information permitting sounder underwriting practices. Alternative plans for covering school districts also would be analyzed; this work would benefit both the insurance industry and the school districts.

- Phase VII--Analysis of School Administrative and Educational Policy and Programs

  Concurrent with the Phase III site survey, analyze the administrative and educational policies and programs of the vandal-struck schools, which may have some causal relation to the level of vandalism. The data for this effort would be derived from the survey, questionnaires, and interviews in Phase III. Innovative educational and administrative approaches would be developed for experimentation under Phase IV to test the concept of vandalism prevention techniques.

- Phase VIII--Analysis of Innovative Approaches to the Planning and Design of New Schools

  Explore the possibility of influencing the design of new schools to take into account factors related to vandal control measures. Where evidence is available showing that new school design can be successful in lowering vandalism in high vandalism areas, such evidence would be considered in the concept of vandalism prevention measures.

To succeed, the above outlined research plan requires specialists in many disciplines, such as educators, psychologists, sociologists, cultural anthropologists, systems analysts, statisticians, business administrators, and engineers. The multidisciplinary research team approach to solving such major problems as vandalism in the schools appears to be the only logical way to ensure consideration of all the major facets of the problem. With this approach, a comprehensive evaluation of alternative approaches can be performed to provide the best possible solutions to lowering the cost of vandalism.

The spiraling problem of vandalism against the nation's schools demands immediate and concerted action. But such action--if it is to be effective--cannot stem from a symptomatic approach. Rather the approach must be diagnostic. It must be directed toward determining the causes and manifestation of schools vandalism--whether they be social or physical--and toward assessing all aspects of the problem and its related factors. Only when this work has been accomplished can school district officials and communities turn to developing more permanent solutions.

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ABSTRACT

A description is presented of a research program on school vandalism. Many interrelated problems of school vandalism are discussed, and solutions are identified that have been applied in selected school systems. Deficiencies in attempts to control vandalism either through technological or other security means are highlighted. Also included is a description of a research program to develop well-defined solutions that should be pursued if any real, long term progress is to be made in reducing the level of vandalism existing in the schools. (FS)

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Final Report *October 1969*

SCHOOL VANDALISM: A NATIONAL DILEMMA

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Prepared for:

THE STANFORD RESEARCH INSTITUTE
RESEARCH AND DEVELOPMENT PROGRAM

SRI Project 077531-034

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PREFACE

Acknowledgment and appreciation are expressed for the support provided to the principal investigator in the conduct of the research effort by the following Institute staff members:

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I INTRODUCTION AND SUMMARY

This report describes an Institute-sponsored research program on school vandalism conducted by the Public Safety Program of Stanford Research Institute. The research was undertaken in view of SRI's awareness of the alarming increase in vandalism affecting the nation's schools. The intent was to determine the extent of the vandalism problem and the efforts being exerted to control it. For purposes of the study, school vandalism comprises those acts that result in significant damage to schools, including burglary, theft, malicious mischief, property damage, breaking and entering, and arson. Throughout the report, the term "vandalism" generally refers to these acts.

Vandalism has always been a problem in the community and particularly in the schools. But, in recent years, with the increase in racial tensions and violence and student activism throughout the nation, the rate of incidents in the schools has reached alarming proportions. The severity of the economic loss is clearly reflected in the actions of the insurance industry whose individual carriers have been increasing payments, premiums, and loss deductible exclusions substantially for those school districts that are hardest hit. In many cases, school districts have been faced with outright cancellation of policies or refusal to cover. The latter situation has prompted the California State Department of Education, in conjunction with CASBO (California Association of School Business Officials) and selected representatives of the insurance industry, to establish an advisory committee to study the problem.

Partly as a result of the committee's efforts, the California State Legislature has undertaken to pass legislation requiring a "pooling" of coverage similar to the California FAIR Plan (Fair Access to Insurance Requirements) established for the coverage of private property in riot-sensitive areas. Moreover, the state law limiting the deductible exclusion to $1,000 is being modified. Other legislation is pending that will permit a tax override whereby school districts could secure additional tax revenues specifically for the installation of alarm systems. The state also has been considering the possibility of establishing a state insurance plan for school districts if the insurance industry fails to provide "adequate" coverage.

What constitutes adequate coverage is open to question, particularly with regard to premium rates. School districts that have not experienced severe incidents of vandalism have nonetheless been faced with rising insurance costs as individual insurance carriers attempt to spread the risk over a wider base. This practice is not unique in the industry, but it hurts the school system by further diverting educational dollars from more productive educational programs and facilities.

Faced with the effects of the increase in the level of vandalism, the insurance industry has applied increasing pressure on school districts to institute preventive measures. School district officials themselves have recognized the problem of severe property losses and total destruction of classrooms and buildings and have attempted to cope with the problem in many ways. The total dollar cost to the nation is not known. Conservatively, we would place the total cost of school vandalism, including security costs, at between $100 million and $200 million, current annual rate. Accurate accounting records on losses and costs to control vandalism simply do not exist in a vast number of school districts.

Our research has shown that a host of antivandalism measures are being undertaken throughout the country. But it has not been possible to evaluate their effect on the rate of vandalism. One fact became very clear during the research, however. School district officials have been pressured from many quarters to do something about controlling vandalism. For example, the soaring national crime rate has resulted in a plethora of vendors who are marketing alarm systems. Claims for their effectiveness are touted in elaborate brochures and hard-sell demonstrations, and school business administrators are hard pressed to resist purchasing such equipment. But the most difficult questions to resolve are what kinds of alarm systems do the schools need and what equipment or brand names should they select? (Thomas Register, 59th Edition, 1969, lists some 170 manufacturers and distributors of fire and burglar alarm systems.) Many school districts have installed expensive electronic intrusion and fire detection systems, and in the largest unified districts, fairly elaborate security departments have been established and some school facilities have been "hardened" to resist penetration.

These procedures, of course, add to the overall cost of vandalism control. The disturbing discovery is that the available information indicates that the effects of vandalism are being treated symptomatically--i.e., insurance companies are raising insurance premiums and loss deductible exclusions and school districts are instituting elaborate security procedures. But the results appear to be short of expectations.

Our research effort, although it uncovered the fact that a host of procedures are being undertaken to bring the rate of vandalism under control, failed to uncover any one set of antivandalism techniques that could be universally applied to school districts. Whereas one procedure may have worked well under one set of environmental factors, it did not necessarily guarantee that it would function as well in a different locale. The inference thus is that, if a given school district is to achieve a measurable reduction in vandalism, then it must begin to treat the problem diagnostically rather than symptomatically--i.e., it must determine the nature and causes of vandalism first and then apply appropriate deterrent or preventive techniques.

It would be easy to generalize that high incidence of vandalism is associated with a low socioeconomic environment--ghetto areas to be specific. Although this generalization is substantiated by some spectacular loss factors ($1.2 million for window breakage in New York City in 1968;

$1.5 million arson loss in Baltimore in 1968), high vandalism rates are not unique to large urban areas. Severe loss ratios on a per pupil basis also exist in suburban, smaller school district areas. A survey conducted in California by CASBO for the years 1965-68 revealed that school districts having an ADA (average daily attendance) of 25,000-60,000 had the highest vandalism loss ratios compared with the ADA categories below 25,000 and above 60,000. Surprisingly, some of these areas are in supposedly stable middle class communities.

Our research also failed to uncover any significant valid body of knowledge on ways to cope with vandalism that can be readily applied to a given school district. Although much literature is available on juvenile delinquency and its relation to the criminal justice system, only fragmentary information has been reported with respect to juvenile delinquency and the school. It is well documented, however, that there is a high correlation between delinquent youths and reading and educational deficiencies. The concept that the school may be "delinquent" in meeting its responsibility for preparing the pupil for his role in the community, raises some serious questions as to the adequacy of the school plant and its administration, as well as the relevancy of the educational curricula to the current and future critical needs of students and the community. The inference is that the school itself has a vital role in the community; consequently, its physical integrity must be protected and its image and contribution to the community's needs must be enhanced.

This report discusses the many interrelated problems of school vandalism noted during the study and identifies solutions that have been applied in selected school systems. The glaring deficiencies in attempts to control vandalism either through technological or other security means are highlighted. The concluding chapter of the report describes a fairly ambitious research program to develop well-defined solutions that should be pursued if any real, long term progress is to be made in reducing the level of vandalism existing in the schools today.

We conclude that the most effective mechanism for obtaining valid data to permit sound policy development is to conduct a series of controlled experiments in selected school districts. From these experiments, we would hope to learn which of the measures evaluated offers the best solution for reducing the current rate of vandalism to "acceptable" cost levels. The results of the research, experimental, and analytical phases of the suggested approach should then be published as guidelines to assist school district officials in individual vandalism control programs. Further, the guidelines would also aid the insurance industry in underwriting insurance coverage for school districts on a preferred-risk basis.

The data for this research were developed through (1) discussions with knowledgeable persons in areas related to school vandalism, such as school district officials, insurance underwriters, fire rating and adjustment bureaus, statistical associations, industry associations, and the California State Insurance Department, and (2) review and analysis of the literature on vandalism and vandalism control procedures.

II THE HIGH COST OF SCHOOL VANDALISM

Losses Incurred from Vandalism

Vandalism as a social problem is not unique to the current scene. The literature documenting such destructive acts can be traced back through history. Although we recognize that acts of vandalism are widespread nationally in the business and residential community, with losses running into the hundreds of millions of dollars, the concern of this report is primarily with vandalism committed against schools.

Our limited research into the nature, extent, and causes of vandalism in the schools indicates that, during the past decade, educators and communities have recognized increasingly that the problems of vandalism and juvenile delinquency require urgent attention. But "recognition" of the fact that the rate and severity of vandalism have been increasing does not appear to have resulted in satisfactory efforts to control the widespread increase. For purposes of this study, vandalism is defined as including related acts, such as burglary, arson, theft, and property damage (malicious mischief). Although there may be different motives for each of these offenses, the general problem of delinquent behavior directed against schools is of direct concern here.

The cost of vandalism to the school districts has become enormous. New York City unquestionably has had the most severe problem. The New York Board of Education reported that in 1967 direct vandalism losses incurred totaled $1,955, 265; losses in 1968 rose to $2,716,757.[1]* These losses do not reflect the true cost to repair and replace defaced property, which the Board estimated would bring the cost to more than $5 million. Vandalism costs do not necessarily include theft and burglary and hidden security and maintenance costs, which in New York City's case could add considerably to the $5 million figure. In 1966, New York City reported nearly $800,000 in losses from theft.[2] Window glass breakage in the 900 school system for 1968 totaled over 243,000 panes costing about $1,218,000--a $200,000 increase over the previous year.

The National Education Association estimated that school vandalism currently is costing the nation's schools up to $200 million annually.[3] A survey conducted by the Associated Press indicated that vandalism costs increased from 25% to 30% between 1967 and 1968.[3]

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* Cited references appear at the end of this report.

Philadelphia also has a severe vandalism problem. In 1968, school vandalism losses in that city were set at $1 million--an increase of $250,000 over 1967.[3] If window breakage is any indicator of the increasing level of violence directed at the Philadelphia public school system, in 1966, the schools system had 109,500 broken window panes costing $250,000,[2] and in 1968, 300,000 broken panes costing $684,000.[3]

Fire losses probably have accounted for the largest dollar drain nationally. For 1967, NIASA (National Insurance Actuarial and Statistical Association) reported that educational institutions throughout the country sustained fire losses of approximately $20 million.[4] It is not known how much of that loss can be attributed to arson. However, the severity of arson loss is indicated by the experience in Baltimore where school losses from arson rose from $19,800 in 1967 to approximately $1.5 million in 1968.[3] In the first four months of 1969, such losses totaled $1.05 million. Similar increases have been experienced throughout the country.

Total losses attributable to all aspects of vandalism have soared over the past few years. Unfortunately, accurate records are not kept in a large number of school districts so that it is not always possible to evaluate the rate of change in losses or to measure the effects of vandalism control measures that may have been introduced in selected school districts. Table 1 shows the costs incurred on a per pupil basis for 33 selected school districts in 1966-67. It is believed that these cost figures are significantly understated because the input data were not complete.

Another indicator of the magnitude of vandalism losses is the cost per pupil. On this basis, an enormous increase again is noted for Philadelphia.[2,3] For the school year 1966-67, Philadelphia reported a cost of $0.89 per pupil, which we believe is grossly understated. For 1968, assuming the same enrollment of 280,000 pupils and a loss of $1 million, the cost per pupil is $3.57.

If we assume that $5 million is an accurate estimate of vandalism costs in New York for 1968, then the cost per pupil is $5.00. This figure compares with $1.95 reported for 1966-67. The $1.5 million arson loss only for Baltimore in 1968 represents a cost per pupil of $7.50 compared with $1.34 for 1966-67.

The vandalism experience in California school districts is typical of the national scene. CASBO has been extremely active during the past couple of years in publicizing the severity of the problem. In a 1967 report, this organization stated that ". . . deterring vandalism in the schools today has become an increasingly serious problem to the taxpayers of California."[5] A survey of the Southern Section of CASBO was conducted in 1966 to identify practices that have been successful in deterring

Table 1

SCHOOL VANDALISM COSTS FOR SELECTED U.S. CITIES
1966-1967

City School System	Enrollment	Number of Buildings	Cost Per Pupil	Restitution Per Pupil	Net Cost Per Pupil
Newark	76,150	78	$3.30	$.10	$3.20
Cleveland	151,381	185	2.96	.11	2.85
Cincinnati	88,581	114	2.56	--	2.56
Boston	92,892	196	2.30	.01	2.29
New York City	1,000,000	927	1.95	--	1.95
Washington, D.C.	148,149	208	1.70	.02	1.68
Milwaukee	128.405	162	1.67	.01	1.66
Detroit	298,027	315	1.72	.07	1.65
St. Paul	47,000	90	1.57	--	1.57
Kansas Cit, Mo.	73,372	104	1.56	.03	1.53
Syracuse	30,694	46	1.59	.28	1.31
Baltimore	199,983	244	1.34	.04	1.30
Minneapolis	70,989	99	1.23	.01	1.22
Pittsburgh	76,181	113	.95	--	.95
Philadelphia	280,000	297	.89	.01	.88
Memphis	125,000	140	.82	.02	.80
Tulsa	80,000	113	.81	.01	.80
Dayton	62,000	72	.73	--	.73
Wichita	69,735	120	.79	.07	.72
Oakland	71,533	104	.76	.04	.72
Richmond	43,732	66	.92	.20	.72
Louisville	50,000	73	.67	--	.67
Los Angeles	817,395	980	.68	.07	.61
Corpus Christi	44,946	68	.91	.36	.55
San Antonio	75,000	105	.54	--	.54
Portland	78,714	121	.52	--	.52
Norfolk	55,568	76	.46	.05	.41
New Orleans	110,000	130	.34	.02	.32
Tampa	94,475	133	.71	.41	.30
Denver	96,435	120	.30	.01	.29
Beaumont	15,127	31	.36	.08	.28
Birmingham	67,858	102	.31	.07	.24
El Paso	62,000	66	.23	.11	.12

Source: Reference 2.

vandalism. No detailed costs were published, however. Among the conclusions reached as the result of the survey and evaluation are the following more significant findings:

1. Most schools, but not all, have a vandalism problem;

2. It is difficult to justify electronic alarm systems in view of the losses sustained on an average district cost basis;

3. The failure of staff security precautions is a significant reason for vandal loss;

4. A system of vandal prevention based upon apprehension of the vandal is generally ineffective.

A limited national survey was conducted in 1960 by ERS (Educational Research Service) to determine which devices and policies have been employed for the protection of school buildings. The results of the inquiry were published in August 1968.[6] The brief report begins with a quotation from a Southern County school superintendent: "The protection of school property against vandalism and theft has become quite an expensive item." The report also observed that "the cost of insurance against vandalism and malicious mischief exceeds that cost of the damage in a number of school districts." This conclusion is generally not valid for the state of California where (from 120 reporting districts) losses exceeded premiums paid for 1965-68 as can be seen in Table 2. The table is based on a statewide survey conducted in 1969 by CASBO to determine the costs of vandalism (excluding theft and burglary and other related costs), insurance premiums, and collections.

To obtain this information, questionnaires were mailed to 265 school districts. Approximately 120 responses were received, representing about half of the California school attendance. It should be noted that the cost figure is grossly understated because it does not include in all instances losses attributable to burglary, theft, and property damage repaired by resident maintenance staffs. Nor does it take into account costs to equip and maintain special security forces, which are considerable for the larger school districts, and law enforcement costs to patrol and respond to calls reporting school incidents. Many school districts carry theft insurance, but the costs are exceedingly high. Where data on selected school districts theft losses are available, the dollar amounts are significantly high.

Comparison of Tables 1 and 3, vandalism costs of selected cities for 1966-67 and selected California school district costs for 1965-68, shows that Oakland had a 53% higher 3-year average cost compared with the one-year (1966-67) per pupil cost. Los Angeles, comparing the same two periods, shows a 30% higher cost. These cost figures from the two different sources may not be directly comparable since we have no way to determine how the 1966-67 costs were derived for Reference 2. However, we can observe from Table 2 that there was an overall increase in total losses of some 30% in the 1967-68 period compared with the previous period.

Table 2

ANALYSIS OF VANDALISM LOSSES, PREMIUMS, AND LOSS RATIOS
(120 Reporting California School Districts)

District Size by ADA	Number of Districts Reporting	Total Losses	Collected from Insurance	Uninsured Losses	Premium	Ratio of Total Losses to Collections	Pure Loss* Ratio
			1965-1966				
Below 25,000	100	$ 701,585	$ 543,118	$ 158,467	$ 685,259	129%	79%
25,000-60,000	14	394,035	131,219	262,816	350,160	300%	37%
Big 5 Districts†	5	598,011	316,262	281,749	345,084	189%	91%
	119	1,693,631	990,599	703,032	1,380,503	171%	72%
			1966-1967				
Below 25,000	100	952,150	393,291	558,859	935,568	242%	42%
25,000-60,000	14	704,401	365,653	338,748	478,654	192%	76%
Big 5 Districts	5	437,793	94,676	343,117	446,523	462%	27%
	119	2,094,344	853,620	1,240,724	1,860,659	245%	46%
			1967-1968				
Below 25,000	100	1,277,471	1,001,922	275,549	1,094,095	127%	91%
25,000-60,000	14	651,457	269,233	382,224	544,452	242%	49%
Big 5 Districts	5	1,120,195	616,338	503,857	418,657	181%	147%
	119	3,048,123	1,887,493	1,161,630	2,057,204	162%	92%
			1965-1968				
Below 25,000	100	2,931,206	1,938,331	992,875	2,714,922	151%	71%
25,000-60,000	14	1,622,324	721,293	901,031	1,306,795	225%	55%
Big 5 Districts	5	2,155,999	1,027,276	1,128,723	1,210,264	209%	85%
	119	6,709,529	3,686,900	3,022,629	5,231,981	182%	70%

* Ratio of collections from insurance to premiums paid. This ratio is of significance to insurance carriers as a basis for determination of payments and profit margins.

† Los Angeles, Long Beach, San Diego, Oakland, and San Francisco.

Source: Reference 7.

Table 3

SCHOOL VANDALISM COSTS FOR SELECTED CALIFORNIA SCHOOL DISTRICTS
1965-1968

School District	Yearly Average Cost Per Pupil*	Enrollment	Total Vandalism Costs	Pure Loss Ratio	Total Insurance Premiums	Total Insurance Collections
Ravenswood Elementary	$19.74	5,700	$ 337,505	749%	$ 20,400	$152,801
Compton Union High School Unified	7.18	15,700	338,291	408%	81,010	330,191
Mt. Diablo Unified	5.33	50,000	809,050	246%	97,432	239,958
Palo Alto Unified	4.09	16,000	196,455	374%	52,570	196,361
San Francisco Unified	3.07	90,000	828,586	43%	183,283	78,539
Richmond Unified	2.07	44,000	273,896	--	N.A.	15,526
Sacramento City Unified	1.89	53,000	300,236	62%	229,505	142,720
Oakland Unified	1.62	63,000	305,599	92%	233,597	213,889
Stockton Unified	1.41	32,000	168,294	4%	113,134	3,975
Los Angeles Unified	.97	714,000	2,075,575†	119%	566,560	675,357
San Diego Unified	.73	140,000	305,873	35%	127,424	44,153

* Based on the three-year average for the 1965-68 period.

† Total vandalism costs for Los Angeles compiled from two sources: Reference 8 for fire losses and Reference 9 for all other vandalism losses.

Source: References 8 and 9.

The following example indicates the wide disparity in losses among school districts of a given size. These losses in Louisville, Kentucky, and the Mt. Diablo Unified School District in Concord, California--both of which have an enrollment of 50,000--amount to per pupil costs of $0.67 and $5.33, respectively. We do not know the circumstances or the particular socioeconomic environment existing in Louisville, which might tend to keep the overall vandalism costs down compared with those in the Mt. Diablo District.

Cost of Adequate Insurance

Any discussion of the high costs of vandalism must take into account the cost of adequate insurance coverage, which is increasing at rate commensurate with the rise in total losses. In March, 1969, the Pacific Fire Rating Bureau indicated that fire insurance rates for all California school buildings would be raised by 40% beginning April 1, 1969. The Rating Bureau based its decision on statistics compiled over the 1963-67 period showing that fire insurance carriers paid out $124.50 in school fire losses and company operating costs for every $100 collected in premiums.[10] Figure 1 compares the payout versus premiums collected in the insurance industry. The fire insurance industry has stated that, if the pure loss ratio (relationship of fire losses paid to premiums earned) exceeds 70%, they cannot cover operating costs nor make a return on capital invested; that is their break-even point, in other words.[11]

The April 1 date for the blanket 40% increase does not mean that there have been no increases in insurance premium rates during the past five years. Quite the contrary. As policies have expired in high risk school districts, both premiums and loss deductibles have been raised. The highest risk school districts were further faced with outright refusals to renew coverage. The situation became so critical last winter that the California Association of School Business Officials in conjunction with selected representatives from the insurance industry and the California Department of Education formed a committee* to advise the Department of Education on matters affecting the securing of adequate facility insurance coverage, which is required by the Education Code. As a result of the committee's efforts, the California Legislature undertook to consider and/or pass several bills affecting the securing of insurance coverage for high risk school districts. The insurance industry has voluntarily attempted in the interim to arrange for "pooling" of coverage, similar to the California FAIR Plan (Fair Access to Insurance Requirements) established to provide coverage for private property in riot-sensitive areas. The Federal Department of Housing and Urban Development has set up a special fund to provide federal reinsurance backup

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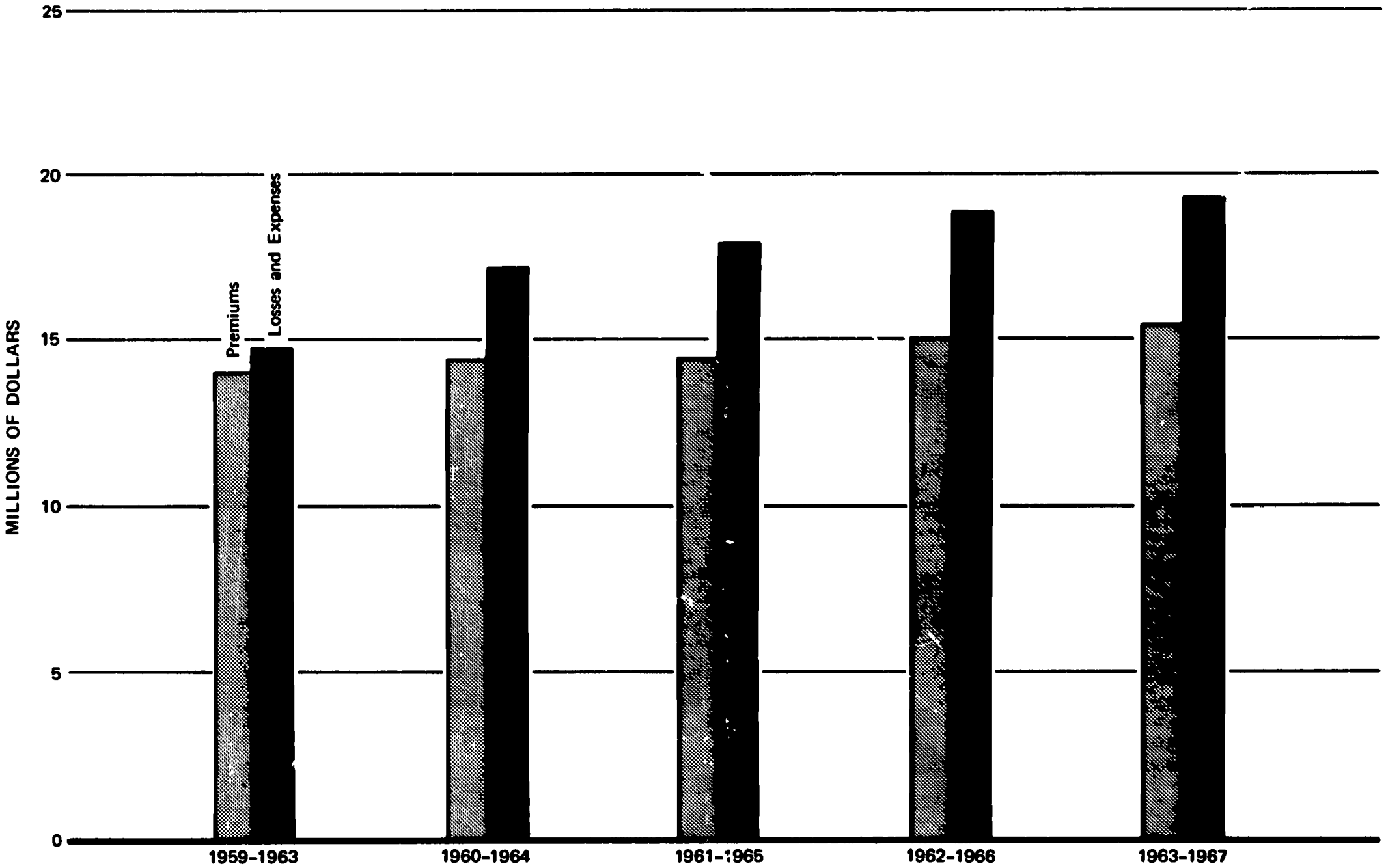
* Advisory Committee of the California Association of School Business Officials to the State Department of Education on School District Fire Insurance.



NOTE: Rates are computed on average of 5 years' experience.

SOURCE: Reference 10

FIGURE 1 CALIFORNIA SCHOOL FIRE INSURANCE—COMPARISON OF PREMIUMS COLLECTED TO LOSSES PAID AND RELATED COMPANY EXPENSES

to carriers insuring in the high risk areas. Premiums are determined on the basis of a multiplier factor of the total insurance written. Several of the larger companies have elected not to purchase the government-supported insurance plan because the costs would be excessive for them.

The California Legislature is also considering provisions for modifying the $1,000 loss deductible limitation stipulated under the Educational Code, Section 15802, and a provision for a tax override authorization that would allow school districts to secure additional revenue for the installation of alarm systems. The $1,000 loss deductible maximum has been a "legal" stumbling block to securing insurance coverage. For example, the Ravenswood Elementary School District (adjacent to Palo Alto, California) could only obtain coverage if it accepted a $100,000 deductible clause. With a history of disastrous fire losses over the past two years, this tiny district found itself in a difficult situation.

It is evident that as direct losses have increased, premiums have also increased (see Table 2). But the startling fact is that uninsured losses have also generally increased, as can be seen in the column headed "Ratio of Total Losses to Collections," where losses to collections ratios fluctuated in 1965 from 171% to 245% for the following year, to 162% in 1967. This fact is further reflected in the sharp reduction in the "Pure Loss Ratio" column. For example, during the 1965-66 period, the pure loss ratio of ADA districts below 25,000 was 79%. For the 1966-67 period, this ratio dropped to 42%, theoretically indicating that the carriers "made money." But, for the 1967-68 period, the loss ratio jumped to 90%--an indication that the carriers "lost money," if the break-even figure of 70% is assumed to be accurate.

Such fluctuations in "uninsured losses" and "loss ratios" are attributable to the fact that losses are incurred in one year and premiums are adjusted in a later year. Because insurance is written on an anticipated risk basis using historical experience, the insurance industry attempts to recoup its prior years losses by increasing the premiums and the loss deductible amounts. The latter effect can be seen readily in the "Uninsured Losses" column in Table 2. While the industry seeks to protect its profit margins by both this mechanism and selective underwriting, the school districts and ultimately the taxpayers must absorb not only the cost of increasing premiums, but also that portion of coverage excluded by a loss deductible clause. In California, for example, in the 1965-68 period, total losses exceeded claims recovered from insurers by $3,022,629.

The insurance carriers have brought pressure on the high risk school districts to institute measures to reduce the level of vandalism. Potentially, millions of dollars may be expended on security systems and devices by school officials who may have little basis upon which to evaluate their merit and application. We are convinced that advice given to school district officials by vendors and insurance underwriters

is meager based on our limited observations and a report to the U.S. Senate on the insurance industry and crime in the small business industry.[12] The following statement from this report sums up this conclusion succinctly:

> Despite the insurance industry's concern with, and concentration on loss statistics, it has remarkably little information about how to reduce losses from crime. Although the industry grants premium reductions for certain safeguards, such as night watchmen and central station protection, it has little statistical knowledge on the value of many of these safety devices. Moreover, the industry has shown little inclination to do basic research in loss prevention. It has preferred instead to minimize and prevent losses through selective underwriting practices.
>
> (emphasis added)

Based on the findings of this study, we are convinced that insufficient knowledge is available to the ultimate decision-maker--i.e., school district officials--to establish an appropriate course of action designed to reduce the overall cost of vandalism. (This unfortunate situation is illustrated in Chapter IV, which describes an analysis of vandalism control procedures in which we examined in some detail the vandalism reports and control procedures of a major California school district.)

During the research, we attempted to determine those loss aspects in relation to California school districts that are most risk-sensitive to the insurance underwriters. The following kinds of data were of particular interest in this regard:

- Location of risks that experienced the greatest losses.
- Lack or presence of protective devices/systems in districts that had high loss experience.
- Time of day that certain kinds of losses occurred.
- Age and other characteristics of individuals causing or being associated with differing kinds of losses.
- Attendant circumstances of losses.
- Kind of loss reported--i.e., theft, burglary, fire, malicious mischief, and so forth.
- Various other risk-sensitive factors attending the circumstances of losses resulting from fire and vandalism.

The objective of determining the availability and existence of these types of data was to identify risk-sensitive characteristics and their overall effect on a given risk. With this information, the project team

hoped to determine a methodological technique for matching specific sets of risks with the insurance rating structure, and once the actual risk-sensitive characteristics were identified, to develop, test, and implement a cost/effective means controlling them.

Unfortunately, the investigation revealed that the various organizations that collect statistics related to loss ratios of property and casualty insurance companies do so on an aggregate basis. The statistics are of a gross nature and do not delineate attendant circumstances surrounding a given loss or set of losses. Given the type of aggregate statistics that the insurance industry now gathers (i.e., summary loss ratios), it is impossible to structure an analysis that would yield precise risk-sensitive characteristics that would be statistically meaningful and relevant to risk analysis and rating. The summary loss ratios currently being compiled by the various insurance statistical organizations are of very limited use to the insurance industry in matching the correct rate to the school district. Rates for educational institutions in California, in fact, vary substantially as the result of changes in rates, differing deductible exclusions for similar school districts, and different credits. The net effect is that the correct rate with respect to a given school property risk may be extremely difficult to determine. Clearly, data of a much more refined character are needed for risk analysis, rating, and identification of factors contributing to vandalism losses.

Several companies in the insurance industry were contacted during the study to determine their reaction to the present crisis in the general area of school vandalism. All individuals contacted recognize that this problem is of significant scope that goes far beyond the bounds of the insurance industry. The upswing in vandalism in the past few years has placed the industry in a quandary as to how to respond. If the companies fail to supply the school districts with adequate insurance coverage, the state may have to fill this gap--a procedure not desired by the industry.

III WHO ARE THE OFFENDERS?

The preceding chapter documents the fact that school vandalism is costing the taxpayers an ever-increasing and enormous sum of money each year. Evidence of destructive acts inflicted on residential and business facilities and parks and public property is also frequently seen. Apart from the motivations of theft and burglary, we are at a loss to rationalize the reasons why violence is directed at the nation's schools. The literature yields many works on juvenile delinquency, and innumerable articles appear in the mass media and professional journals describing vandalism. But scant attention has been directed toward developing an understanding of who the vandal is and why he commits acts of vandalism, particularly against schools.

John Martin, writing on juvenile vandalism in 1960, stated that "...despite the loss from vandalism and the special efforts to prevent its occurrence in various communities, surprisingly little attention has been given to this form of delinquency by sociologists, psychiatrists, and other students of juvenile misconduct."[13] It is noted that the author singled out the "juvenile" in this context. He further noted that whereas it was possible to build up a substantial library concerned with arson, assault, burglary, kleptomania, runaways, sex misconduct, and truancy, "... the voluminous professional literature on juvenile delinquency was virtually silent on vandalism." Martin's text on "Juvenile Vandalism" explores the sex, age, ethnic, and socioeconomic characteristics of vandals. The author has even classified vandalism into three types: predatory, vindictive, and wanton, and conducted several case studies to illustrate each of these classifications. But school vandalism was a minor aspect of the text.

Our literature search also has been relatively unsuccessful in bringing to light research studies pertinent to school vandalism control. Few comprehensive studies have been undertaken since 1961, despite the alarm that has been raised during the past decade. We found many publications that exhort school officials to provide for greater protection, but there were few discernible signs revealing significant results in attempts to control the rise in school vandalism except in scattered areas of the country. (Chapter IV identifies some of the vandalism control procedures that reportedly have worked for selected school systems.) On the basis of the overall loss statistics, we seriously question whether the efforts instituted during the past couple of years are having any appreciable effect on the rate of vandalism. For this reason, we are convinced that a series of steps must be undertaken in a methodological manner to lay the groundwork for long range results.

Statistics clearly show that juveniles (under 21) account for the majority of all arrests for major crimes against property.[14] Arrest rates are highest for the 15-17 age group. The Children's Bureau indicated that offenses by the under 18 age group were largely committed against property. Although this group constitutes only 13% of the total population, it accounted for 37% of all offenses leading to arrests in 1965.[15]

Martin, who based his study[13] on juvenile delinquency cases in New York City, observed that "...far more boys than girls are involved in delinquency; the majority of delinquent children are 14 years old and disproportionately more delinquents are drawn from the families of marginal groups on the American scene." This latter observation conflicts with an earlier study by Clinard and Wade, which states that "...evidence concerning the relationship of vandalism to social class position is conflicting and fragmentary.[16] Our current general observations tend to bear out the latter conclusion that available empirical evidence is contradictory. A report on a study conducted in 1946 on school vandalism in 25 cities showed that incidents of vandalism occurred as frequently in higher socioeconomic districts as in poorer sections.[17] Individual cities surveyed in this study showed differences in the environmental origins of the vandals. Although the recent CASBO survey in California gives aggregate statistics on losses resulting from vandalism, by school district, it has not been possible within the limits of our available resources to search deeper into the data to determine on a district-by-district basis where the losses are occurring and what relationships exist in the various levels of the socioeconomic environment.

Mr. Allen F. Breed, Director of the California Youth Authority, in an address reinforces observations that vandalism problems are not confined to any given sector of our society.[18]

> Although delinquency is concentrated most heavily in the disadvantaged areas of our cities, the increased incidence of arrests in the more affluent sections of our communities is a warning sign that the problem of crime and delinquency is no longer a phenomenon to be found primarily on the wrong side of the tracks. The statistics show that delinquency is a problem common to all races and to girls as well as boys. Of those under 25 arrested for felonies in 1967, 60% were white, 25% were black, and 12% were Mexican-American.

Sociologists in the past 15 years have disagreed on findings linking vandalism with social rank. Bernard Lander's research findings on delinquency in Baltimore[19] whereby he related delinquency rates with the percentage mix between black and white neighborhoods were questioned by other workers in the field attempting to replicate his findings in at least four attempts. Lander's thesis was that the relationship of the percentage of nonwhite to delinquency dropped when that percentage increased above 50%. His argument is that the social disorder (anomie) of having racially mixed and probably changing neighborhoods produced the association between the percentage of nonwhite and delinquency. Bates and

McJunkins cite other works tending to indicate that vandalism cannot overwhelmingly be directly related to the socioeconomic status of a census tract.[20]

The previous references are concerned primarily with the larger social setting of the community and vandalism. We have no way at the moment to relate community based vandalism directly to the school vandalism problem, but there is a clue with regard to the school background of the juvenile offender. The CYA (California Department of Youth Authority) published a profile of boy and girl first commitments to the CYA from the juvenile courts.[21] Table 4 is a condensation of the findings.

Table 4

PROFILE OF FIRST COMMITMENTS FROM JUVENILE COURTS TO CALIFORNIA YOUTH AUTHORITY

	Percent	
	Boys	Girls
Indifferent or negative attitude toward the school	77%	84%
Involved in serious school misbehavior	62	72
No record of serious school misbehavior	7	8
Enrolled in junior high school at the time of commitment	48	38
Enrolled in senior high school at time of commitment	47	61

Source: Reference 21.

The table shows that a high percentage of delinquent youths have a record of poor school relations. MacIver has pointed out that research work has revealed that there is a high correlation between school retardation, truancy, dropouts, and delinquency.[22] He further points out that reading retardation correlated with other environmental and sociopathological conditions is characteristic of high delinquency areas--slum areas to be specific. His findings are borne out by other writers.[23-25]

Recognizing the high correlation between delinquency and educational deficiencies, MacIver makes a strong plea for increased school involvement to head off this disastrous course of events. The suggestion is made that the school should not limit its instructional programs to the three "R's," but should emphasize programs geared to stimulate the pupil's interest and strengthen his ability to cope with the outside world. Failing to motivate the student in the appropriate direction can lead to many frustrations which can start the maladjusted student off on a destructive career. Stanley Cohen, a sociologist who has conducted research in delinquency for many years, stated that:

> Most research into school vandalism indicates, in fact, that there is something wrong with the school that is damaged. The highest rates of school vandalism tend to occur in schools with obsolete facilities and equipment, low staff morale and high dissatisfaction and boredom among the pupils.[26]

Cohen chides those who go only so far in their research to explain or classify acts of vandalism, "If a boy breaks into his school and smashes up the classrooms because he has a grievance against the teachers, it is no help to call his behavior "wanton" and "pointless." The only end such labels serve is the teacher's need to hold himself blameless."

The Report of the President's Commission on Law Enforcement and Administration of Justice devoted a chapter to juvenile delinquency and youth.[14] This chapter contains a section on "Failure in School and Delinquency: The Downward Spiral of Failure." The Presidential Commission unequivocably concluded that "...there is mounting evidence that delinquency and failure in school are correlated." The Report further observes that:

> It is of course difficult if not impossible to separate the part played by some schools from the innumerable other forces that may be related to the development of delinquent behavior. But both common sense and data support the view that the high degree of correlation between delinquency and failure in school is more than accidental.

One study published recently attempted to determine the causes of school vandalism by undertaking an investigation of secondary schools in Syracuse, New York.[27] The sample survey consisted of 16 junior, junior-senior, and senior high schools located in various sections of the city. Schools were selected in areas of varying socioeconomic levels and represented both academic and technical-industrial high schools. The overall research plan was designed to discover common elements in school situations that might be associated with vandalism.

Of the 14 characteristics of the school and its population associated with damage problems, only four appeared to be correlated significantly with damage rank: building age, window breakage, dropouts, and school location within a census tract of a specific socioeconomic level.

An interesting negative correlation was observed that conflicted with an a priori assumption that delinquent conduct in the community, especially arrests for mischief or truancy, is strongly associated with school vandalism. The investigation and analysis revealed in fact that two schools whose students had the highest arrest rates in the city experienced moderate to moderately low damage.

To develop insight into student-faculty-administrator-curriculum interrelationships that might affect levels of vandalism, the Syracuse school study group developed a series of questionnaires directed to the students and staff of Syracuse schools. Some general observations were made, based on a statistical analysis of responses to the questionnaire:[27]

1. Teachers

   - Teachers in high damage schools had a lower degree of identification with the school.
   - Teachers in high damage schools reported more frequently (compared with low damage schools) that parents were uninterested in or unfavorably disposed toward the school.
   - Teachers in high damage schools were more concerned with relatively impersonal factors in the school; this contrasts with teachers from low damage schools who appeared to be more preoccupied with personal relations and their effectiveness.

2. Students

   - Students in high damage schools showed a relatively low level of interest in the academic program (boredom) and a relatively low degree of self-identification (indifference) with the school.
   - Students in high damage schools were preparing for jobs rather than college.
   - Dropout rates were highest in the high damage schools.

By means of interviews held with faculty and administrators, the study group sought to develop a history of each of the schools being sampled. Four significant interrelationships were observed, but there was not always a convincing correlation with levels of vandalism:

1. Change and instability

One conclusion reached was that high damage schools are in a low socioeconomic area subject to a high transiency rate coupled with unstable conditions, such as frequent turnover in school staff and changing policies and community changes. Thus, a student in the unstable environment is less likely to identify with the conventional values of education and property compared with a student residing in a more stable, middle-class neighborhood. Some evidence contradictory to the above general conclusion was found, however, in that two schools located in a low socioeconomic area did not have "expected" high rates of damage.

2. Administration and leadership

An atmosphere of insecurity leading to anxiety and confusion among the students and teachers seemed to exist where communications were poor between the principal, teachers, and students. The study, however, did not correlate this situation with any level of high or low vandalism incidents. Thus, this aspect appears inconclusive regarding contributory factors leading to high vandalism rates.

3. Identification with school and its values

Low morale within the school was in evidence among teachers and particularly students where there was a lack of involvement in school affairs. The study observed that the resulting alienation of staff and students decreased the school's effectiveness in the control of conduct. Again, no correlation was indicated between this problem and level of vandalism incidents.

4. Welfare

Dissatisfaction among the students arose when they felt that the school programs did not meet their needs or that the administration was insufficiently concerned with their welfare. Obsolescence and disrepair of school equipment and overcrowding were interpreted by students as a lack of interest in their welfare. This attitude was reflected in lack of compliance with school procedures and with overt action against the tangible aspects of the school--i.e., physical plant and equipment.

The Syracuse school study contributes a degree of understanding regarding underlying factors that influence overt expressions of rancor against those schools that experience moderate to high levels of vandalism. The study also tends to lend credence to the concept that schools should become more attuned to community needs. In Britain, for example, a

research effort similar to the Syracuse study, but oriented more toward determining delinquency rates associated with certain schools, raised the question of whether the schools have been partly responsible for conditioning children for delinquency.[28] The authors of this article emphasize that in Britain "...education is concerned not only with academic achievement but also with social behavior. So it is perhaps not surprising that some schools seem to exert a positive and beneficial influence on the conduct of their pupils as well as on their attainment."

Further evidence supporting the theory of "delinquent schools" can be found in discriminatory practices of expelling the delinquent youth from school. The CYA has noted that while an increasing number of schools have been developing programs and policies designed to keep parolees in school, a number of them have been pushing them out as undesirables. We suspect, but have not been able to secure data to substantiate our suspicions, that many schools experiencing difficulty with incorrigible youths take the relatively easy solution of removing them from the school.

Table 4, which characterizes youths committed to the CYA, shows that in only 7% (boys) and 8% (girls) of the cases were there no records in the schools regarding deviant behavic.. Thus, a useful research project could be undertaken to determine from the school records the schools' history of involvement in correcting a juvenile's ways from the first indication of maladjustment.

IV VANDALISM CONTROL TECHNIQUES

"San Francisco Vandal-Proofing City Schools" read a banner headline from a local newspaper exposing the problem to the general public.[29] The most startling aspect of the article was the lead paragraph: "The San Francisco Board of Education is planning to spend more than $100,000 to turn its schools into vandal-proof fortresses" (emphasis added). The remainder of the article, however, merely discussed the window breakage problem and announced that a decision had been made to substitute unbreakable Lexan and other plastic materials for glass in windows.

The use of the term "vandal-proof fortresses" in the above mentioned article raises the fear that this type of thinking currently may be gripping those school district officials who are hard pressed to reduce the toll of vandalism. In some discussions, we have heard the thought expressed that schools figuratively should be "hardened" to resist penetration by vandals. The cost to provide for maximum security under this concept would be prohibitive in our view. But even if a school were provided with the best security system that money can buy, we believe that this system would fail if it were the only preventive measure taken. Evidence acquired over the past several years indicates that this maximum security approach to controlling vandalism has proven ineffective over time. From our literature search and current discussions with school officials and insurance representatives, we can cite dozens of instances where alarm systems and security patrols by themselves have not achieved expected results.

In two successive annual meetings occurring in 1966 and 1967, school business officials reported on vandalism and protective devices.[30,32] In our opinion, the papers were objective in the views expressed regarding vandalism control measures and imaginative in pointing out corollary efforts that must be undertaken if long term solutions to the problem are to be reached. Some of the salient points in the papers are briefly summarized.

One of the speakers began his discussion by stating, "Vandalism cannot be eliminated.[30] He then said, "We must review the problem of vandalism in relationship to budgetary realism, which is in essence, the approach to all of our school problems." We would like to put those remarks in context with the type of analysis that has gained wide acceptance in recent years--the systems approach to the allocation of limited resources for maximizing or optimizing return on investment. In other words, the systems analyst has devised analytical techniques whereby alternative proposals for allocating funds can be evaluated to determine the relative effectiveness of a given plan--i.e., a measure of effectiveness is derived. Thus the decision-maker, the school budgetary officials

for example, can weigh the alternatives against expected returns. Specifically, we are saying that the vandalism control measures that have been instituted in many school districts have not been evaluated in terms of expected return. We believed that this was the case intuitively, and our research conclusions, although based on fragmentary data, largely substantiate our initial belief.

Another speaker at the 1966 school business officials' meeting,[29] eloquently voiced a concern that we expressed earlier regarding "vandal-proof fortresses" for the San Francisco school system:

> Those schools which have utilized high fences, windowless walls, elaborate alarms and even watchdogs have probably achieved their main objective: namely security. But except in extreme cases, schools cannot be designed to resemble dark, forbidding monoliths intended to repel all intruders: No one can fault us if in our frustrated moments we look to these absolute solutions to find our peace of mind; but if we are worth our salt, we must be more ingenious than to sacrifice any portion of the quality of the environment for learning. We might find it useful to examine the nature of the vandal himself.

This speaker further explored the "vandal" and observed that he is either motivated or unmotivated in his activities once he has gained entrance to the school property. Many papers have been written on this subject. But the major point is, if the intruder is bent on burglary or mischief, the longer he remains on the premises, the greater the chance he will have to inflict damage. It was concluded that "...motivated or not--neither type of intruder deserves sympathy. Our job is to prevent violence and damage as best we can and to assist in apprehending violators as best we can."

This latter statement appears contradictory to the fourth conclusion taken from a CASBO report cited earlier[5] but quoted completely here: "A system of vandal prevention based upon apprehension of the vandal is generally ineffective. This does not mean that apprehension of the vandal should be neglected. The contrary is true." It is evident that school authorities are both uncertain of objectives for vandal control measures and are at a loss to chart an appropriate course of action leading to satisfactory results. The equivocal statements of apprehending vandals is indicative of the problem. One cited school official resigns himself to the premise that it is impossible to design and build a vandalproof building. Thus, his solution is to minimize temptation and erect barriers against those who can be deterred. If this is a prevailing concept, and we believe that it is, we raise two important questions: How much deterrence does a school system need and want? How much of the budget can be reasonably expended to achieve a given level of deterrence? A possible third question is: Considering the cost and trouble to devise and maintain an adequate security system, should the school district just ignore the problem and accept the losses as a "normal" expense? Nowhere in the literature or in our discussions with individuals have we heard or seen these basic questions raised.

What we have found is a variety of physical measures that various school districts have undertaken. These measures have been described in many publications, such as those referenced in the text of this report. Several are outlined below.

Window glass breakage control

- Metal grilles and screens
- Substitution of plastic or impact resistant glass for window glass
- Perimeter, exterior lighting
- Minimum of glass area in new building design and construction
- Incentive program for using funds to furnish useful equipment that otherwise would have to be diverted for glass replacement

Theft or burglary control

- Intrusion alarms--silent or audible
- School security patrol augmented by law enforcement personnel
- Staggered custodial availability during off hours
- Contract security force (augmented by dogs)
- Fencing of property
- Tamper-proof locks
- Improved equipment inventory control procedures
- Tamperproof lockers and equipment storage areas

Breaking and entering

- Measures similar to those listed above

Malicious mischief and arson

- Procedures to deter breaking and entering
- Advanced fire detection and alarm systems

- Design and construction of marproof and damage-resistant equipment and structures

- Design of facilities to minimize danger of fire spread

Punitive measures

- Apprehension and forced restitution for damages

The various articles discussing the above measures that we have reviewed have given conflicting results. For example, responses from three school districts to a survey in 1968 reported by the Educational Research Service[6] revealed the following:

> One school district has had notable success with sonic detection devices; another has found the use of security personnel "significantly excellent" when compared with detection devices; a third has yet to find any protective measure which has served to "markedly diminish" vandalism.

Our early contacts in the mid-San Francisco peninsula region informed us that a silent alarm system installed in a senior high school is ineffective and will be replaced. In another district, losses resulting from burglary and vandalism still persisted at a high rate despite the installation of alarms.

A feature article in one publication on antivandalism procedures for schools indicated that the annual vandalism cost for the city of Boston exceeded 1.70 per pupil in 1963.[33] Reference 2 indicated that the cost per pupil in Boston for 1966 was $2.30--an increase of over 25%. This increase occurred during a period when the Boston school system reportedly undertook a comprehensive study to determine the location, nature, and extent of vandalism and then "...an elaborate, aggregate, aggressive antivandalism program was formulated and steps taken to launch a city-wide campaign." The physical security measures instituted during that period in Boston evidently were not an overwhelming success, based upon the increase in vandalism losses. There is insufficient information available at this writing to determine the reasons for increases in vandalism despite the pronouncement that "aggressive actions" are to be taken to control damage.

The city of Los Angeles has been cited as having taken vigorous action to control vandalism in its schools. The low per pupil cost (of 97¢ during 1965-68) compared with such costs in other major cities may be construed by some as evidence that the problem in Los Angeles is being controlled. The school system is reported to maintain a security force of 125, which no doubt is supplemented by extra custodial service paid to watch over the buildings during the after-school hours. Moreover, electronic intrusion warning systems have been installed in selected areas.[33,34] Based on our observation of vandalism costs (Tables 1 and 3), however, we note that

Los Angeles shows an increase of at least 30% over the past three years in losses due to vandalism. This increase came despite the extensive security measures taken. The reason the per pupil cost appears low in Los Angeles compared with per pupil losses shown for other major cities is that the losses are spread over a much larger enrollment, except for New York City. In terms of annual dollar costs incurred that are attributable to direct losses and control measures, we suspect that the total outlay in Los Angeles may be in excess of $2 million. We suspect also that, as in most cities, a small percentage of the schools will show the highest incidence of vandalism. Unfortunately, we have no basis at this writing for speculating on the effectiveness of security procedures for the Los Los Angeles school system, other than our concern over increases in the dollar losses.

Having considered data furnished by CASBO and looking at some 120 survey returns, we selected one major California school district for a detailed analysis of reported incidents. The school officials were extremely cooperative and furnished raw data on school incidents and the cost to equip and maintain their security forces. Despite the school authorities' optimism with regard to the "success" of their efforts to control vandalism, our analysis shows that these efforts leave much to be desired.

The size of the school district chosen for consideration is about 60,000 average enrollment and includes some 100 buildings. Several of the schools had audible alarm systems, which are being replaced. About 12 facilities, including a warehouse, contain silent alarm systems that are connected through the fire alarm system to the central fire district headquarters. If an intruder sets off an alarm, the fire district headquarters relays that alarm to police headquarters and the latter dispatches a patrol car. The 8-man school security force is equipped with transceivers and can receive police radio messages regarding reported school incidents.

The annual operating costs to provide security protection consisting of the regular school security officers, security watchmen, custodial watchmen, and special shift custodians total approximately $350,000. The initial cost for the personnel equipment and alarm systems totals about $51,000. Another $75,000 is being invested in alarm systems for several additional schools. Plans have been made to install alarms in an additional 20 schools at an estimated cost of $320,000.

The currently proposed fire insurance premium of $156,000 for a one-year period calls for six separate schedules with varying deductible amounts totaling $255,000. For the 1967/68 school year, total losses attributable to vandalism including fire, burglary, and malicious mischief, were approximately $250,000. The fire insurance premium for that period was about $77,000 with a loss deductible amount of $100,000, and collections totaled about $183,000. It should be noted that the fire insurance premium has doubled and the loss deductible amount has increased by a factor of 2.5. From these figures, it can be seen that the annual cost of vandalism is running about $750,000. When potentially uninsured losses ($255,000 loss deductible) and amortization cost over a five-year period for security

equipment (about $25,000) are added, the total annual cost exceeds $1 million for this district. And there are probably other hidden costs that should be added to this figure.

The most important question is whether spending this money at a ratio of 2 to 1--security plus insurance costs to vandalism losses--is justified. Before this question can be answered intelligently, the loss history, before and after costs of the implemented security measures, must be obtained. Unfortunately, this type of data was not readily obtainable from the district being studied. But by inference perhaps a somewhat crude measure of effectiveness can be derived.

The loss history of the district shows a sharply rising increase from 1965 to 1968--up 55% from the 1965-66 period to the 1966-67 period and up 82% from 1966-67 to 1967-68. The security force was increased during this period and silent alarm systems were initially installed in 1967 to augment already installed audible alarms. These alarms were apparently placed only in important selected areas--not at multiple possible points of entry.

Table 5 is a tabulation of reported incidents during the 1968-69 school year for only those 11 schools having silent alarm systems. It is evident that the apprehensions resulting from the alarm system are few indeed--3 out of 80 reported break-ins. Apprehensions resulting from encounter of the intruders by custodial or security personnel numbered only 2 in these schools. The measured deterrent effect of alarm or custodian encounters numbered 10 suspects frightened off. There was no way to measure the apparent deterrent effect of the presence of custodial and security personnel in these schools.

The table also contains a summary of theft, arson, and damage incidents. A significant number of such incidents occurred during school hours. Thousands of dollars of audio-visual and business machine equipment and musical instruments were stolen during this period in these schools. Arson incidents were largely incendiary fires started in trash receptacles, lockers, bulletin boards, etc. Figure 2 is a frequency distribution of fires occurring in the 100-school system. Examination of the chart shows unexpected peak periods in the early afternoon. There was also repeated daytime damage to fire sprinklerheads. Break-ins during hours when schools were closed largely occurred through windows or by means of picked door locks and stolen keys. Window breakage and fires were cyclical in some schools.

For the year ended December 1968, the California district under study reported for its 100-facility school system the following incidents of vandalism: about 220 incidents of arson, 360 incidents of vandalism entries, and 325 burglaries/thefts. Unfortunately, we did not have the time to determine what effect the security patrols have had in apprehending vandals or frightening them away in all of the schools as was shown for 11 schools in Table 5. But from a cursory look at the reports, the "success" rate seemed as poor as in the 11 schools whose records we scrutinized.

Table 5

NUMBER OF INCIDENTS IN A SELECTED CALIFORNIA SCHOOL DISTRICT OCCURRING IN SCHOOLS EQUIPPED WITH SILENT ALARM SYSTEMS 1968-1969

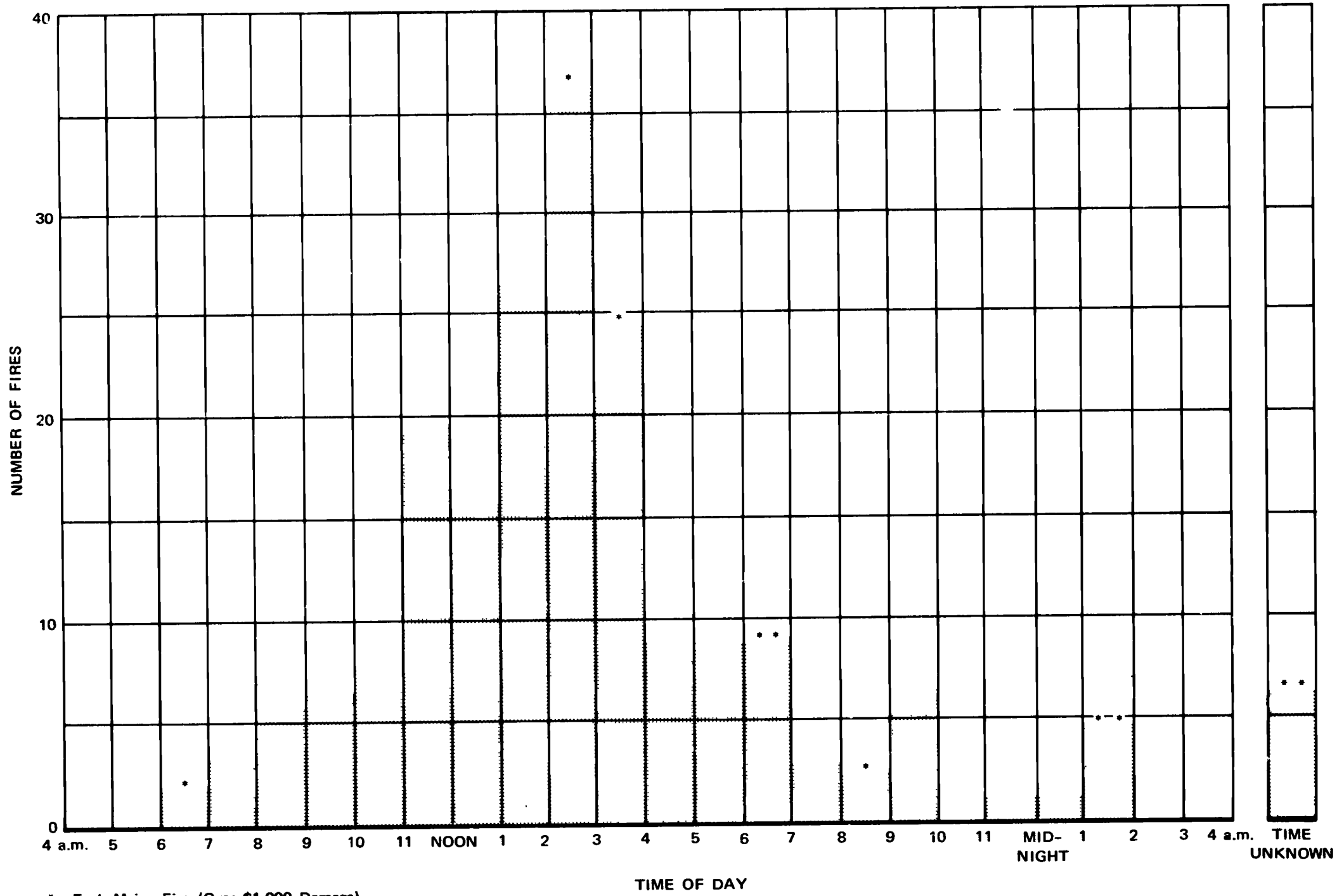
School	No. of Incidents	Apprehension Due to: Alarm	Apprehension Due to: Custodian or Security Force	Break-ins	Arson	Damage	Theft	Intruder Frightened Away by: Alarm	Intruder Frightened Away by: Custodian
1	5			4	1	2	3		
2	30			7	7	7	18		2
3	52	1		16	30+*	19	20	1	1
4	18		1	11	1	8	11		3
5	15		1†	7	1	5	11		
6	3	1		2	--	3	1		
7	10	1		5	2	3	3		1
8	17			16	4	11	5		
9	6			5	--	4	4		
10	10			4	5	1	4		
11	5			3	--	1	4	2‡	
Total		3	2	80				3	7

* The great majority of "arson" incidents are fires of incendiary origin set in trash receptacles, lockers, bulletin boards, etc. Damage was extensive in a few instances, however.

† Apprehension by police upon citizen report of incident.

‡ Silent alarm activated but one incident of major theft successful with no apprehensions.

Source: "Security Notes," A California School District, 1968-69.



* = Each Major Fire (Over $1,000 Damage)

SOURCE: Stanford Research Institute.

FIGURE 2 FREQUENCY DISTRIBUTION OF INCENDIARY-TYPE FIRES IN A MAJOR CALIFORNIA SCHOOL DISTRICT, 1968-1969

Study of crime reports from this district for the 1968-69 school year showed the following characteristics of certain crimes at schools:

1. Fire

The vast majority of fires were set during school hours--about half of all fires were set between one and four o'clock in the afternoon. Fires that resulted in damage in excess of $1,000 were more evenly distributed around the clock. About one fire out of every five set appeared to be an earnest attempt to destroy a building (as opposed to nuisance fires in wastebaskets and trash containers). Of these, about one in three was successful in causing major damage (over $1,000). Fire damage accounted for approximately 50% of the dollar cost of losses from fire, property damage, vandalism, burglary, and thefts.

2. Vandalism (Property damage)

Vandalism accounted for approximately 30% of the dollar cost of losses. Slightly over half of the costs of damage from vandalism stem from glass breakage. The main targets of vandalism, aside from window glass, are cafeterias, auditoriums, offices, and easily damaged fixtures, such as fire hoses or security lights. Interior vandalism is often found coincident with an attempted burglary; the frustration of not being successful in finding valuables evidently is released against the building. Although the times of acts of vandalism were not reported, it is presumed that the greatest incidence occurs after school hours.

3. Burglary and theft.

These crimes accounted for approximately 20% of the dollar cost of losses. Burglary occurred primarily at night, but actual or estimated times were not always reported. Thefts and burglary can easily be confused since the disappearance of an article often is only determined by an inventory check; since an inventory is usually taken whenever there is a break-in, the break-in may be credited with the theft of an item that actually was stolen before, especially if the item is one that is not easily missed. The favorite targets of school burglars and thieves are business machines, musical instruments, tools, money, keys, and food (roughly in that order). These items are easy to sell; stolen school keys facilitate re-entry at a later date without leaving evidence of a forced entry. In 94% of the cases reported, entry into buildings was by breaking the glass from either a window or door, with the windows preferred over the doors by about five to one.

On the basis of the above analysis, it appears that the school district selected for study (and there are no doubt others in the same predicament) should perform research in depth to determine an appropriate course of action to bring the vandalism problem under control. We believe that further heavy investments in sophisticated alarm systems or security personnel in themselves may not provide the best solution. With respect to alarm systems, unless every possible point of entry is covered, a determined vandal will gain entry. The irony of this approach, however, is that the more alarms that are installed, the more potential false alarms there may be. That this is a problem is well-documented in the Senate report on "Crime Against Small Business."[12] This report sums up the false alarm problem succinctly:

> The best survey we know of was made by the Los Angeles Police Department for all silent alarms received during the week March 31 - April 6, 1967. The Department tells us that this was a typical week. It analyzed 596 alarms from more than 16 alarm companies, including all major ones. Excluding one very small company, the range of false alarms ran from 91 to 100%. The average for all companies was 95%. The department drew two conclusions from its study:
>
> 1. An enormous drain on the patrol forces present due to handling over 30,000 priority silent alarm calls each year,
>
> 2. The proportion of false calls is so high as to suggest that immediate remedial action is required.

As a direct result, the Los Angeles Police Department has reduced its response to burglar alarms to a lower priority.

An important fact thus becomes evident. An alarm system, if it does not bring a response by either law enforcement or other security personnel in time, is useless. Intruders bent on burglary will learn that such delays in response will permit them sufficient time to complete their missions.

We draw a distinction in this study between deterrence measures and preventive measures. Admittedly, it is debatable whether setting up stringent internal security procedures for safeguarding property can be described as a deterrent or preventive measure. Regardless of the definition used, we choose to think of a vandal prevention program as a much broader approach that would attempt to deal with students and the community as individuals and not as an unknown force.

With respect to this broad approach, we have learned of some interesting and perhaps successful approaches that a number of school districts have undertaken to control vandalism. In one school district, it was claimed that vandalism was completely eliminated by singling out the

trouble makers in the student body and concentrating on involving them in the effort to maintain an orderly school. Stimulating individual pride was the means used to motivate them.

Other school districts have been developing school beautification programs that are aimed at developing pride in the school among the student body. The concept of "community" schools appears to have some merit in certain areas where the local school becomes a focal point for community affairs involving the parents and others, as well as students. In this approach, the school becomes a symbol of community cohesiveness. Some success in lowering vandalism has been achieved by having adult classes during the early evening hours when the buildings are most susceptible to mischief makers, since the physical presence of people in the school has a natural preventive effect.

Some school districts have been experimenting with having local police officers assigned to particularly troublesome schools. These officers conduct special classes to acquaint youngsters with the police in a manner to produce a better image than perhaps existed before. Their presence also has the effect of demonstrating that an orderly school will be maintained.

Perhaps the most intangible preventive programs are those related to long range school planning. First, more innovative design of school buildings could have the double effect of making the classroom and surroundings more pleasing to the student and community while making them vandalproof in the sense that breaking and entering could be prevented more easily. Again with reference to structural design, maintenance could be facilitated by the use of equipment and materials that are less susceptible to damage. A second major aspect of school planning for the future concerns the educational approach as noted earlier in the discussion on "delinquent schools." There are programs being conducted that recognize that current educational needs require innovative techniques.

Unfortunately, we have been unable during this brief investigation to examine these "preventive" measures in detail. The information available to us is fragmented, and programs are being sponsored by so many districts and agencies of the state and federal governments that it is difficult to evaluate their effectiveness. We believe, however, that the "preventive" approach to vandalism may in the longer range be the most cost-effective solution. Evidence in the juvenile delinquency prevention program tends to show that the overall cost to society is less using preventive measures compared with allowing the potential delinquent to continue in his deviant behavior with the result that he eventually enters the criminal justice system.

V VANDALISM CONTROL--A RESEARCH CONCEPT

It is evident from our somewhat cursory analysis of the school vandalism problem that individual school districts are at a tremendous disadvantage in determining what measures should be undertaken to curb the increasing costs attributable to vandalism. The literature describing the measures various school districts have undertaken are seriously deficient in describing the environment or the conditions that have caused certain measures to succeed or fail. Most of the available information regarding vandalism control addresses the problem from a deterrent approach--i.e., physical means to protect and deny access to school property. While such deterrent measures as anti-intrusion devices, security patrols, fencing, and property control, must be instituted as a minimum measure, our observation is that by themselves they have not been as successful as district officials had hoped they might be. Why are these deterrent measures ineffective? There are probably many reasons basically stemming from the problem duality--deterrence versus prevention. Several are:

1. The measures that have been instituted represent only a token effort having only a transitory or minor impact.

2. The causes of vandalism have not been adequately identified; therefore, the desired deterrent also has little impact. In other words, if the causative factors are not understood, how can a vandalism control program ever be successful?

3. Records are inadequate in describing the total cost, time of occurrence of an incident, and types of incidents. Therefore, security procedures that are instituted are frequently inadequate because of a lack of precise information.

4. Where vandalism has been a severe problem, in some instances the physical measures implemented have had a negative effect--i.e., a greater challenge is offered to the determined vandal.

5. Perhaps the most subtle, negative effect is the general appearance of an armed, defensive fortress designed to keep the youngsters "in line" during school hours and off the premises after school hours.

Recognizing these factors and the broader implications of delinquent behavior in the schools, we have concluded that a methodological research approach must be undertaken that would systematically evaluate those factors having a significant effect on vandalism control. The prime objective of the research effort would be to evaluate alternative measures that have an impact on overall costs attributable to vandalism. As noted

throughout the discussion, there are many facets to the problem and many solutions. Because the various measures are complex and interdependent, we propose that the best mechanism for obtaining valid data is to conduct a series of controlled experiments in selected school districts. These experiments would implement selected measures to permit the observation and analysis of results. To obtain the maximum amount of valid data possible, it would be necessary to instrument* several experimental facilities and to observe other facilities merely as a control. From these experiments, we would hope to learn which techniques offer the best solution to bringing the costs of vandalism down to an acceptable level. The evaluated results should then be published in the form of guidelines to assist school district officials in setting up workable vandal control programs and to provide the necessary evidence to insurance carriers so that schools again will be considered preferred risks and thus bring down overall insurance costs.

The above is a highly generalized concept that will require a period of time for research and experimentation to achieve near term results and longer range objectives, particularly where innovative school design, educational programs, and administrative procedures would be involved. To achieve the desired objectives, we propose that a multiphase program be carried out, beginning with a modest effort to determine the appropriate approach, particularly to enlist the support of the many concerned parties such as: federal, state, and district educators; professional educational and business associations; the insurance industry; and the security industry (manufacturing and service). The phased research program would encompass the following aspects:

- Phase I--Comprehensive Survey of School Vandalism over a Three-Year Period

  Determine on a gross basis the nature, extent, and costs of various aspects of school vandalism in a selected state to establish a pattern by district. If California, for example, were the state to be surveyed, this phase could be minimized because of the recent survey conducted by CASBO. Even this survey is incomplete in several respects, however.

- Phase II--Selection and Evaluation of Candidate Experimental and Control Schools

  Using information developed in Phase I, select candidate school districts (and schools) on the basis of variable vandalism levels and geographic and socioeconomic environmental factors. The selected schools records would be analyzed in depth for pertinent data on all aspects of vandalism costs and unique characteristics of schools. If

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* The term "instrument" as used here denotes a means of gathering data in a rigorous manner.

the records are not complete, procedures would be established to record appropriate information for a period of time.

- Phase III--Site Survey of Candidate Schools

  Based on the evaluation of the vandalism history obtained in Phase II, determine appropriate vandal control measures to be instituted in selected schools by investigating the school and community environment. More than likely, some techniques would have already been employed and should be considered. The objectives for this phase must be carefully laid out. For example, where a given school may have had an extensive security system but the building has been entered after school hours or theft and vandalism occur significantly during school sessions, questionnaires or a series of interviews or both may be appropriately directed at the student body, teaching staff, and administration to determine why the system has failed and what are the factors and conditions leading to vandalism incidents. It may be appropriate to increase security to apprehend the juveniles for detailed questioning to determine whether they are actually students in the school being vandalized. Cross correlations with local law enforcement and juvenile justice authorities would be extremely important to determine school associations of youths who are apprehended as delinquents.

- Phase IV--Implementation of Vandal Control Measures

  Having determined from the Phase III site survey the nature of vandalism incidents and having established objectives for vandal control, institute specific measures and appropriate data recording techniques. The concepts of deterrence versus prevention should be tested during this phase and the results analyzed on the basis of costs and benefits.

- Phase V--Security Systems Analysis

  Concurrent with the Phase III and IV efforts, conduct a state-of-the-art evaluation to match hardware with requirements for protecting candidate schools. Security force concepts also would be evaluated. Those hardware systems and manned patrol units appearing suitable would be employed in the Phase IV effort.

- Phase VI--Analysis of School Insurance Underwriting Practices

  Concurrent with the preceding phases, conduct an analysis of school insurance underwriting practices, with the full cooperation of the insurance industry and the State Department of Insurance to evaluate the basis on which insurance coverage is written for school districts. The statistical information base used in underwriting would be analyzed to determine where improved data recording and analysis techniques could provide more precise