SECURITY FOR FOOD DISTRIBUTION CENTERS

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CONTENTS

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By

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SUMMARY

Crime is becoming a matter of increasing concern to management and tenants of wholesale food distribution centers in major cities throughout the country. The most common crime is theft. This includes theft from firms, vehicles, and railroad cars, as well as theft of the vehicles themselves. Other reported crimes include vandalism and assaults.

This report discusses various security considerations including: location of the food center, design of buildings, lighting, fencing, gates, pedestrian and vehicle controls, railroad and vehicle security, electronic protection systems, and guards.

Recommendations are made relating to each of these considerations. The major recommendations are:

- Food centers should be located in areas that have low crime records.
- Security should be considered by architects or builders in planning a building, so that the building will be easier and less costly to protect after it has been occupied.
- All outdoor areas, particularly loading docks and outer walls, should be well lighted at night. Perimeter lighting should extend beyond the fence. The type and amount of lighting should be determined by people who are knowledgeable in these subjects.
- The perimeter of the food center should be fenced. Generally, a metal chain link fence at least 7 feet high should be used. It should be topped with at least three single strands of barbed wire. Where maximum security is needed, a solid metal fence should be installed.
- Gates should be at least as strong and as high as the fence. Separate gates should be used for pedestrian or vehicle traffic. A gatehouse, equipped with a telephone, should be erected inside the gate and back from the road. Railroad gates should be kept locked and should be at least as secure as the fence.
- Pedestrians should be allowed free access into and out of the food center during operating hours. However, it is best to restrict them to the use of one entrance. After operating hours, gates should be locked so that pedestrians who desire

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to enter or leave must pass by a guard at the gate. In some cases, employee badges or identification cards could be a worthwhile security device.

- In most cases, restrictions need not be placed on incoming vehicles during operating hours. After hours, however, all vehicles that enter or leave the food center should be stopped and their occupants questioned. A log should be kept of all such vehicles to include the time, date, vehicle registration number, description of load, and driver's signature. A vehicle registration system can be very helpful in identifying unauthorized vehicles.
- Thefts from railroad cars can be prevented by replacing the seal on the car with a padlock as soon as the car has been positioned inside the facility.
- Privately owned vehicles should not be allowed to park near or at the shipping platforms. Company trucks should never be allowed to stand unattended with their motors running, or with keys in their ignitions. Compartments of loaded vehicles should not be left unlocked. Kingpin locks should be used to secure unattended trailers. Delivery trucks that arrive after hours should be confined to an enclosed area until the food center opens for business.
- Some type of electronic protection system should be used to secure each building and unit in the food center. A perimeter burglar alarm system that protects all doors and windows will usually suffice. Other, more sophisticated systems can be used also. Before purchasing any such device, those responsible should consult a security specialist.
- The use of guards depends on many factors, particularly the operating hours and procedures of the food center. Most food centers need a guard at the gate after hours and at least one additional guard to patrol the facility either in a car or on foot. Guards should be able to communicate with each other as well as with the local police department. Guards should be carefully selected, trained, and supervised.

INTRODUCTION

The well-publicized increase in crime in urban areas of the United States has been a cause of concern to owners, tenants, and managers of wholesale food distribution centers in major cities throughout this country. When excessive crime occurs, the business suffering the loss must raise its prices to compensate for it. This increase is passed on to the consumer in the form of higher food prices. Inasmuch as the Agricultural Marketing Research Institute of the United States Department of Agriculture has been instrumental in designing many of these food centers, this study was undertaken as a followup to determine what is currently being done to prevent crime, and to recommend ways to minimize losses from crime at these facilities. In addition, this report is intended to assist responsible persons in incorporating proper security measures into the design and operating procedures of proposed food centers.

This report is based in part on information gathered from nine wholesale food distribution centers located in the eastern part of the United States. They ranged in size from 16 to 146 acres, and each housed from 16 to 120 tenants.

The subject matter includes the basic security measures and procedures within the food distribution center, to the exclusion of those security measures and procedures within the individual food firms.

The information relating to the present and proposed security measures and procedures was collected through personal interviews with the managers of the nine food centers studied and, in some instances, with the tenants of these food centers as well. Several security-related companies were consulted also. The recommendations of these companies, along with the personal observations of the author, were incorporated with the information already assembled.

PRESENT PROBLEMS

Managers of the food centers visited reported a variety of security problems encountered during the past 2 years. In some instances, corrective action was taken after the occurrence to prevent the possibility of it happening again. In more than half of the cases reported, the crime could have been easily prevented through the application of some simple precautions.

Theft was the most frequent crime. These thefts included: breaking into firms during the night, removing products from shipping platforms, taking products from vehicles (most of which were unlocked), stealing an entire truck or automobile (many with motors running or keys in the ignition), bringing in a tractor and stealing a loaded trailer, and stealing batteries and gasoline from automobiles and trucks. Several managers indicated that some of the thefts were the result of one firm stealing from another in the same food center. They also suspected that a large number of thefts were committed by employees, either against their employer or another firm.

Vandalism was also reported as a problem, although not as serious or frequent as theft. Vandalism included damage to public restrooms, vending machines, and windows.

Three food centers reported scattered incidents of holdups, muggings, and assaults.

The following sections of this report discuss some of the ways that crimes such as those mentioned above could have been prevented.

SECURITY CONSIDERATIONS

General

Security measures must be selected to meet the individual requirements of each food center. Their selection is based on many factors, the most important of which are: the size of the facility, the operating hours, and the

type of area in which it is located (commercial, rural, residential, high-crime). The wide range of security measures adopted by the food centers studied demonstrates further the variation of their individual requirements.

Figures 1 and 2 illustrate the variation in size of the food centers that were

Figure 1.--A large food distribution center.

studied. Generally, in a large food center such as the one shown in figure 1, there is a need for more security because of the number of vehicles and people who travel into and out of the facility and the large volume of products being handled than there would be in a smaller food center such as the one illustrated in figure 2. The large food center would need more guards than the small one; in addition, it would also benefit from the introduction of vehicle registration and employee identification systems, whereas the small food center would have little use for either system.

Even the best controls are merely preventive in nature, since they only discourage would-be intruders from entering a facility. An intruder with sufficient knowledge and experience can enter practically any facility by eluding the controls.

Controls must conform with local fire, building, insurance, and safety regulations. For instance, it may be desirable from a security standpoint to use a particular type of lock on a door, but that same lock may also violate local fire regulations.

The following recommendations will apply to the majority of food distribution centers. It is doubtful that any one food center would need to implement all

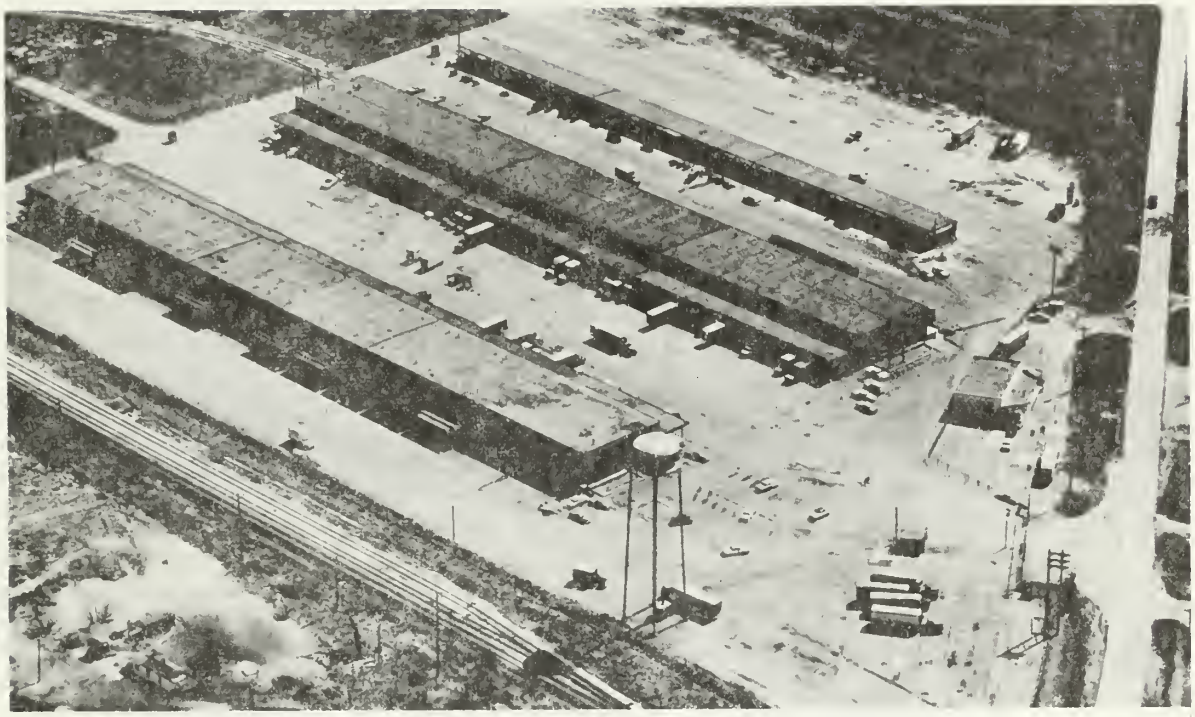

Figure 2.--A small food distribution center.

recommendations. For example, a facility located in a low-crime area that enjoys good protection from the local police may find it unnecessary to erect a fence and gates and to enforce strict entry and exit controls. Another facility, which exercises strict entry and exit controls, and which is well protected by fence, lighting, and security personnel, may find no justification for electronic protection systems.

Location

As expected, the study revealed that those food centers located in high-crime areas had the most security problems. Besides the obvious consequences of locating in such an area, the morale of the employees suffers because they are required to travel through the area, often during hours of darkness, to get to or from their jobs. Furthermore, as in the case of at least one food center, drivers of delivery vehicles are reluctant to service the facility for fear of being robbed or beaten before they reach it. In developing plans for a new food distribution center, it is a good idea to consult the local police department to determine which areas are undesirable for the location of a food center. The risks of locating in a high-crime area may be offset by other factors such as the availability of labor and convenient access to distribution points. The food center that has already been built in an undesirable area usually has no choice but to make every effort to protect itself.

Building Design

In the multiple-occupancy buildings of some of the food centers visited, it was possible to go from one unit into another unit by breaking through a door and without leaving the building. In the absence of burglar alarms, this type of crime, occurring after hours, could go undetected until the following morning. In other food centers, there were many remote, hidden corners on the exterior of buildings. Situations such as these make the facility difficult to protect by providing natural hiding places for someone intent on causing trouble.

Any plan to secure a building or facility should begin with the architect's blueprints. If security is properly considered by architects or builders, then the building will be easier and less costly to protect after it has been occupied. It is during the planning stage that decisions are made as to what type of exterior doors and locks to use; the location of windows, doors, and skylights; and provisions for alarm systems. Unfortunately, in most instances security is given little or no consideration until the building is nearly ready for occupancy.

Lighting

Some food centers visited had less than adequate lighting, particularly on docks. Some were in the process of taking steps to improve their lighting.

Proper night lighting is one of the most effective means of discouraging crime. All outdoor areas, particularly loading docks and outer walls, should be well lighted. Generally, after working hours, the minimum average recommended light level should be 0.1 foot-candle for roadways and parking areas, and 1.0 foot-candle for docks.

Recent studies have shown that for large outdoor areas, high-pressure sodium lamps are more economical than incandescent or mercury lamps. Also, lighting systems using poles in excess of 100 feet in height are proving to be more economical than those using the shorter, more conventional poles.

It is best if security lighting is controlled automatically rather than manually in order to avoid the possibility of someone forgetting to turn on the lights. Lights on docks should be protected by a physical guard, such as wire mesh, to discourage tampering and to prevent breakage. Perimeter lighting should extend beyond the fence. A system of planned maintenance should be established to gain maximum effectiveness from the lighting.

Lighting should be selected by people who are knowledgeable in this field. This type of service is usually available at no charge from lighting contractors and manufacturers.

Fencing

Two food centers evaluated had no fence at all and still had very few problems. However, these centers did employ other means of protection, including lights, burglar alarms, and roving guards. Most food centers had some type of chain link fence, in various states of repair. Wire mesh fences (fig. 3),

Figure 3.--Wire mesh fence.

which offer little or no protection, were found in two food centers. Solid metal fencing (fig. 4) was being installed around one food center to replace a

Figure 4.--Solid metal fence.

chain link fence that had not been providing adequate protection.

With very few exceptions, the entire perimeter of a food center should be fenced. From a security standpoint, a metal chain link fence (fig. 5) offers more protection than a wire mesh fence and is more economical than a solid metal fence. One of its major advantages is that it is easy to observe what is happening on either side of it. Its disadvantages are that it can be cut

Figure 5.--Metal chain link fence.

and that an intruder could climb over it, although not easily. The areas on both sides of the fence should be kept clear of vines, plants, debris, and other materials that might reduce visibility.

The chain link fence should be at least 7 feet high and should be topped with angled bars that project outward at a 40° angle and on which at least three strands of barbed wire should be strung (fig. 5).

The fence fabric should be nine gage or heavier and 2-inch-square mesh or smaller. A savings in cost and an increase in protection will result if the top rail of the fence is omitted. A strong wire should be strung tightly around the lower part of the mesh to discourage crawling under it. For extended life of the fence, it is recommended that the fabric be galvanized or coated with aluminum; also, H-beam line posts (fig. 5) will last longer than the more common tubular posts.

If the situation warrants it, the fence can be anchored to the ground every few feet, or cement aprons can be constructed beneath the fence, or frame piping can be installed along the lower edge of the fence. Any of these methods will help insure that objects or people cannot pass beneath the fence.

In cases where maximum security is needed, a solid metal fence is recommended. This type of fence must usually be custom fabricated and is considerably more expensive than the chain link type.

Gates

Most food centers studied relied on manually operated gates (fig. 6) that were kept open during operating hours. Most had railroad gates that were kept locked. One food center was in the process of replacing its manually operated railroad gate with an electronically operated one, but it is doubtful that most food centers could justify such an expense.

Figure 6.--A manually operated gate.

Except for two food centers that had no fences or gates, the rest had at least one vehicle gate with a gatehouse (fig. 7). Some of these gatehouses

Figure 7.--A vehicle gate with a gatehouse.

were manned only after normal operating hours, while others were manned only for toll collection purposes.

Gates should be at least as strong and as high as the fence. They should be capable of being securely locked either with a chain and padlock or with a deadlocking bolt. Separate gates, controlled either electrically or manually, should be used for pedestrian and vehicle traffic.

It would depend on the particular situation whether gates are left open during operating hours or are opened only to allow passage of vehicles and pedestrians.

If a gatehouse is to be used for security purposes, it should be set back from the road so that vehicles can be stopped and examined. The area around the gatehouse should be kept clear in order to maintain good visibility in all directions. A telephone should be provided for communication between the gatehouse and the firms in the food center.

Railroad gates should be at least as secure as the fence. They should be kept locked at all times except when opened to allow the passage of railroad traffic. They can be either manually or electrically operated, but the former is usually quite satisfactory. The keys to manually operated gates may be kept either by the railroad or by the food center management. When the keys are kept by the railroad, periodic checks should be made to see that the gates are locked, particularly after hours.

Pedestrian Entry and Exit Controls

The food centers studied used a variety of controls for pedestrians. None of them restricted pedestrians during regular hours. All of them imposed some sort of restrictions after hours. One food center was in the process of installing an electronic system that would permit entry only to individuals who had inserted the proper identification card into a machine. This machine, however, would have no way of differentiating between a validly used card and a stolen one. Much more sophisticated systems are available, but their suitability for food center applications may be questioned because they are elaborate and expensive.

Except in cases where maximum security is required, pedestrians should be allowed free access into and out of the food center during operating hours. However, it may be desirable to restrict them to the use of one entrance so that they can be screened by a guard upon entering and leaving the facility.

After operating hours, all gates should be locked so that any pedestrians who desire to enter or leave must first register with a guard, who is usually stationed at the main entry gate.

For some food centers, employee badges or identification cards could be a worthwhile security device. This means of identification can be used by security guards in order to determine whether to admit a person after normal operating hours. The guard should keep a list of all current employees, together with the firms for which they work and the employees' working hours, in order to determine whether an individual should be admitted. In addition, a log should be kept of all persons entering and leaving the premises after hours.

Owners and managers of firms could be given a different colored identification badge to enable them to enter or exit at any time without specific justification. To prevent misuse of identification, it is desirable to recover the identification badge from employees when they terminate employment in the food center. In any event, guards should be provided with a current list of invalid cards or badges.

Vehicle Entry and Exit Controls

During operating hours, most food centers studied placed no restrictions on vehicles entering or leaving, except in those instances where entering vehicles were required to pay a gate fee. After hours, however, most of them required that every vehicle entering or leaving be stopped and the occupants questioned. If moving the vehicle were justified, then permission was given to proceed. In two of the food centers, vehicles could enter or leave the facility at any time, since there were no fences or gates, but once inside, the occupants were subject to questioning by security guards or police who had the authority to order them to leave.

Three food centers studied used a vehicle registration system. The managers found that this type of system was extremely helpful to the guards at the entrance gate in determining which vehicles should be allowed entry into the facility or exit from it after normal operating hours. It also helped toll collectors to identify toll-exempt vehicles.

During operating hours, it is usually not necessary to stop incoming vehicles except in cases that demand unusually tight security. After hours, however, all vehicles that enter or leave the food center should be stopped and their loads inspected. Loaded vehicles should not be permitted to leave unless the guard has been notified of their movement in advance or he has phoned the responsible firm and received approval to release the vehicle. In addition, a log should be kept of all vehicles that enter or leave the facility. The log should include time, date, vehicle registration number, description of load, and driver's signature.

In many cases, it is worthwhile to require registration of vehicles. This involves issuing identification stickers to be placed on the vehicles and maintaining a list of vehicles by owner, tag number, and classification. Vehicles can be assigned different colored stickers to denote their classification: employee, manager, farmer, supplier. Vehicle registration enables a guard to readily determine whether a vehicle should be admitted into the food center after hours. It also assists in identifying illegally parked vehicles and those that may arouse suspicion from a security standpoint. The list of registered vehicles must be kept current, and every effort should be made to recover stickers from vehicles no longer authorized to carry them.

Railroad Security

Some food centers experienced problems with thefts from railroad cars. In the majority of these cases, the thefts resulted from someone breaking the seal (fig. 8) and opening the car door. The reason for thefts like these is that some food centers were lax about securing incoming cars. Very often, seals were not removed, and cars were not locked until a day after the car's arrival.

Most thefts, such as those mentioned above, can be easily prevented. As soon as a railroad car is positioned inside the facility, the seal should be examined, removed, and replaced with a strong padlock (fig. 9).

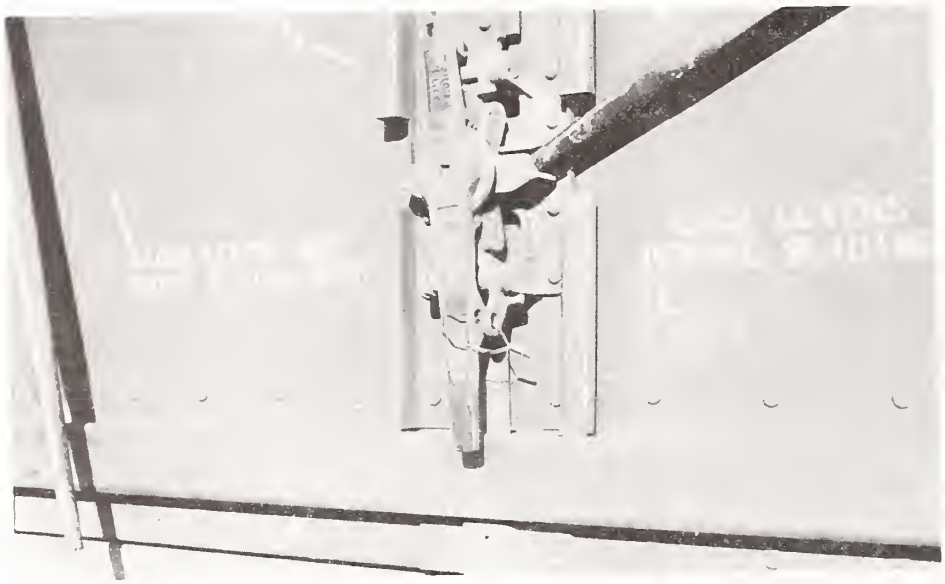

Figure 8.--A rail car door secured by a seal.

Figure 9.--A rail car door secured by a padlock.

Vehicle Security

Proper security control of vehicles can contribute greatly to a reduction in crime in the food center. Most thefts reported by food center managers involved the loss of products from vehicles, the theft of the vehicles themselves, or the use of a vehicle to haul away stolen merchandise. In addition to the entry and exit controls discussed earlier, there are several other steps that can be taken to reduce this type of crime.

Privately owned vehicles should not be allowed to park near or at the shipping platforms. This makes it more difficult for a thief to steal merchandise from the platform or from a truck parked at the platform and then carry the merchandise to his car.

Trucks that belong to a firm should never be allowed to stand unattended with their motors running or with keys in their ignitions. It is also recommended that drivers of delivery trucks exercise the same precautions. Compartments of loaded vehicles should always be kept locked, except when being loaded or unloaded. As discussed earlier, many thefts could have been avoided had these simple precautions been taken.

Occasionally, it is necessary to park a tractor-trailer at or nearby the platform and then remove the tractor. When this has been done, the trailer should be secured by placing a lock over the kingpin (fig. 10). This will dis-

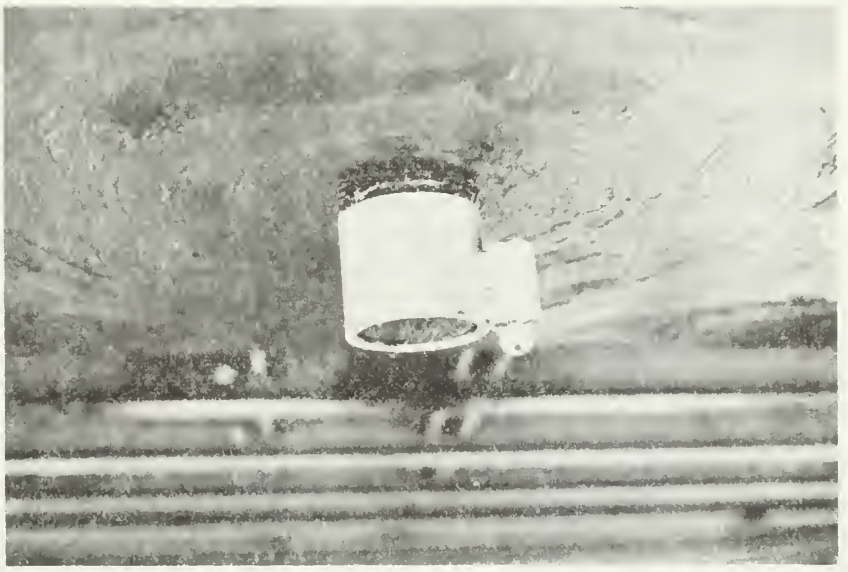

Figure 10.--A fifth-wheel lock.

courage an unauthorized tractor driver from hooking up the trailer to his tractor and hauling it away. Special locks, sometimes called fifth-wheel locks, are available to prevent this from occurring. They are inexpensive and can be installed in seconds.

In some food centers, it is the policy to admit over-the-road delivery trucks, even after hours. When this is done, the trucks should be directed to a fenced-in area that is closed off from the rest of the facility. The trucks should be confined to this area until the facility has opened for business. The same procedure can be used for truck farmers who are authorized to conduct business in the facility.

Electronic Protection Systems

There is a broad range of electronic security devices available for use in a food distribution center. About half of the food centers studied used no such

devices. In the others, some tenants had purchased burglar alarms. These alarms were mostly the perimeter type, although a few were photoelectric. Most frequently, they were connected to the burglar alarm company, but a few were linked to the local police department or to the food center's guard station.

There is no one alarm or protection system that can be used for all food centers. The type of system selected would depend on many factors, the most obvious one being the degree of security desired. This discussion is not intended to detail all possible systems, since many of them would not be feasible for food center application.

Nevertheless, there are a few systems that would be very effective and that can be installed at a reasonable cost. The one most common and also applicable to most food distribution centers is the perimeter burglar alarm system. This system protects the perimeter of a building by means of a magnetic tape fastened on all windows and electronic contacts on all doors and windows that open. When the tape has been broken or when a set of contacts has been separated, a circuit is broken and an alarm is activated.

There are other types of systems such as those classified as space alarms. These can be used alone or in conjunction with a perimeter system. One type of space alarm is the photoelectric device. It consists of a light that is beamed at a receiving cell that is usually located on the other side of a door or space. When the light beam has been broken, an alarm is sounded either locally or at a remote station. Other, more expensive space alarms can detect any movement on the premises through the use of sound waves or radar waves.

When any of the above devices activates an alarm, this signal must be transmitted to someone who will respond to it. This can be done in several different ways. One is sounding an audible alarm locally outside the building to alert anyone nearby. Another is silently signaling a remote central station such as the guard's office inside the food center, a private protection service outside the food center, the local police department, or a combination of these. In most cases, signaling the food center guard's office is preferable, because the local audible alarm will alert the criminal first and give him sufficient time to escape. Furthermore, a guard can arrive at the scene of the crime faster than the local police or personnel from a private protection service.

In order for a central station system to be effective, the guard's office must know the regular opening and closing hours of each firm, as well as the people authorized to open or close the premises. Also, if the firm is to be opened or closed at other than regular hours, then the guard's office must be notified by one of the authorized employees prior to the opening. This procedure will help to prevent false alarms that are often the source of numerous problems and inconveniences.

An electronic protection system can easily be designed to include additional features such as smoke and fire sensors and refrigeration sensors. Considerable savings in annual ownership and operating costs can result if the system for the entire food center is purchased and installed as a complete package. By doing this, maximum effectiveness will also be achieved.

Before purchasing any such device, management should consult a firm that specializes in providing industrial security services. This type of firm can provide valuable assistance in selecting the right system for a particular job.

Guards

Properly supervised and trained, guards can reduce crime sharply both from inside and outside the food center, as well as provide employees with an increased sense of security. They also can offer additional services such as reporting fires and refrigeration failures.

With the exception of one food center, all those studied employed guards in some way. In two food centers, guards were supplied by a contract guard service. One food center was furnished guards from the local police department. The rest hired their own guards.

At one food center, some tenants believed that they needed more guard protection than was being provided, so they hired a contract guard service to furnish full-time protection. This service provided its clients with an armed guard 7 days a week, 24 hours a day. This guard drove around in an automobile, occasionally getting out to check the security of a building or a railroad car belonging to his clients.

One food center owned four radio-equipped police cars for the use of its guards. In some of the other facilities, the guards drove their own cars when necessary. A few of these autos were radio-equipped so that the guards could communicate with the local police or with the guard at the main gate. Most guards were armed. Some were deputized and had police authority.

Four food centers had at least one guard on duty at all times. Four more utilized guards only during certain hours. In most cases, a guard was stationed at the gatehouse after hours. He was usually responsible for controlling all vehicle and pedestrian movement into and out of the facility. In those facilities where there was only one guard, it was usually this man's responsibility to leave his post at the gate at various times and patrol the facility either in a car or on foot. When there was more than one guard on duty, then the first usually stayed at the gate and the others patrolled the facility either in a car or on foot.

As suggested earlier in this report, it would be impossible to arrive at one set of recommendations for guard services. The number of guards and the hours they work will depend on the operating hours and procedures of the food center.

If any vehicles are allowed to enter or exit a food center after hours, then one guard must be stationed at the main gate and at least one other guard should patrol the facility. If the facility is completely closed to traffic after hours, then the guard at the gate can be omitted. Generally, if guards are used at night, there should be at least two of them. They should be in contact with each other by two-way radio or walkie-talkies.

If deemed necessary, one or more guards can be used during operating hours. Again, this would depend on the size of the facility, the need for protection, and the degree of protection furnished by the local police.

The duties of the guard at the gate should include giving directions to people and screening vehicles that are entering or leaving the facility. In some instances, he also may perform toll collection duties. After hours, he should control closely all vehicles entering and leaving the facility and maintain appropriate records.

Patrol or roving guards should be responsible for investigating any suspicious or unusual person, vehicle, or condition, and also for reporting fires, safety hazards, and security violations to the proper authorites. After hours, these guards should check all exterior doors, windows, gates, and railroad cars to assure that they have been locked. A patrolling guard should not use the same route or the same time schedule for his tour. If he does, then his actions may become so routine that a potential thief can avoid the guard by timing his own actions accordingly.

In order for guards to be most effective, they must be carefully selected, trained, and supervised. It is very easy for a guard to neglect his duties as soon as his supervisors leave the premises. Poorly supervised guards can be tempted to break the law, and they have a better chance of succeeding than a stranger. This underlines the need for supervision.

The watchman's clock is one device that can be used to assure that the guard is fulfilling his duties. The guard carries this clock with him while he tours the facility. Key stations are mounted at strategic locations around the facility, and when the guard reaches each of these stations, he punches his clock with the key. This causes the clock to record on an internal tape the time and location of each stop each time the clock is punched. When the guard turns in his clock at the end of his shift, the tape is removed. This tape serves as a record of the guard's tour.

There are other, more sophisticated systems available for guard supervision. One such system is connected to a central station that is manned 24 hours a day. When a guard reaches one of the security stations (similar to a clock station), he inserts a key that sends an electronic signal to the central station. If this signal is not received within a prescribed time, then the central station immediately initiates an investigation. The system can also be installed so that the guards can silently signal for assistance at any time. This type of system provides continual guard supervision and protection as opposed to the conventional clock system, which provides delayed supervision and no protection.

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