activity of the truck driver may be especially dangerous if he is in collusion with any plant employee who works somewhere along his route to the dock area. Such unauthorized stopping during the course of this journey may result in material being stolen from the plant.

Nearly all plant protection and materials management personnel who were interviewed strongly emphasized that all dock facilities should be located inside the plant perimeter fencing. No docks should be located in such a manner that access to them may be gained directly from a public street or road without passing through a gate in the plant perimeter fencing. Dock areas which are accessible directly from public streets or roads offer great potential for theft.

This potential may be especially great if no plant protection patrolman is assigned to the dock. An additional security problem at such locations occurs when persons who are not employed at the plant wander into the dock area from the street or road and steal material and/or cause various types of disturbances.

Only one dock which was accessable directly from the street or road was noted during this study. This was a very small dock and was used very seldom. However, before any material could be loaded or unloaded at this dock, a plant protection patrolman had to be present to supervise the operation.

Generally speaking, all plants included in this study have done a commendable job in locating their docks so that they are not directly accessable from public streets or roads.

Sometimes geographic pecularities of the plant's location may influence the location of dock areas. Rivers, lakes, layout of streets and roads, and other geographical factors may play a significant role in the location of dock areas. What is felt to be the best security concerning dock locations may have to be sacrificed in lieu of other considerations in some instances.

Aside from the security consideration of locating docks so that they are not directly accessable from public streets or roads, it appears that other security aspects

have merited little consideration in determining the location of dock facilities in this study. Apparently, many times overruling recommended security precautions is the need for having material received at a location or shipped from a point which involves the minimum handling and cost for the plant. This is an economic consideration and has much merit. However, it is hoped by the writer that both the security and the economic aspects of dock locations may be taken into consideration simultaneously in the construction of new docks and in the re-location of existing docks in an effort to improve security without generally reducing efficiency and productivity.

It is desirable, at least from a security point of view, that all docks be located in such a position that a truck may be visable at all times by the plant protection patrolman at the truck gate while the truck is enroute to the dock area. Such a situation may go far in removing the temptation for the driver to make unauthorized stops between the truck gate and the dock at which he is scheduled to make a legitimate pickup or delivery. Most of the ninety-one docks included in this study were not located in such positions that a truck could be observed from the time it left the truck gate until it arrived at the dock area.

Another potential theft problem may exist where docks are located adjacent to perimeter fences. This physical arrangement may be especially vulnerable if lighting on

the perimeter fence and in the immediate dock area is unsatisfactory. A dimly lighted area only invites theft during the hours of darkness.

Case #15 analyzed in Chapter III of this thesis involved theft of material which occurred at a receiving dock which was located near a poorly lighted perimeter fence. Material was thrown from the dock area over the perimeter fence into a railroad switching area. Friends of the plant employee involved waited among the railroad cars and claimed the material when it was thrown over the perimeter fence. This modus operandi was used for quite some time before the employee was observed throwing material over the fence one night.

IX. NUMBER OF DOCKS

The plants included in this study demonstrated tremendous variations in the number of docks at any given industrial location. As indicated by Table 2 in Chapter IV, the number of docks at the various plants included in this study ranged from two docks to eighteen.

Usually the older and larger industrial complexes contained the greater number of dock facilities. Many of these older plants contained a variety of operations, each located in a different building of the complex. By virtue of the many different operations being performed and the great number of buildings at such locations, there was a

need for many relatively small docks. For example, many of these docks had only two or three dock wells.

Regardless of how few dock wells are present, these docks must be staffed with personnel, both hourly-rated and supervisory. As a result many such docks are not sufficiently staffed, especially from the supervisory standpoint. It must also be emphasized that the potential for theft and misappropriation is present regardless of dock size. With a large number of docks this potential is only present at a greater number of places.

As contrasted to the older industrial locations, the plants which are now being constructed or have recently been constructed usually contain but one major operation. This operation is usually located in one or two very large buildings. Thus the necessity for a great many shipping and receiving docks is reduced. As a result, most newer plants have fewer docks within the industrial complex than do older docks. Usually the docks are much larger, i.e., they contain many more dock wells.

Every effort should be made to reduce the number of docks at all industrial locations. Even the older industrial locations which contain many docks should study their existing situations in an effort to reduce the number of docks. A few larger and consolidated dock areas are much easier to adequately control and supervise than are many small docks spread throughout the complex. Fewer and larger docks may

also justify the expense which is necessary to provide the proper security such as discussed in earlier Chapters of this thesis.

Consolidation of docks into as few as possible may result in situations in which most plants could afford to spend extra money for physically designing and arranging docks so as to provide the best possible security against the various types of theft and collusion between truck drivers and dock employees. More adequate supervisory staffs could be provided for it would not be necessary to spread supervisory personnel thinly over many different docks. A few dock areas using the best available security procedures are much better than many with poor or mediocre security procedures and physical arrangement.

When new industrial plants are proposed or constructed, an effort should be made to consolidate the shipping and receiving operation into as few dock locations as possible without seriously hindering the flow of material for production and warehousing operations. Such an arrangement may be quite influential in the security of dock operations.

Such a proposal for consolidating docks into as few as possible at any given industrial complex presents a challenging problem to plant layout, plant engineering, and other departments whose activities may be related to the shipping and receiving function. All must cooperate in an

effort to achieve the desired consolidation. This challenge must be faced in an effort to consolidate shipping and receiving points at existing industrial plants and in the construction of new plants. Consolidation of this nature may have significant implications in the security of dock operations.

X. CLOSED CIRCUIT TELEVISION

One of the ninety-one docks included in this study utilized closed circuit television as a means of improving dock security. This was a very large dock which received manufactured material through intra-plant material transfers from other parts of the industrial complex. No material was received at this dock from outside the complex. Shipments from this dock were made to various allied and non-allied assembly plants; therefore, all shipping from the dock went to destinations outside the industrial complex. Both the receiving and the shipping operation occurred simultaneously at the same dock facility. This dock was located in a building which served as a central warehouse storage area for the majority of parts manufactured at this particular industrial complex.

As a result of the type and quantity of material handled at this facility, the value of material processed during a single day's operation is extremely great. This material is also very highly attractive for theft since it

is in a form which can be readily used with no further processing required. Relatively speaking, the theft potential on this dock is very high.

In an attempt to counteract the great potential for theft at this dock, plant management installed a closed circuit television system. The labor union representing the hourly-rated employees at this plant was opposed to the installation of this "big brother" type of electronic device. The closed circuit television installation was also designed to allow management an opportunity to observe and study shipping and receiving procedures in an effort to improve the existing procedures.

The closed circuit television arrangement at this dock consisted of four cameras mounted in such positions that the entire dock area could be viewed. The monitor was located in the office of the Superintendent of Shipping and Packaging. He and other dock supervisory personnel observed the monitor on a random basis.

The Director of Plant Protection indicated that he felt the use of closed circuit television created a psychological effect on dock employees which was influential in discouraging theft from the dock and served to reduce employee loafing. He also indicated that weak points in present shipping and receiving procedures have been discovered and rectified.[1] Generally, plant management and plant

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[1]Interview with Director of Plant Protection, Plant #12, May 29, 1965.

protection supervisors appeared well satisfied with the closed circuit television experience on this dock.

Although making no attempt to evaluate the general effectiveness of the use of closed circuit television at this plant, two observations of the writer appear to be salient. For dock security purposes, it seems that the value of the closed circuit television would be greatly enhanced if the monitor were located in the plant protection office where the dispatcher could observe the screen continuously rather than on the random basis it is now being observed in the office of the Superintendent of Shipping and Packaging. Presently, it appears that this plant is relying more upon the supposed psychological value of this equipment than upon what is being observed on the monitor.

There also appeared to be an excess amount of labor-management problems at this dock as contrasted to other docks included in this study. Dock supervision indicated that the dock had many labor-management problems before the closed circuit television was installed and stated that they felt the television had little effect in either increasing or decreasing this problem.

The use of closed circuit television for security purposes on docks is not generally accepted primarily due to the potential adverse effect on labor-management relations and the initial cost of such installations. There is also considerable controversy concerning the security value to

be realized as a result of such electronic installations. Despite the shortcomings of closed circuit television, it appears to have a place in industrial security. Perhaps rather than installations on dock areas, more bonafide industrial uses of closed circuit television are scanning company parking lots in an effort to protect employee vehicles which are parked in the lots, use at vehicular traffic gates which handle very light traffic flows, scanning of unprotected railroad gates at plant perimeters, and other similar uses. Many applications of closed circuit television on the industrial scene, such as on dock areas, appears to plant employees as a "big brother" spying device and has the potential of creating many strained relations between labor and management. Therefore it is imperative that careful study precede the installation of all closed circuit television systems. Too often industry blindly installs such equipment and later discovers that it does not perform as originally suspected. The installation of closed circuit television has many ramifications, some of which may be detrimental to plant operation. As a result of these many ramifications, it cannot be too strongly emphasized that each proposed installation of closed circuit should be carefully studied and evaluated prior to installation.

XI. CONCLUDING COMMENTS

The factors discussed in this Chapter are not intended to represent an all-inclusive treatment of the miscellaneous factors pertaining to dock security in general. These factors were selected for discussion because of their relative significance in the industry chosen for study in this thesis. Therefore, many of these factors may be especially applicable to this industry and may have limited applicability concerning dock security in other industries.

Although not meriting complete Chapter discussions, each of these factors does merit recognition and brief consideration. Each should be considered when evaluating existing dock security effectiveness at various industrial plants. Certain of these factors obviously have more applicability at some plants than at others, however, all deserve some degree of consideration.

Unfortunately, many of the factors discussed in this Chapter appeared to receive little or no consideration at the plants included in this study. Certain plants demonstrated interest concerning particular factors and relatively no interest regarding other factors. Usually this type of situation could be attributed to the particular plant experiencing security problems in the area in which it exhibited an interest and no known security problem in other areas. No plant was found which exhibited a uniformly high degree of interest in the great majority of these factors.

It appears that one of the major problems involved in establishing a uniformly high degree of improvement in all these factors simultaneously is the fact that such a large number of plant departments are either directly or indirectly influencing these factors. Therefore, progress in the realm of these security factors characteristically proceeds on a piece-meal basis since there is presently no force possessing sufficient strength or interest to assist in coordinating the efforts of the various departments necessary to realize a general improvement in each of these factors.

Since the plant protection department is generally looked upon as the department to which security of the plant's assets is entrusted, the writer proposes that the plant protection department serve as the coordinating force necessary to effect improvement in the various miscellaneous security factors discussed in this Chapter. This is a difficult role and will require a superb effort on the part of all plant protection supervision, especially the director or chief.

It is hoped that the plant protection department will not only serve as the necessary coordinating force among the various plant departments influencing the miscellaneous factors discussed in this Chapter but that it will realize the significant contributions that various plant departments can make to the security function in general. The ultimate goal of this proposal is to achieve cooperation and

coordination on the part of all plant departments in an effort to improve all aspects of industrial security, the various factors affecting dock security included.

CHAPTER XII

CONCLUSIONS, OBSERVATIONS, AND SUGGESTIONS FOR FURTHER RESEARCH

This Chapter includes the final conclusions of the thesis and a discussion of the writer's personal observations which were formulated while performing the research for this thesis. Also included in this Chapter is a section suggesting further research for the improvement of dock security. This Chapter is both designed to provide an appropriate closing section for this thesis and to present observations concerning dock security which may serve as food for thought for other researchers interested in the problem.

After selecting the problem of theft control on docks as a research topic, the writer soon realized that this problem did not readily lend itself to the commonly accepted methods of social science research, i.e., the formulation and the testing of an hypothesis. It was determined that present dock facilities and operations simply do not present situations which lend themselves to the rigorous scientific testing of a hypothesis. Therefore, an alternative research approach to the problem was devised. It was decided to approach the problem of controlling dock thefts from the

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standpoint of attempting to identify and evaluate the significance of certain security factors which were suspected to be most important in controlling dock thefts.

In order to identify and evaluate these factors, the writer had to first locate a group of industrial plants which could serve as a source of data. Eventually, the writer received permission to conduct the proposed study at selected plants of one of the largest companies in the midwest. The plants chosen for study are spread throughout a five state area and were selected on the basis of having a large volume of material flow on their docks, shipping and/or receiving the type of material which has a high potential for misappropriation, and their geographical accessibility to Michigan State University.

The fifteen plants included in this study are felt to be well suited for the purpose of this study because they represent a variety of operations, such as manufacturing, assembling, and service parts warehousing; the size and the construction date of the plants vary considerably; some of the plants are included within a single perimeter fence, others have buildings spread throughout a city each enclosed by its own perimeter fence; shipping and receiving includes a wide variety of material and is transported by both common carrier and company trucks; and material is shipped to and

received from a wide variety of locations, both allied and non-allied.[1]

Since this thesis represents an approach to controlling dock theft which is one of identifying and evaluating various factors which are felt by the writer to be most significant to the problem, the wide variation included in the plants selected for study is advantageous.

Although the plants included in this study are very different in many ways, all plants are members of the same parent company. The parent company exercises control over basic policies and procedures governing the operation of these plants.

After the plants to be included in this study were selected, the investigator was ready to begin collecting the data necessary to identify and evaluate those factors which were felt to be significant in controlling dock thefts.

The data from which to identify and evaluate these factors were drawn from three basic sources: 1) interviews with appropriate company and plant representatives, 2) analysis of various dock theft cases since 1960, and 3) extensive field observation on all docks of the fifteen plants included in this study. The interviewing and field observation at the plant level was primarily conducted in the capacity of a student from Michigan State University

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[1]For definitions of "allied" and "non-allied," see Chapter I.

performing a survey of shipping and receiving procedures. Association with the company plant protection department was known only to high ranking plant officials. This approach was taken so that as little disruption as possible would be created.

The data from these sources were analyzed and conclusions were drawn; the data and inferences based on them indicated that the four factors originally suspected by the writer to be significant in dock theft control are significant, but a number of additional factors were also identified and evaluated. These factors are enumerated in the conclusions section of this Chapter.

The study of fifteen plants is perhaps not enough to arrive at any general conclusions regarding the factors identified and evaluated as being those most significant in dock theft control at other plants of the parent company. The writer also feels that the results of this study are not sufficient to arrive at valid conclusions regarding the factors which may be most significant in controlling dock thefts in other industries or companies. Other studies are necessary before valid conclusions may be drawn regarding the applicability of these factors to other industries or companies.

The reader must also recognize that the fifteen plants chosen for study in this research project may not be representative of the plants included in the parent company

because of certain limitations placed upon the writer, for example accessibility of the plants from the Michigan State University campus. The plants which were included in this study were selected by company plant protection personnel on the basis of the criteria related above.

The purpose of this thesis was to merely identify and evaluate factors which were felt by the writer to be significant in controlling dock thefts. No attempt was made to assign relative "weights" to each individual factor. The research design utilized in this study simply did not lend itself to such an attempt.

I. CONCLUSIONS

Four factors which were suspected by the writer to be most significant concerning the problem of controlling dock thefts were selected for intensive study. Briefly, these four factors concerned the physical arrangement of the dock, the availability of perpetual book inventory figures, existence and effectiveness of personnel security programs regarding dock employees, and the physical handling of material and its corresponding flow of documents.

The data provided as a result of reviewing the literature, analyzing various dock theft case reports, conducting numerous interviews, and performing extensive field observations seem to indicate that these factors are indeed significant factors to be considered when attempting to control

dock thefts. Perhaps, it may be more accurate to conclude that these factors are potentially significant factors for controlling dock theft since most of the plants included in this study generally failed to realize the optimum security potential available in these factors. These failures are especially noted in the factors of physical dock arrangement and personnel security practices.

In addition to the four factors originally suspected to be significant in controlling dock theft, others were also discovered which the writer felt were significant factors in the establishment and maintenance of the proper level of theft control on docks. Among these additional factors are the roles of the dock foreman and the plant protection patrolman if one is assigned to the dock, the relationship between the plant and the various trucking firms which service the plant, and the additional security factors discussed in Chapter XI. These additional factors include the security and accountability of pre-numbered forms; truck sealing procedures; periods of special vulnerability such as lunch periods, dock non-operation hours, and during shift change; intra-plant movement of material; dock housekeeping; dock registers; security of trailer parking areas; location and number of docks; and the use of closed circuit television.

The writer feels that the results of this study indicate that dock theft control encompasses many factors in

addition to those originally suspected. Each factor appears to influence the level of security on a dock to varying degrees.

II. OBSERVATIONS

During the course of performing the research for this thesis certain observations were made by the writer concerning dock security in general. Although not a part of this thesis, these aspects do merit discussion. It is the purpose of this section to relate these general observations.

Managerial complacency. Perhaps the most vivid of these observations is the general attitude of complacency regarding dock thefts among management personnel. This attitude is displayed at almost all levels of management, but seems to be especially prevalent at the dock foreman level. For some strange reason dock thefts are many times thought of as only something that happens to the "other plant." Many foremen indicated that the least of their worries were dock thefts. Many other foremen evaded the issue by rationalizing that "nobody would ever want anything at this dock."

Foremen were observed who knowingly permitted dock employees to by-pass portions of established policy and procedure, especially if such circumvention would result in moving material more quickly. These supervisors did not seem to realize the relationship between the circumvention

of established policy and procedure and the potential for dock thefts.

Unfortunately, it appears that the only thing that can alter this attitude of complacency is a theft of a substantial quantity of material from a dock area of the plant. When this occurs, everyone from the supervisors to the plant manager becomes excited and dock security finally receives some long overdue attention. However, soon the plant forgets about the dock theft and most managerial personnel, especially those not directly affected by the theft, tend to fall back into their original complacency.

Plant protection personnel are also victims of complacency in many instances. All that one has to do is observe most patrolmen inspect trucks as they leave the plant premises and one soon encounters the phenomenon of complacency. At first the patrolman opens all truck cab doors and peers in; after observing nothing in the cabs of many trucks he soon abandons the procedure or at least lessens the frequency of cab inspections. The same general pattern seems to occur regarding the behavior of patrolmen assigned to dock security duty.

Complacency of managerial personnel and plant protection personnel regarding the adequacy of the present level of dock security appears to be a formidable problem to overcome before significant progress in the realm of improving dock security can be achieved. After observing the

highly complacent attitude of such a large number of dock supervisory personnel regarding theft and after observing many of the methods and procedures utilized in the shipping and receiving functions, it is amazing that the plants included in this study have not been victimized by dock thefts more frequently than records indicate. As a result of performing this study it appears that the proverb "most men are basically honest" may have some merit.

Fundamentals of management. Throughout this study considerable circumvention of written policy and procedure was noted in regard to the shipping and receiving functions. As emphasized in Chapter X, the written policy governing the shipping and receiving functions contains many security checkpoints in an attempt to counteract thefts of various types. When certain portions of the written policy and procedure are circumvented, the potential for theft and misappropriation increases accordingly.

One plant auditor emphasized that nearly all dock thefts of which he was aware could be attributed to some type of circumvention of existing shipping and receiving or dock policy. This auditor stated that it was the job of the plant's auditing section to verify that written procedures of all types are applicable to the situation and were being properly implemented, but emphasized that representatives

from the plant's auditing section cannot be present on the docks at all times.[1]

The frequency with which existing dock policies and procedures are circumvented appears to be largely attributable to management itself. It seems that management is not managing as it should be. Perhaps, from the plant manager level of the organizational structure down to the dock foreman level, management needs to put new life in such basic fundamentals of management as explaining how to perform duties, training personnel, checking-up on employees, and taking corrective action if necessary.

All supervisory personnel should explain to their employees exactly how they want written dock policies and procedures performed. This means more than only requesting that the employee read a policies and procedures manual, since he may interpret it incorrectly; explanation means a step-by-step detailed discussion of the policies and procedures and what is expected of the employee regarding their implementation.

Proper training of the employee concerning how to perform the functions required of him is the next fundamental step. This is a critical stage since it is here that the employee must learn the mechanics of his job. Depending upon the specific job, training methods vary.

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[1]Interview with Plant Auditor, Plant #5, June 16, 1965.

Once an employee has received adequate explanation concerning how to carry out his responsibilities and has been properly trained, he is theoretically prepared to perform the job. While on the job it is fundamental that the supervisor check upon the employee's performance periodically to verify that the employee is, in fact, performing the job correctly. If this responsibility is not carried out by the employee's supervisor, unknowing mistakes by the employee may continue and not be discovered until they may be costly and embarassing to the plant. In order to perform this function adequately it is most important that the foreman be present on the dock as much as possible.

Last, but not least, is the fundamental of taking corrective action if it is determined that the employee is not performing the job as written policy and procedure dictates. Corrective action may take the form of further explanation of the function and/or additional training concerning how to perform the function. If it is found that the employee is not suited for the particular type of work assigned to him, the corrective action necessary may be a transfer to another job for which he is better suited. Corrective action can take many forms, the ones mentioned above are but a few.

The writer feels that the present frequency of circumventing written dock policies and procedures is largely due to managerial laxity in carrying out the basic

fundamentals of management related above. The writer hopes that the suspected significance of these basic fundamentals of management for the controlling of dock thefts may soon be realized. The adherence to these fundamentals seems to be one important means to reduce the circumvention of written shipping and receiving policies and other related dock procedures.

Cooperative effort. An observation which was quite obvious to the writer throughout this study is the general lack of cooperation among the various plant departments in an attempt to evaluate and ultimately improve the present level of dock security. As pointed out many times throughout this thesis, many plant departments are either directly or indirectly involved in dock security; however, none seemed to take the initiative to bring all the forces possible to bear on the problem of controlling theft on docks. Each appeared to proceed on a piece-meal basis and consequently the overall level of dock security remained relatively unchanged.

As suggested in the concluding comments section of Chapter XI, perhaps the plant protection department could act as the force to coordinate the efforts of the various departments which may have a significant contribution to make in controlling thefts from dock areas. If a coordinated effort could be achieved, new ideas or methods for providing better dock security may result. The problem of controlling

dock theft appears to be one that could be minimized; however, significant progress toward this goal will take the cooperative efforts of all plant departments. It is precisely this that appears to be lacking at the present time.

The writer feels that it is especially important that any cooperative effort of the sort proposed above include the auditing section of the accounting department. All plant departments which play any role in the security of material on docks must recognize the value of the auditing section's assistance and cooperate fully with it. Auditing sections are sometimes looked upon in an unfavorable light by other plant departments. This may be largely due to their function on the industrial scene. It is the responsibility of the auditing department to police all plant policies and procedures including those of the plant protection department; therefore, their responsibilities sometimes conflict with the desires of operating departments to disregard policies and procedures in favor of performing the job quickly and possibly "with less red tape." Consequently, the presence of an auditing section representative is not always welcomed.

As a result of the somewhat negative attitude toward the auditing section, many plant departments, those closely associated with dock security included, do not fully realize the potential for the improvement of dock theft control procedures available in the activity of the auditing section.

The auditing section has much to offer in the realm of improving dock security if other plant departments willingly seek and lend a listening ear to its recommendations. Instead of discouraging its investigations into dock theft control procedures, it should be welcomed, for its evaluation of present procedures and policies may result in new and improved means of providing more adequate protection against dock thefts.

This brief discussion on the value of the auditing section is not meant to detract from the importance of the cooperation of other plant departments such as the materials management, production control, plant engineering, personnel, and plant protection departments, as well as other departments which have a significant role to play in the proposed plan. If such a cooperative effort could ever become a reality, the writer feels that improvement of dock security would take a great step forward.

Interrelation of factors. Prior to doing research for this thesis the writer suspected that there may be an interrelation between the physical arrangement of facilities most requested for use by truck drivers, dock supervision such as foremen and plant protection patrolmen, and the collusion potential. Although there seems to be a relationship between these factors, this relationship appears to be not as significant as originally suspected.

As a result of this study there seems to be little consistency in the relationship between the physical arrangement of facilities most requested for use by truck drivers and the collusion potential existing at each plant. At some plants where the majority of these facilities are located in the plant, the indicated collusion potential is lower than in plants where a greater percentage of such facilities are located on the dock. In essence, one has considerable diffidulty in establishing a consistent relationship between these two factors.

However, there seems to be a positive relationship between the security role of the dock foreman and the indicated collusion potential in each dock. While performing this study, the writer made a subjective judgment concerning plants at which dock foremen seemed to express the most favorable attitude toward their responsibilities in dock security. As a result of this evaluation by the writer, four plants were selected at which the shipping and receiving foremen especially expressed cognizance of the existing security problems and their role in these problems. As indicated in both Tables 2 and 3, these plants are #5, #10, #11, and #12. The collusion potential percentage figures in Table 3 clearly indicates that three of these four plants indicated a collusion potential considerably below most of the other plants and the average for all plants. The fourth plant (#5) is wholly inconsistent with the other three; it

indicates a collusion potential considerably higher than the other three and somewhat higher than the average for all fifteen plants. There appears to be no explanation for this exception. The dock foremen at plant #10 were evaluated to be generally the most security conscious of all foremen; correspondingly, this plant indicates the lowest collusion potential percentage of all the plants included in this study.

As a result of this study, it seems that dock foremen may have a significant role to play in reducing the collusion between truck drivers and dock employees and perhaps, ultimately in controlling thefts on docks.

Traditionally, it has been thought that plant protection personnel assigned to dock security duty have a significant relationship with the general level of security existing on the dock. Contacts between truck drivers and dock employees for non-business reasons is a part of this general level of dock security for such contacts may lead to collusion and ultimately to theft from the dock. The results of this study indicate that there is very little difference in the collusion potential percentage at plants which use no plant protection personnel on their docks and plants which utilize plant protection personnel to varying degrees. The usually expressed favorable security relationship of using plant protection on docks and thereby reducing the amount of non-business contact between truck drivers and dock employees

did not exist in this study. In fact, there is a 4% higher collusion potential noted at plants which use plant protection personnel on docks as opposed to plants which do not. Therefore, there appears to be no significant relationship between collusion potential percentage whether using plant protection personnel on docks or not using them.

It is necessary to point out that the relationships, or lack of relationship, which were found to exist among some of the factors which are suspected to be influential in controlling dock theft are based upon only one study in one industry. It is desirable that further research be conducted in an effort to verify the interrelationships found in this study.

Level of dock security. As a concluding observation, the writer would like to emphasize that the level of dock security is a very relative phenomenon. It must be recognized that the level of dock security ordinarily represents a compromise between a theoretical, ideal level of security and no security at all.[1] There are many variables which influence the level of dock security which is ultimately chosen between these two extremes. No instances which are represented by the extremes of this continuum were found during the study.

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[1] Interview with Divisional Auditor, Plant #12, May 21, 1965.

It is the responsibility of the plant protection director at each plant to evaluate all the known variables affecting the level of security on each plant dock facility and arrive at what may be considered the optimum level of security for each dock. It is important that this level of dock security be consistent with normal operation at the particular dock. Dock security can soon reach a point of diminishing returns if one is not careful.[1]

In all cases encountered while doing the research for this thesis, the level of dock security represented protection which was somewhat less than ideal protection. Therefore, dock security, as well as other aspects of industrial security, contains an element of calculated risk. It is the opinion of the writer that one of the characteristics of a professional plant protection director is one who is capable of effectively evaluating all the variables influencing dock security and, as a result, accurately determine those docks at which the greatest potential for theft exists and those at which there is less potential and corresponding calculated risks can be taken. This is a difficult task, but should be a goal of all plant protection directors in an attempt to provide a more adequate level of security at the lowest possible cost.

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[1]Interview with Security Chief, Plant #10, May 13, 1965.

IV. SUGGESTIONS FOR FURTHER RESEARCH

The study of methods to control dock thefts represents a significant area for research in light of the great industrial expansion of this decade. The study of this problem may be approached by using many methods. The approach taken in this thesis represents only one approach. It is the purpose of this section to suggest to the reader and potential researcher various approaches which may be taken in further researching the problem of controlling dock thefts.

Since no other research in the realm of dock theft control procedures could be located by the writer, this thesis was designed primarily to identify and evaluate the security significance of particular factors which were suspected to be influential in controlling theft on dock areas. Although it is felt by the writer that this thesis did accomplish that which it was originally designed to accomplish, perhaps similar research projects designed in much the same manner as this study are necessary before the most significant factors which influence dock security may be identified. The writer feels that prior to achieving valid conclusions concerning dock theft control, it is first necessary to understand exactly what factors are involved in the problem being studied. Therefore, in an effort to verify or discount the factors suspected to be most significant as a result of this study, further research designed for this purpose is

felt necessary. Such research projects may also serve to identify other factors which may be felt by the researcher to be significant in controlling dock thefts.

Perhaps another approach may be to select one of the factors suspected by this study as significant in controlling dock thefts, for example personnel security, and investigate this factor in greater depth. If this approach is taken, it may be possible to establish a type of research design which would lend itself more readily to the rigors of social science research which includes the formulation and testing of an hypothesis.

Since one of the primary elements of many dock theft cases is a truck driver, either a company employee or an employee of a common carrier trucking firm, this writer feels it may be beneficial to the industrial security profession to focus the attention of research on truck drivers, especially common carrier drivers. As a suggestion, personnel security programs at selected common carrier trucking firms may be studied and evaluated and their relationship to dock security considered. It may even be possible to conduct some type of research project in joint cooperation with trucking companies and various industrial plants since both are faced with the common problem of dock thefts, industrial plants at each dock facility and trucking companies at the docks of their trucking terminals.

The somewhat nebulous concept of collusion offers an interesting and intriguing area for research. As a result of analyzing various dock theft case reports involving collusion and perhaps interviewing plant and truck driver personnel involved, the researcher may be able to gain a better understanding of the problem of collusion, what seems to cause it, and how best to prevent its occurrence. Such information would be most valuable for the formulation of more adequate measures to control dock thefts.

These suggestions are representative of those which came to the mind of the writer as a result of making this study. There are, no doubt, many other possible research approaches to an area so lacking in research as the realm of dock security; only a questioning mind and a little imagination is needed to discover them.

It is hoped that as a result of reading this thesis, other persons interested in the furtherance of the industrial security profession may be sufficiently motivated to further research the problem of controlling dock thefts. If this thesis kindles such efforts it will have served a worthy purpose.

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APPENDICES

APPENDIX A

INTERVIEW AND FIELD OBSERVATION DATA

COLLECTION FORM[1]

PLANT NUMBER_____
DATES VISITED_____

1. Number of dock facilities within a single industrial complex

2. Location of docks

   A. Plant perimeter
   B. Plant interior

3. Physical separation of shipping and receiving operations

4. Physical separation of rubbish, waste and scrap removal facilities from docks

5. Evaluation of dock housekeeping practices

6. Use of dock registers

   A. Shipping dock
   B. Receiving dock
   C. Shipping/receiving dock

7. Evaluation of physical dock structure

   A. Location of dock office
   B. Location of restrooms, telephones, vending machines
   C. Adequacy of dock floor space
   D. Use of instructional signs
   E. Use of lines of demarcation
   F. Dock lighting facilities

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[1]Interview and Field Observation Data Collection Form utilized when actually collecting data provided a separate sheet for each major subject heading in order to allow sufficient space for note-taking.

8. Percentage of truck drivers appearing on docks who have contact with dock personnel for other than business reasons

9. Use of plant protection personnel on docks

   A. Job description
   B. Rotational pattern
   C. Evaluation of attitude and behavior

10. Dock supervisory personnel

   A. Job description
   B. Role in controlling movement of truck drivers
   C. Attitude toward dock security
   D. Rotational pattern

11. Bonding of dock employees

   A. Salaried personnel
   B. Hourly-rated personnel

12. Personnel security

   A. Police record check
   B. Work history check
   C. Educational background verification
   D. Military service experience
   E. Credit rating
   F. Other

13. Methods of inventory control

   A. Annual physical inventory
   B. Book inventory
   C. Special inventories
   D. Security inventories
   E. Use of electronic data processing equipment for inventory control

14. Inventory shortages

   A. Percentage estimate of shortage due to theft in general
   B. Percentage estimate of theft in general due to dock theft

15. Periods of special security vulnerability

   A. Dock lunch period
   B. Dock non-operating hours security
   C. Dock shift change periods

16. Security of pre-numbered forms

    A. Method of issuing pre-numbered forms
    B. Accountability procedures

17. Truck sealing procedure

    A. Method of issuing seals
    B. Personnel authorized to apply and lock seal
    C. Accountability procedure

18. Shipping procedure

    A. Theoretical aspects
    B. Practical aspects

19. Receiving procedure

    A. Theoretical aspects
    B. Practical aspects

20. General comments regarding dock security at plant number _____

APPENDIX B

DOCK THEFT CASE ANALYSIS FORM

PLANT_____
CASE NUMBER_____
DATE_____

1. PERSONNEL

   A. Hourly-rated
   B. Salaried
   C. Other

2. TIME

   A. Dock operating hours
   B. Dock non-operating hours

3. LOCATION

   A. Shipping dock
   B. Receiving dock
   C. Shipping/receiving dock

4. MODUS OPERANDI

   A. Collusion
   B. Non-collusion
   C. Method of removing material from dock

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