

VANDALISM AND PASSENGER SECURITY IN THE TRANSIT INDUSTRY

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This paper summarizes the goals and objectives of an Urban Mass Transportation Administration project designed to measure the scope of transit-related vandalism and crime in terms of its characteristics and costs. The discussion includes all current efforts to reduce vandalism, passenger harassment, and crime in terms of vandal-resistant materials and equipment; community, social, and educational programs; and deterrent, protection, surveillance, and apprehension systems. The paper also discusses problems of institutional cooperation and conflict as well as current and planned demonstration projects designed to measure the effectiveness and costs of particular procedures and techniques for deterring vandalism and crime.

•IN THE FALL of 1970, the Urban Mass Transportation Administrator suggested to both the American Transit Association and the Institute for Rapid Transit that a study be undertaken concerning the cost and forms of transit vandalism and the problems associated with passenger harassment.

The American Transit Association and the Institute for Rapid Transit both had committees to consider the problems of vandalism and passenger security but formed a joint Vandalism and Passenger Security Committee and through the American Transit Association submitted to UMTA a proposal that had the following purposes:

1. To ascertain and categorize the scope, severity, dollar costs, and characteristics of the vandalism and passenger security problem;
2. To summarize and evaluate types of antivandalism and passenger security campaigns, procedures, techniques, and devices;
3. To summarize the types and nature of vandal-resistant transit vehicle equipment and materials;
4. To summarize the types and nature of design modifications for transit stationary site facilities and to improve passenger security and reduce vandalism;
5. To compare the concept of public versus private police protection for transit vehicles and stationary facilities;
6. To conduct a number of demonstration projects; and
7. To draw conclusions from the demonstration projects and to furnish detailed recommended courses of action to combat the major forms of vandalism and to improve passenger security, including a carefully worked out set of proposed experimental project activities, methods, measurements, and projected possible results.

The Urban Mass Transportation Administration agreed to fund this project in June 1971.

GOALS AND OBJECTIVES

The Vandalism and Passenger Security (VAPS) project has 2 basic goals. The first is to determine the national scope of transit crime and vandalism. This task includes the development of statistics that will measure the components of the various types of

crime, vandalism, and passenger harassment. It also includes the development of statistical measures that relate crime and vandalism to a variety of transit operational parameters such as 100,000 passengers served, 100,000 vehicle-miles operated, and percentage of total operational costs.

The second goal is to examine what can be done to control the problems of crime, vandalism, and passenger harassment and to make specific recommendations on the basis of this research. That goal is being fulfilled by a dual research process. First, we are examining what transit systems are currently doing to control crime and vandalism, and, second, we are attempting to determine which strategies are particularly effective.

Objectives, or major tasks of this study, are as follows:

1. Ascertain the scope, severity, dollar costs, and characteristics of the vandalism and passenger security problem;
2. Summarize the types and nature of antivandalism and passenger security campaigns and indicate any measures of effectiveness;
3. Summarize the types and nature of vandal-resistant transit vehicle equipment in areas where additional materials research is likely to be most beneficial;
4. Summarize the types and nature of design modifications for transit stationary-site improvements for passenger security and vandalism control;
5. Compare the concept of public versus private police protection for transit vehicles and stationary equipment as well as other institutional areas of cooperation and conflict;
6. Examine public attitudes toward vandalism and crime;
7. Visit transit systems to conduct in-depth interviews of pertinent personnel concerning all of the project tasks;
8. Prepare demonstration projects in cooperation with participating transit systems in order to consider alternative means of controlling or preventing vandalism and passenger harassment;
9. Furnish detailed recommended courses of action to combat the major forms of vandalism and to improve passenger security, including carefully worked-out experimental project activities, methods, measurements, and projected possible results; and
10. Prepare, publish, and distribute a final report.

CONCLUSIONS

Transit system efforts to control vandalism consist of programs that include some or all of the following:

1. Concerned municipal government or citizens' groups that try to coordinate efforts of municipal leaders and representatives of the schools, police, courts, parents' associations, and news media to stop vandalism and passenger problems within their communities;
2. Juvenile and municipal court systems that stress firmness and administer punishments (rather than warnings);
3. Local news media that publicize the decision to "crack down" on vandalism and passenger harassment but at the same time avoid glamorizing or giving sensational coverage to acts of vandalism and passenger harassment;
4. Transit systems that are willing and able to assist the police and the courts and also to conduct extensive cleanup campaigns to help eliminate broken glass, cut seats, graffiti, and other evidence of past vandalism; and
5. School systems that cooperate with the police, courts, and parents' associations in helping to promote a healthy relation with school children and cooperation in preventing vandalism and apprehending violators.

The problem of transit crime is entirely distinct from that of vandalism. Community relations or rapport-building activities are unlikely to deter criminals from using transit vehicles or stationary sites as the scenes of crimes. Efficient and cost-effective means of deterrence, surveillance, and apprehension (as discussed further in another section of this report) have been found effective to some extent. In this connection, the "crime

transfer" phenomenon is noteworthy. This is to say that, although increased security measures applied to a particular site, route, or time period can result in lower levels of crime, the criminal activity may well "transfer" to different sites, routes, or time periods.

A specific incident of savage, senseless crime at a transit site or in a transit vehicle presumably will reduce transit patronage on that route or in that area for a period of time. However, the typical transit user (even in areas where there is a relatively high incidence of transit crime, vandalism, and passenger harassment) is likely to consider frequency of service, convenience of routes, and fare level more important than his personal security when considering the use of transit.

SCOPE OF TRANSIT VANDALISM AND CRIME

Vandalism

Transit vandalism is currently a multi-million-dollar problem. The estimated national transit vandalism bill was approximately \$9,000,000 for 1970 and was at least \$500,000 more for 1971. The rise might have been even higher had not the transit systems made a diligent effort to control vandalism.

Actually these cost estimates undervalue the real costs of vandalism because they measure only the costs of labor and material for vandalism repairs. The costs of lost trips due to fear of being harassed or hit by a stone or to displeasure with the physical appearance of a vandal-plagued bus remain at this time unmeasured. So too do the costs of transit management's time and effort devoted to combat this problem. Moreover, the costs of transit police forces and of municipal police are not included in this estimate.

The problem of vandalism costs appears less severe when calculated as a percentage of system operating expenses. In 1970 no transit system showed vandalism costs of more than 1 percent of operating expenses. The national average was 0.4 percent.

Crime

Robberies of bus drivers were a major crime problem in the late 1960's, but the adoption of exact-fare plans by most large- and medium-sized transit systems has reduced that problem substantially. However, other types of transit crime directed at both transit personnel and passengers still continue.

In comparison with overall urban area crime rates, transit crime occurs relatively infrequently. Approximately 7,200 violent transit crimes occurred in the United States in 1970; the total number of national violent crimes was more than 731,000. Violent crimes include criminal homicide, forcible rape, robbery, and aggravated assault. Criminal homicide and rape together account for less than 1 percent of this total. The most common form of transit violent crime continues to be robbery; aggravated assault runs a very distant second. In terms of passengers and vehicle-miles, on a national level in 1970, 1 violent transit crime occurred for every 8,238,472 revenue passengers served and for every 2,615,417 vehicle-miles operated.

Even in the cities having the highest transit crime totals, the degree of transit security is still quite impressive. In some cases the crime per passengers and crime per vehicle-mile figures are close to the national averages just mentioned.

Other types of transit crime, which includes acts such as larceny, simple assaults, and disorderly conduct, are more frequent than violent crime and are approximately 4 to 6 times as likely to occur. (However, the number of those offenses associated with transit is small when compared with the total frequency in a typical metropolitan area.) In all cases analyzed in the VAPS study, transit crime was less than 1 percent of urban area minor crime for all categories.

Statistics

The final VAPS report will include a statistical analysis of the categories and nature of transit vandalism and crime, the costs, and the incidents.

Bibliography

The VAPS project will also include a comprehensive and partly annotated bibliography arranged in categories such as vandalism, crime, law enforcement, new equipment, and human factors. As of this writing, more than 80 articles on vandalism and 230 articles on all VAPS aspects have been annotated.

VANDAL-RESISTANT MATERIALS AND EQUIPMENT

Glazing

Glass breakage in transit vehicles accounts for 50 to 75 percent of transit vandalism costs. To cope with the glass breakage problem, manufacturers have conducted intensive efforts to develop acceptable glass substitutes. Plexiglass, the first to be developed, has great strength and clarity but is relatively soft and prone to surface scratches from washer brushes. Recently General Electric has developed Lexan MR-4000 and Rohm and Haas has made an acrylic plastic that, when coated with a Dupont product called Abcite, have proved acceptable substitutes for safety glass.

The Abcite-coated acrylic is currently under test on approximately 45 transit systems and is being used in rail cars. Although more expensive than laminated safety glass, it is said to be approximately 15 times more break resistant. Abcite-coated acrylic meets, under laboratory test, the standards established by American Standard Safety Code for Safety Glazing Materials for Motor Vehicles Operating on Land Highways, Z26.1, which in turn is specified by Federal Motor Vehicle Safety Standard 205.

Lexan MR-4000, a coated polycarbonate material, also meets all test standards of Safety Code Z26.1 under laboratory testing. It is more expensive than safety glass or coated acrylic but is approximately 200 times more break resistant than safety glass and, in fact, has come through laboratory tests in which a metal monster is hurled against $\frac{3}{8}$ -in. Lexan MR-4000 sheets without breakage.

The recognized standard for motor vehicle safety glazing is Safety Code Z26.1. That standard is also used by the National Highway Traffic Safety Administration of the U. S. Department of Transportation in establishing the safety glazing requirements for all buses sold in the United States.

Until 1972 there was a question within the transit industry as to the legality of using either Lexan or an acrylic in bus windows because Z26.1 did not specifically permit them. One question concerned the meaning of "readily removable." A firm definition of these words was published in the Federal Register (Vol. 37, No. 120, Wed., June 21, 1972, pp. 12238-12239):

SF 1.1.4 The phrase "readily removable" windows as defined in ANSZ26, for the purposes of this standard, in buses having a GVWR and more than 10,000 pounds, shall include pushout windows and windows mounted in emergency exits that can be manually pushed out of their location in the vehicle without the use of tools regardless of whether such windows remain hinged at one side to the vehicle.

Thus, Lexan and acrylic plastic can be used everywhere in transit vehicles except in the front windshields and in windows to the immediate left and right of the driver.

Seats

Many transit systems have begun to switch to fiber-glass seats in transit coaches in order to reduce or eliminate the cost of upholstery repair. San Francisco Municipal Railway, for example, has begun using fiber-glass seating in all areas behind the rear exit doors because almost all damage to seating occurs in the rear of the bus where the driver's view is limited.

But even fiber-glass seats have not been immune to vandal attack. Because these contoured seats collect water from dripping-wet raincoats, some transit systems have drilled holes in the seats to let the water drain through. Vandals have found it challenging to chip with knives at the drain holes.

The American Seating Company is marketing a new seat of cast nylon that has a "warmer" look and is claimed to be more resistant to damage than fiber glass. The Detroit Street Railway and the Baltimore MTA are among those now testing the cast-nylon seats.

Many transit systems would prefer to keep using upholstered seats for maximum passenger comfort. The Craftex Company has produced a new type of rip-resistant fabric that can be punctured with a knife but is extremely difficult to tear. This fabric is currently being used in 1 PATCO rail car and in 3 Cleveland Transit System rapid transit cars. Both systems report satisfactory results from their use so far. AC Transit in Oakland, California, is ordering Craftex fabric for seats in some of its new buses.

Graffiti

The problem of removing graffiti has become a serious one in many urban centers. In Philadelphia, which has been called by some newspapers the Graffiti Capital of the United States, the general superintendent of rolling stock and garages for SEPTA has disclosed that in 1971 graffiti removal cost \$98,880. Just 30 months ago, there were only a few graffiti writers in Philadelphia. Unfortunately, the magazine section of a prominent paper carried a sympathetic front page picture story that had the effect of making graffiti artists "folk heroes" in Philadelphia. A massive graffiti fad developed, and, according to some estimates, more than 5,000 practicing graffiti writers were defacing city and private property by late 1971.

This "artistry" occurs in the rear of buses and is costly to remove. Many types of markings on upholstery penetrate the vinyl cover all the way down to the cloth backing. Often this requires either replacement of the upholstery or repainting of the vinyl fabric.

The VAPS staff considers that several factors contribute to the impulse to deface transit vehicles with graffiti:

1. The good odds for anonymity in large cities as far as the Establishment (police, school, and parents) are concerned;
2. The opportunity to have "exposure" among one's peer group and to make one's nickname famous (in Philadelphia some prominent nicknames have been Cornbread, Cool Clam, and Cool Earl);
3. The scarcity of transit system or municipal police, or their inability to apprehend the vandals;
4. The leniently inclined court system whose tendency to issue warnings rather than punish offenders has negated police enthusiasm for apprehending vandals;
5. An apathetic public;
6. News media that give exposure and glamor to vandals; and
7. The inability to quickly remove graffiti from vehicles or stationary sites of transit systems.

The following actions have been found helpful in deterring vandalism:

1. Coordination by citizens' groups of efforts of representatives of schools, the police, the courts, parents' associations, municipal government, and the news media to deter antisocial activities within their communities;
2. Fair trial and due punishment of vandals;
3. Prompt and complete cleanup of all graffiti;
4. Encouragement of transit system and municipal police to apprehend violators;
5. Denunciation of vandalism activity by municipal officials;
6. Impartial administration of justice by the juvenile court system, including fines and assignments to violators to help in clean-up work; and
7. Cooperation by the school system with transit and municipal police in apprehending vandals.

Interior Panels of Transit Vehicles—A VAPS demonstration project is currently under way to help solve the graffiti problem. We currently have acrylic side bus panels, manufactured by Swedlow, Inc. of Garden Grove, California, installed in the rear of 5

Metro buses in the District of Columbia. These buses are in regular service on one of the most graffiti-prone routes.

Graffiti Solvent Study—To obtain information on the types of solvents and cleaners and the cleaning procedures that the transit industry uses, a questionnaire was sent to all transit systems. A summary of these data has been returned to all transit systems so that they may more effectively experiment with products and techniques used by others.

In addition, the VAPS staff is working with the manufacturers of indelible felt-tip pens via their trade association, the Writing Instruments Manufacturers' Association. Its test standardization committee is preparing a set of recommendations concerning the best methods for removing the various types of ink markings.

Wall Protection at Stationary Sites

We are also concerned with wall-coating developments that can aid in graffiti removal. One such product is Hydron 300, which is being tested on wall surfaces at subway sites at both SEPTA and NYCTA.

COMMUNITY, SOCIAL, AND EDUCATION PROGRAMS

School Programs

Transit systems are conducting public relations and rapport-building programs in a number of cities. Some of those programs rely not only on presentations but also on channels of communication that continue between the Establishment and the students.

Charles Gaston, a black transit supervisor with the Seattle Transit System, gives slide shows and talk presentations to local junior and senior high schools. Before each talk, Mr. Gaston visits the school site to chat with students as they board buses in the afternoon and to find out whether they have any particular complaints. He uses these occasions to photograph the students in their own environment and during the presentations uses the photographs to attract the students' attention. The students recognize their friends and begin to realize that the Establishment is really interested in them. After any serious transit incident, Mr. Gaston promptly visits the site, talks with the students if possible, and follows up with the school vice principal. Often he finds out the names of the offenders and contacts their parents to request that they reimburse the transit system for the damage incurred.

Al C. Brasill, chief supervisor of the Atlanta Transit System, provides liaison between the transit system and Atlanta's elementary, junior, and senior high schools. He has built up an excellent working knowledge of not just the names of the principals, vice principals, and others at those schools but their personalities and their abilities to exercise discipline and control over their students.

Mr. Brasill calls on school officials in late July or August of each year and discusses shifts in student enrollment, additional busing needs, school bus routes, and problems relating to the transportation and conduct of students for the coming school year. He welcomes opportunities to present lecture programs to students. He discusses vandalism and other problems with new bus drivers of the Atlanta Transit System during their training period, including matters such as handling of drunks, unruly students, and fare evaders.

The Port Authority Transit Corporation has recently completed a series of educational presentations given in the public schools of Camden, New Jersey, and other suburban communities along the system's right-of-way as part of an attempt to cope with a series of train stonings. Extensive vandalism has not been a serious problem to the system, but stonings of the rail cars have been. According to J. J. McBride, chief of PATCO's police department, about 40 percent of the incidents are in "nice" neighborhoods. The areas where stonings occur are those that offer easy access to the right-of-way, have a good supply of ammunition (rocks and bottles), and have convenient escape routes. The core of PATCO's educational presentation is a talk given to the students by Mr. McBride. First, the personal safety of the youngster is stressed. It is pointed out that PATCO's right-of-way is a very hazardous place. Second, Mr. McBride

points out the potential for injury to PATCO passengers from stonings, passengers who could well be students themselves, their friends, or members of their families. The PATCO presentations in public schools, which began on March 10, 1971, and continued to May 5, involved a total of 35 schools and 10,681 pupils. PATCO experienced 28 stonings in March and only 13 in April. PATCO officials think that the decrease can be attributed to the combined effects of the school presentations and increased police patrols at likely stoning sites.

School Bus Monitors

Because vandalism on AB&W buses serving Alexandria, Virginia, climbed from \$3,110 in 1969 to \$7,963 in 1971, Alexandria school board officials and AB&W officials installed 15 school monitors to ride buses to and from school with students each day on routes suggested by AB&W officials. The monitors observe the boarding and discharging from the bus as well as the conduct of the students during the trip. The monitors are predominately male (22 out of 37) and are paid \$3.75/hour. Any difficulty on a bus is reported directly to the principal of the school serviced by that bus. The bus driver, therefore, is not called on to discipline the riders.

School Bus Passes

In Baltimore during the fall of 1969, free bus transportation (on MTA buses) was given to any school child living more than a mile from his school. In addition, a free-choice policy permits each student to attend any school in the city he desires. Therefore, the school board issued passes that were valid all day, and no control was placed on student movements. Groups of students chose to play hooky and ride the bus all day, and such groups often became rowdy and harassed passengers. The passes were then discontinued at the end of the school term in June 1970 and replaced by tickets that were valid for a month and in a different color each month. The back of the ticket books had an identification card bearing a serial number that was also on all tickets in the book. Bus drivers could demand to see the ID card if they suspected that tickets were stolen.

Also in Baltimore the Almagamated Transit Union (representing the 1,300 MTA drivers) agreed to cooperate and support a "get-tough" program to reduce vandalism. Included in the proposed program was the request that the board of education revoke for the full school year the free bus transportation for students involved in any vandalism and suspend from school those involved in transit incidents. Community leaders also agreed to support a "tough" policy by judges. Thus encouraged, some judges handed out stiff sentences to vandals instead of mere warnings.

Results were swift. An editorial in the Baltimore Evening Sun on May 21, 1970, said, "The word got around quickly, particularly after a few arrests showed that the police meant business. From as many as nine incidents a day, the rate has dropped to only two or three a week." In one case, an entire busload of 52 students (mostly girls from 14 to 17) was arrested and held for juvenile court.

This hard-nosed, antivandalism program was successful. Joseph B. Garvey, resident manager for the Urban Mass Transit Administration in Baltimore, said that as of March 1970 vandalism on MTA buses was down 46 percent and arrests were up 145 percent compared to the same period a year earlier. He reported that arrests for vandalism and assaults on MTA buses rose to 34 per week in May 1970. There was only 1 per week before the antivandalism program started.

Graffiti Alternatives Workshop

The Graffiti Alternatives Workshop of Philadelphia was organized in 1971 by Sandy Rubin. The workshop received support from the University of Pennsylvania and the Philadelphia Art Museum; SEPTA donated one of its buses. The original group of youths who were the creators of the graffiti fad in 1970 numbered no more than 25. At least two theories have been advanced to explain their behavior. First, they may have been marking out "turf" (part of a city considered to be its own by a teen gang). Second, they may have been attempting to gain status and recognition within their peer

groups. Both reasons have been verified in interviews with the most famous graffitiers in the city.

An article on graffiti and its "creators," which appeared in a local Philadelphia paper in May 1971, portrayed the errant youngsters as personalities akin to folk heroes. That publicity seemed to reinforce the already growing fad, and graffiti became an epidemic. Many other youths sought to copy the "heroes" with their own scrawls. In a number of cases, youths admitted they were trying to borrow glory from the "big names" by producing a copy of the famous writer's name and writing their own names next to the copy.

In an interview, Sandy Rubin suggested several reasons why the involved youths selected the transit system as a prime target. The transit system is public, and, if the goal is to have one's "mark" seen, a transit station or vehicle is a prime location. The youths admitted that they knew they were doing something wrong but felt SEPTA was a "fat cat" that could well afford the expense of cleaning. In addition, the act of scoring a "hit" (term used for producing one's mark) was viewed as a chance to strike "the man" (term used by minority youths to describe the white businessmen seen dominating the city).

In Philadelphia, graffiti are largely confined to names or symbols. Political graffiti and profanity are uncommon. Many of the names have been formed into intricate and unusual designs and painstakingly worked into symbols representing the writers' names. Various writing materials are used, ranging from felt-tip pens to spray paint, hair dye, and shoe polish. Because the signatures and symbols had an artistic flair, Ms. Rubin conceived the idea of a workshop to direct the "artists'" talents into constructive fields through means other than punishment.

Youths who were found writing on a SEPTA subway wall were offered the opportunity to take art lessons with art materials provided free. Ms. Rubin and Robert Rivera, an art instructor at the university, began the operation of the Graffiti Alternatives Workshop in rooms provided by the University of Pennsylvania. About 25 youths attended workshop sessions originally, and the number grew as word spread. Eventually 75 youths, including all the "biggies," became involved. The GAW has become a referral center in Philadelphia to which youngsters can be sent at the option of juvenile judges.

In a joint SEPTA-GAW project, SEPTA provided one of its Route 42 buses to be painted by youths attending the Workshop. The bus has returned to revenue service, complete with multicolored stripes and designs. For the most part, passengers have accepted the change well, although some have said they had trouble identifying the vehicle as a SEPTA bus. An interesting point is that the bus remained unmarked by graffiti for 6 weeks after returning to regular service.

Films for Elementary Schools

The potential of the film medium as an educational tool in elementary schools is being demonstrated by the Regional Transportation Service in Rochester, New York. Jim Reading, the resident manager, has had an antivandalism film prepared, called "Trickles the Raindrop," which will be used in a series of school presentations in Rochester.

Same Bus and Driver

To eliminate the anonymity characteristic and to encourage rapport building between bus driver and students, AC Transit in Oakland, California, has instituted a program of using the same bus and the same bus driver with the same school routes as often as possible. Because this procedure allows the bus driver to become familiar with the students on his school bus routes, there is little possibility that he would not be able to recognize and identify any students involved in rowdiness or a vandalism act. In addition, it is hoped that the students will realize that this is "their" bus; AC Transit will even consider marking the bus with the name or mascot or symbol of the school that the students attend. This type of scheduling is not normally possible, however, because of the problems of maintenance scheduling and of scheduling drivers so that they work as continuous a day as possible.

DETERRENT, PROTECTION, SURVEILLANCE, AND APPREHENSION SYSTEMS

Automatic Vehicle Monitoring and Emergency Alarm

The use of automatic vehicle location techniques and clandestine alarms to ensure fast reaction to criminal acts (particularly in incidents of bus hijackings) is currently under demonstration in Chicago. Currently being tested in Philadelphia are 4 different types of vehicle-locating systems. Large congested cities present many problems for vehicle-locator systems, and the tall buildings, radio interference, and closely spaced streets constitute a difficult testing ground for these sophisticated systems.

Communications Systems

Although many transit systems have had 2-way radios in all or most of their buses, additional experiments are being conducted to make these communication systems more helpful when serious incidents occur.

Sometimes there may be jealousy and misunderstanding from the local police department when a transit system installs 2-way radios and begins to report unusual non-transit incidents observed by its bus drivers. There is no question that police departments have much serious police work to attend to other than responding to "rowdy students" calls relayed by a radio dispatcher from a harassed bus driver. Nevertheless, police departments can be persuaded to cooperate. For example, AC Transit in Oakland, California, reports that 352 calls were relayed during 1971 from bus drivers reporting on nontransit incidents such as accidents, fights, riots, fires, robberies, and other miscellaneous incidents. The police departments surrounding Oakland have seen fit to commend a number of the AC Transit drivers with certificates acknowledging the timely help and assistance they have provided.

Surveillance Systems

UMTA is said to be considering research on improved methods of using surveillance techniques (characteristically closed-circuit television on platforms and possibly in vehicles as well) in both rail and personal rapid transit systems. This approach will encompass new concepts in micro-miniature-integrated electronic circuits and optic sensors with moving-target software.

An existing surveillance system using television cameras at each of the PATCO station gates has proved to be remarkably successful, especially when the lack of any manpower at each of the station gates is considered.

The Port Authority Trans-Hudson (PATH) uses television surveillance in the World Trade Center to observe the fare-collecting and money-changing areas and also the station platform.

Alarm Systems

UMTA is also considering research into the technological means of providing tamper-proof points of communication for victims of, or witnesses to, criminal acts on sites such as platforms and bus-loading zones. Such systems would include direct communications with law enforcement, area alerts (phones and flashing lights), and personally actuated alarm signals. Some transit systems have 2-way radios with hidden buttons that the operator may depress to signal trouble. Others use operator-actuated 4-way flashing lights on the roofs of vehicles as pre-arranged signals to request police assistance.

Observation Post System

The VAPS staff has made a proposal to UMTA regarding a crime deterrent system at a rail rapid station. The system is composed of an observation location where there is the capability to use a television monitor and videotape system, a public address system, an alarm system, an entrance-exit closing device, and a direct communication link to the police. The purpose of the system is to minimize and perhaps eliminate vio-

lent crimes in rail stations by deterring such events, thwarting violent criminal acts, apprehending criminals engaging in violent acts, and helping to prosecute apprehended criminals. A prime objective is to minimize man-hours used to operate the observation structure. It is expected that initially the structure will have to be occupied for a high percentage of time, especially during those hours of the day when violent crimes are most likely to occur, but that the use of manpower during the initial phase of the project will establish its deterrent image. Because the observation structure will be built in such a manner that people using the station cannot tell whether it is manned, a cutback of the occupation hours can be begun once the initial deterrent image has been established.

Television cameras located in appropriate locations in the stations will be monitored by screens located in an observation booth. In addition, a videotape unit will be available to record all incidents of violent crime. One camera will be located in such a manner that it can record any persons entering the station. Signs will clearly point out to all patrons that the station is under a security control system comprising several elements. The station selected would only have 1 or 2 points serving as an entrance and an exit. This would enable the person inside the observation booth to activate the closing device in appropriate situations.

A direct communication link would be established between the observation booth and the police-controlled facilities. That link could consist of a 2-way radio or a phone line and would aid in summoning police assistance in minimum time. The final 2 components of the security system would consist of a public address system and an audible alarm system. Both systems would be used for issuing alerts or for communicating information to station occupants in the event of an act of violent crime or for doing both.

Police Actions

Frank K. King, superintendent of the Municipal Transit System of San Bernardino, California, has explained that sometimes psychology helps to combat vandalism. He indicates that, when they have a problem bus route, they have a police car meet the bus half-way on its route. The police board the bus and install a camera and a tape recorder. The camera, which is the type used in banks to photograph bank robbers, is mounted on the bulkhead behind the driver. The tape recorder is placed under a seat. The passengers already on board see the devices installed and pass the word to other passengers boarding later. Mr. King comments that often there is no film in the camera and no tape in the recorder, but their presence on the bus usually proves enough of a deterrent to prevent a repeat of any vandalism for some time.

One unique bit of police work in Tacoma, Washington, involved the theft by high school students of the gasoline tank tops of the buses on a particular school bus route. One day the gas tank top was coated with clear gelatinous material and school officials were notified to watch for a student with purple hands. This gelatinous material remained colorless until the culprit tried to wash his hands. This action then stained his hands purple. The ruse was successful, and the purple-handed student eventually led transit system executives to a vacant lot where 26 gas tank tops were recovered.

School Detectives

Atlanta has 20 school detectives who are paid by the police department with funds provided from the Atlanta Board of Education. The detectives are assigned to particular areas of the city including a number of schools, and they become very familiar with all of the students, especially the trouble-making students. During an investigation with students, they know how to be stern or to "jolly" the students into being more frank and honest about themselves and fellow students.

Transit Personnel as Special Police

Operators and other company personnel of the City Transit Company of Dayton, Ohio, can become special police officers on completing the state-certified basic training program. As special policemen, operators are permitted to carry firearms while operat-

ing their vehicles in revenue service. A brief overview of this strategy since its inception in 1967 shows a sharp reduction in the number of bus driver robberies and no deaths or serious injuries resulting from the use of firearms by CTC Special Police. The City Transit Company has not implemented an exact-fare plan as a result of successes obtained via this alternative program. As of October 1, 1971, 91 CTC employees out of a total of approximately 180 drivers had completed the 130-hour training program. All candidates for the program are volunteers and take the 130 hours of training on their own time without extra pay, but the company does pay for the cost of the training, approximately \$80.

Firearms used by the special police are provided by the employees at their own personal expense. Some CTC drivers have expressed the opinion that they would resist driving in high crime areas should the program be terminated. It appears that operators who are not special police and who do not carry weapons are also experiencing the same increased safety because the criminals do not know which drivers are carrying firearms.

Screens for Drivers

Although the exact-fare plan has largely eliminated driver assaults and robberies, some assaults are still occurring because of spur-of-the-moment antagonism or some other anti-Establishment disturbance. In January 1972, the American Transit Association sent its members a questionnaire to obtain information on assaults against bus drivers and especially on the use of protective shields for bus drivers. Eight of the 111 respondents had tried or were using a type of shield or screen for the protection of the bus driver.

Training of Police

The Chicago Transit Authority has received a grant from the U.S. Department of Justice for training security officials responsible for passenger security on the rapid transit system.

Both Chicago and New York use plainclothes "decoys" to try to trap criminals during night hours at remote station sites. These decoys pretend to be drunks or sleeping passengers so that they seem to be easy marks for a pickpocket or mugger. A police confederate is always within sight so that he may assist in preventing the crime and arresting the suspect.

On the PATCO system, dogs are trained to make transit patrols with their masters. PATCO has used an extensive public relations campaign in the communities it serves to convince municipal officials and citizens that the dogs are not dangerous except when a criminal act occurs and the dog is commanded to assist his master. The PATCO communities have enthusiastically accepted the man and dog patrols, and local newspapers give good coverage to any incidents of vandal or criminal arrests.

Police on Buses

In Buffalo and Boston, serious crime and passenger harassment have required that uniformed police ride the bus and rail systems at particular hours in particular neighborhoods. In both cities discontinuance of police protection is disquieting to the transit drivers because the basic crime problem persists.

INSTITUTIONAL COOPERATION AND CONFLICT

Atlanta Judicial System

Al Brasill of the Atlanta Transit System is on a first-name basis with the judges and clerks of the municipal court system and with the judges, referees, probation officers, clerks, and personnel of the juvenile court system. Mr. Brasill, who is always willing to provide any information needed by the municipal or juvenile court authorities, is often called to testify in cases involving the transit system.

Seattle Transit System

One of the most disruptive factors in the afternoon school-to-home trip is the presence of nonstudents who (either playing hooky from another school or having quit or been suspended from school) visit schools in small gangs and try to create havoc either in the corridors or in the school buses.

At Ranier Beach Junior-Senior High School in Seattle, Washington, 4 persons classified as field-security personnel carry walkie-talkie radios and patrol the corridors and grounds of the school throughout the day in order to prevent outsiders from wandering through the school and disrupting the normal school activities. These field security personnel check all passes but are not authorized to make arrests. The problem of intruders was quite severe at one time because expelled students soon learned that school officials had no power to either enforce their expulsion from school or arrest them. The situation was alleviated when the board of education's attorney prevailed on the court system to begin issuing restraining orders. If the school makes available to the court a documented record of a sufficient number of incidents regarding the violation of expulsion, the court may issue a restraining order. School officials can request the police to arrest students who violate such restraining orders.

PATCO Transit System Police

PATCO (from Philadelphia to Lindenwold, New Jersey) has a transit system police force of 18 men and 6 dogs. They patrol on board the PATCO trains as well as in the stations, parking lots, and the railroad right-of-way. The PATCO police officers have walkie-talkies and are in constant communication with the Central Control Center in Camden. When problems occur, a police officer who is already on a train can usually arrive at the scene within minutes.

Prior to the initiation of service on the Lindenwold Line, PATCO officials held intensive talks with representatives of the two states and the many municipal jurisdictions that PATCO serves. The necessary legislation was passed so that PATCO police are empowered to make arrests anywhere on the transit system regardless of where the criminal or vandalism act occurs. Although there is always some jealousy between police jurisdictions operating within the same area, the PATCO police have tactfully endeavored to assist local communities whenever possible and to slowly build the confidence and cooperation of local police jurisdictions.

Arrests made on the PATCO system are tried in the jurisdiction where the incident occurs. Although there is a tendency for local court officials to hear first all cases brought by the local police, court hearings are still rather prompt. The system seems greatly preferable to the alternative of having local police make investigations and arrests within their own jurisdictions.

Washington, D. C., Study

The Washington Metropolitan Area Transit Authority has awarded a \$58,500 contract for a study of Metro's security. Concurrently, the Washington Metropolitan Council of Governments (COG) has decided to make its own study of the question of transit police versus local police. The two studies are to be made cooperatively, and the COG study is aimed broadly at all emergency services including police, fire, and ambulance.

The transit system suffers in some cities where this question has been left undecided. The Cleveland Transit System does not have sufficient money to provide its own transit security force, and the city of Cleveland does not want to expand its police force to provide occasional police patrols for vehicles and stations. Some cases of transit crime have occurred and have received much publicity, and ridership has suffered as a result.

SUMMARY

This paper has given highlights of the American Transit Association-UMTA study of vandalism and passenger security. Every major avenue of research provides several subideas that should be investigated, time and resources permitting, to provide a complete report. The scheduled completion date for this project is June 1973; copies of

the final report will be available through the American Transit Association, the Urban Mass Transportation Administration, and the National Technical Information Service.

REFERENCES

1. Federal Register. Vol. 37, No. 120, Wed., June 21, 1972, pp. 12238-12239.
2. An Identity Thing. Time, March 13, 1972.