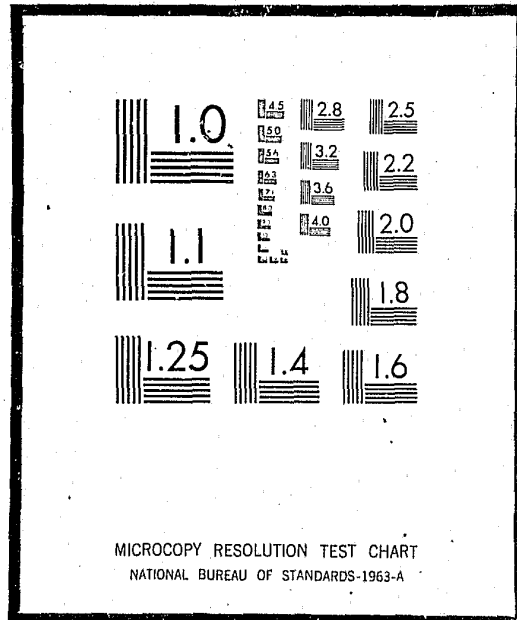


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U.S. DEPARTMENT OF JUSTICE
LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
NATIONAL CRIMINAL JUSTICE REFERENCE SERVICE
WASHINGTON, D.C. 20531

Date filmed

2/25/76

CADAVRS

COMPUTER ASSISTED DIAL ACCESS

VIDEO RETRIEVAL SYSTEMS

prepared by

Project Evaluation Unit

Governor's Commission on Crime Prevention and Control

March, 1974

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APPENDIX 38

I. SUMMARY

The following study of the GADAVRS project points to the overall efficiency of the project and to the general effectiveness of the plan. To a lesser extent, this study attempts to analyze the project's effectiveness at the subgoal or operational level. In short, this study addresses two questions.

1. How well were the project's plans placed into action?
2. Did the project's planned and assumed objectives systematically lead to the desired achievements?

The GADAVRS project is an experimental police in-service training project. Its purpose is to expose the vast majority of law enforcement officers in the state to police in-service training topics through the use of video tapes.

The major emphasis of this study is concerned with how well the project's plan was implemented and what problems the project experienced relative to the general areas of efficiency and effectiveness. Since the project is still in operation, this study may not reflect the current situation of the GADAVRS project. The time duration under study was from the inception of the project until September 1973, a time span of about 34 months.

Due to several constraints, hard and fast conclusions pursuant to the project's impact cannot be determined with any high degree of confidence. Nevertheless, the report supports the following general findings.

1. The GADAVRS project was implemented on a scope far less than described in the plan.

The CADAVERS plan was to include all police departments and officers in the state. In actuality, about 15% (73) of all (490) law enforcement agencies in the state considered themselves participants in the project. These 73 participating departments account for 74% of all law enforcement officers in the state (3,676 of 5,000).

2. Utilization of the in-service tapes by those participating in the program is far below reasonable expectations.

Twenty-one months after the first series of in-service tapes became available to all (73) participating police departments, only 35% (1,296) of all participating officers (3,676) had received six hours of in-service training through the CADAVERS method. Approximately 75% (2,745) of all participating law enforcement officers (3,676) had received an average of three hours or less of in-service training by the CADAVERS method. Overall, about 26% (1,296) of all the police officers in the state (5,000) had taken full advantage (six hours of training) of the project, while 75% (2,745) had viewed at least one tape.

3. The CADAVERS plan for resources requested did result in the performance of planned activities.

Over a period of three years the CADAVERS project costs will total nearly \$571,206 (soft match included). There is every indication that the primary product of this project, in-service training tapes, will be produced on schedule with the same amount of uniform quality. The study shows that as of December, 1973 the project had expended about 73% of its total estimated authorization (\$572,806) while meeting approximately 67% of its production target.

The project's funding period will terminate in about six months, which means that a short extension may be necessary in order that the project can meet its production target of 43 in-service training tapes.

4. The present scope and utilization of the CADAVERS project is an indication of the current attitudes toward police law enforcement efforts for in-service training.

The CADAVERS project was to reach 68% (3,378) of all law enforcement officers in the state (5,000) through direct transmission. In turn, those departments which were selected as direct transmission sites were to share the tapes with neighboring departments. Approximately 29% (1,442) of all police officers in the state were to be reached through this "sharing method." In actuality, however, only 298 of the expected 1,442 law enforcement officers in the sharing pool were exposed to the CADAVERS tapes. This means that the "sharing method" or pooling efforts were only 21% effective.

5. The actual cost per man-hour of in-service training was significantly more than anticipated by the project's plan.

The CADAVERS plan anticipated a per man-hour cost for in-service training of approximately \$7.83. The study shows that the average actual cost for in-service training through the CADAVERS method is approximately \$22.79 per man per hour of in-service training. The reason for the significant variance between the expected and actual per man-hour cost is due to the lower utilization of the tapes and less than expected scope of the program.

6. The CADAVERS project did not adequately seek out solutions to previously identified major constraints to in-service training for law enforcement officers.

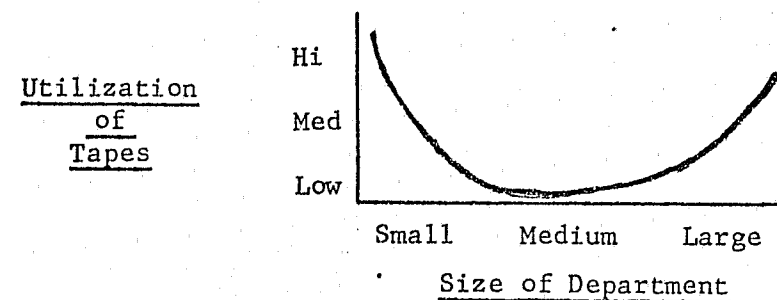
The major constraints to in-service training for law enforcement were identified by the Governor's Commission on Crime Prevention and Control as early as 1972 and reaffirmed in each succeeding year up to the present. In short, the Commission staff has identified, through a continuous research effort, the following constraints to in-service training for the vast majority of police departments in the state.

1. The lack of time necessary to carry out an in-service training project.
2. The lack of in-house personnel qualified to carry out an in-service training project.
3. The lack of resources and facilities to carry out an in-service project.

The Commission staff report concludes:

Without a pooling of efforts for in-service training, and without innovative programming for in-service training by the state, regional, county and local agencies, these problems will continue to exist.

The two major constraints imposed upon cost/effective in-service training are the size and distribution of law enforcement agencies in the state. The size of a police department has a circilinear relationship to the utilization of the in-service tapes. That is to say, utilization of the video tape remains high until a department reaches a certain size, then steadily decreases until reaching another size, then changes to an up-swing in the utilization.



There appears to be two factors which effect the above utilization curve. First is the displacement costs for in-service training. Second is whether or not the department has an assigned training officer.

For the smaller departments in the state, displacement costs do not, generally speaking, have much effect on the utilization of the video tapes. This is because the training is often conducted after the officer has worked his shift or on his days off. Their patrol time is not sacrificed or traded off for in-service training.

However, as the police departments become larger, displacement costs for in-service training do become a consideration. Due to the increasing role of formal labor relations, medium size police department administrators are finding that in-service training time must be reimbursed to the officers. The majority of medium size departments in the state do not have a full-time training officer to schedule and coordinate the police officers on the department. This, in turn, makes it highly unlikely that the effort necessary to achieve maximum use of the GADAVRS project will occur. In the larger departments where specially assigned officers coordinate and schedule training sessions, utilization does seem to increase. Yet, the rate of utilization seems to decrease.

The distribution of police departments throughout the state has a definite effect on the GADAVRS program. Let us assume for a moment that all police departments in the state are of equal size and equally distributed in the state. If this was true, we could simply calculate the program costs (not including capital expenditures, displacement costs and depreciation) by

dividing the number of police officers seeing the tapes into the cost to produce and transmit the tapes. This would yield a per man-hour cost of approximately \$7.82. Yet none of the above holds true. The police departments in the state are not of equal size nor are they equally distributed. The result is that the ideal per man-hour costs for the CADAVERS program, based on the total utilization and current distribution of police departments, is \$13.41.

It is the opinion of the Project Evaluation Unit staff that just as consolidation of other support services (records, crime labs, etc.) increases cost/effectiveness, so efforts toward consolidation would ensure a more cost/effective in-service training delivery system. Displacement costs could be diminished through coordination between one or more police agencies. Training officers could be shared between departments. Lastly, consolidation of smaller departments will reduce the costs of in-service training to a point where maximum utilization will occur at a rate necessary to keep the rural and urban law enforcement officer informed and trained in the latest techniques of this profession.

II. INTRODUCTION

This study will address itself to a review of the CADAVERS (Computer Assisted Dial Access Video Retrieval Systems) project from two perspectives. First, this study will review the proposed CADAVERS project and ascertain whether or not there are variances between the proposed plan and the actual project as implemented. Second, this study will review the activities of the CADAVERS project. The analysis of activities will be carried out relative to the project's assumption that an achievement of activities will accomplish program sub-goals which in turn ultimately reach the primary program goals of this project.

In sum, this evaluative study, like most evaluation research, attempts to address itself to the three basic program assumptions of the CADAVERS project. They are:

1. The assumption that the use of resources planned will result in the performance of planned activity.
2. The assumption that each sub-goal (and its corresponding activity) must necessarily be attained before the program goals can be attained and that attainment of all sub-goals will result in attainment of program goals.
3. The assumption that performance of planned activities will result in attainment of the desired program goals.

The CADAVERS project, like other projects, offers many constraints relative to evaluation efforts. For example, the lack of clear and quantifiable program goals, the absence of reliable data and appropriate evaluation methodology are but a few of the more common constraints to evaluation research. The direct result of the aforementioned constraints, as well as other exter-

nalities, preclude any study relative to the effectiveness of this project (assumption three above). However, there is a minimum amount of data to undertake an analysis of program assumptions number one and two. Therefore, the process of this study will attempt to determine how well the CADAVERS project accomplished the following:

1. How well were the project's plans placed into action?
2. Did the project's planned and assumed objectives systematically lead to the desired achievements?

To answer the above questions, a systematic analysis of resource allocation and program activity distribution for the CADAVERS project will be employed.

III. BACKGROUND

There are three state agencies who play a major role in police training. The Attorney General may promulgate rules and regulations pursuant to the training of peace officers. The Minnesota Police Training Board, acting as an advisor to the Attorney General, may research the needs in the area of police training and comment on the uniformity and quality of present or proposed police training activities. The Training Division of the Bureau of Criminal Apprehension (BCA) is responsible for the implementation of those rules and regulations established by the Attorney General.

The three largest police departments in the state (Minneapolis, St. Paul and the Highway Patrol) conduct their own recruit and in-service training. The BCA has been the primary source for police in-service and recruit training for the approximately 490 other police departments in the state. As a general guideline, it is estimated that approximately forty percent (40%) of the BCA training division's fiscal year allocation is directed toward in-service training seminars. The remaining sixty percent (60%) of their allocation falls under recruit training categories.

Historically, the demand for in-service training has increased. The major stimuli for this demand has been the increased occurrences of crime in the rural areas of the state and the general attempt to professionalize or up-grade the caliber of police officer in the state.

During the mid and late 1960's, a series of U.S. Supreme Court decisions pursuant to criminal laws and procedures resulted in the necessity for significant operational modifications in police departments across the nation.

This situation stimulated the search for alternatives to disseminating the aforementioned information to all police departments in the state.

In 1970, the Attorney General, in cooperation with the Minnesota Educational Network (KTCA -- Channel 2) proposed an innovative police in-service training project. The project, named CADAVERS (Computer Assisted Dial Access Video Retrieval Systems, an acronym for the technological delivery system to be used) was to economically and logistically facilitate the dissemination of necessary information in regard to the changes in the laws dealing with search and seizure, arrest, interrogation and other police operations which were affected by changes in the laws.

The 1970 proposal submitted to the Governor's Commission on Crime Prevention and Control (GCCP&C) describes the unique communication delivery system as follows:

The system to be utilized is designated as CADAVERS (Computer Assisted Dial Access Video Retrieval System), a process now in relatively wide use in schools as an educational tool. There will be placed, in approximately 30 locations around the state...video tape recorders (VTRS) of a designation and make sufficient to provide uniformity of reception and recording service. As noted, 30 VTRS strategically placed will bring the transmission to 90% of the state's law enforcement personnel. Each VTR will have mounted upon it an electric decoding device (Black Box).

A [in-service training] program reduced for transmission, placed onto a master video tape, will be placed upon a broadcast quality video-tape transmitter device. Each filed VTR will be given a specific number which corresponds to electronic gear on the station's master control board. Prior to transmission of the program, a simple switch will be thrown which activates a particular VTR out in the field; and, after a period of time sufficient to allow the recorder to come up to speed, the master video tape will be broadcast from the studio of KTCA TV, Channel 2.

The broadcast will be recorded on the VTRS automatically and upon as many VTRS as have had their switches activated.

After transmission, a tone will be transmitted ...

In sum, the means chosen to re-educate the police on "new" criminal laws was in-service training. The way chosen to accomplish this was a computerized delivery system of video tapes previously implemented for state educational facilities. This system, known as CADAVERS, was to be adopted for utilization by police departments for in-service training.

III. PROGRAM DESCRIPTION

A. GOALS

The program goal of the CADAVERS project, as expressed in the first year grant (1970), was to bring the current police field procedures into compliance with U.S. Supreme Court rulings relative to search, seizure, investigation, arrest and interrogation.

The second year grant (1972) had expanded goals. Along with the aforementioned first year (1970) goals, the second year grant (1972) stated a secondary goal of preventing juvenile delinquency by training officers to deal with, and refer, problem children to the proper social service agencies. A third goal sought to increase local law enforcement's effectiveness through the use of criminal investigation.

The statement of goals and therefore the general intent of the CADAVERS project has broadened during its two and one-half years of existence. Originally, the grant's intention was to engage in the more legalistic areas of law enforcement -- that is, criminal law and procedures. However, as is often the case with program goals, over a period of time the goals became modified and/or changed in response to real world situations.

In the case of the CADAVERS project, the project personnel, in an effort to be as responsive as possible, found it necessary to compromise between the original first year program goals and the needs for police training as expressed by law enforcement officials. This situation led to video in-service training programs, the subject matter of which reflected the more routine or

traditional areas of police procedures (see Appendix, page 30).

B. SCOPE OF THE PROGRAM

The CADAVERS plan proposed that approximately 90% of all police departments in the state would have the in-service tapes available to them. For those police departments who found themselves in the remaining 10%, 16 mm film copies of the tapes would be made available for their use.*

The plan to strategically locate thirty field units** throughout the state, as proposed, was implemented. In addition to the thirty units purchased by the project, some of the larger departments already had compatible components of the field unit and only needed a decoder in order to receive the transmitted tapes. This brought the number of departments receiving transmissions of in-service tapes from KTCA to 36. Assuming, as the plan did, there would be a sharing of the tapes between those police departments receiving the transmission and their neighboring police departments who did not have the field unit, the expected coverage of 90% of the departments was derived.

The plan assumed that approximately 540 of the estimated 600 police departments would have the opportunity to view the tapes. Assuming that the average size of a police department was, in 1970, approximately seven police officers, then an estimated proposed sample of 4,320 officers would have the opportunity to view the in-service tapes.

* Since the vast majority of program funds were expended on the video tape portion of this program rather than 16mm (and the majority of coverage was expected through video tape) no quantitative analysis shall be conducted on films.

** A field unit consists of a television monitor, a decoder and a tape deck.

Since 1970, police departments in the state of Minnesota have reduced in number while slightly increasing in estimated average size. Currently, it is estimated that there are about 490 police departments in the state and about 5,000 law enforcement officers, an average police department size of about ten police officers (employed full and part-time).

At the time the study was being conducted, the KTCA files indicated that there were 36 law enforcement departments participating in the video tape portion of this project. However, after further research the following breakdown of program participants was determined. First, two of the 36 participants listed were not, by their own admission, participants of the CADAVERS project. Four of the remaining 34 who had complete or partial field units purchased by the CADAVERS project were not using them for in-service training. That is to say they were taking advantage of the project without a commitment to the goals of the project. For the purposes of this study the sample size used will be 34 law enforcement agencies in the state. Table 1 shows the distribution of those departments receiving CADAVERS transmissions.

AREA CODE	DISTANCE FROM CENTER OF SMSA	NUMBER	% DISTRIBUTION OF CADAVERS UNITS
1	50 Mile Radius	15	44%
2	100 Mile Radius	6	18
3	150 Mile Radius	6	18
4	200 Mile Radius	5	15
5	250 Mile Radius	2	5
TOTALS		34	100%

Under the distribution scheme displayed in Table 1, the CADAVERS project video tapes would reach an immediate police audience of approximately 3,378 police officers (see Table 9). That is, the 34 departments capable of directly receiving transmissions from KTCA represented approximately 68% of all law enforcement officers in the state and approximately 17% of the estimated total number of police departments in the state. The remaining law enforcement officers not directly receiving the in-service tapes would, according to the CADAVERS plan, share the equipment and tapes with a police department near them which did receive the video tapes.

This meant that the remaining 357 (73%) police departments (approximately 1,442 officers) were expected to share the tapes with the 34 departments which received them, bringing the total viewing potential up to 90% of the police departments in the state or about 4,820 law enforcement officers. The remaining 10% of the police departments in the state (about 49 departments or 180 policemen) would be supplied with 16 mm film copies of the tapes.*

AREA CODE	ESTIMATED TOTAL POLICE OFFICERS	ESTIMATED NUMBER POLICE IN RECEIVING DEPTS.	EST. NO. EXPECTED TO SHARE	ESTIMATED NO. VIEWING FILM COPIES	RATIO MEN PER UNITS INSTALLED
1	3,000	2,837	163	--	200
2	1,000	256	644	100	150
3	750	211	489	50	117
4	150	61	74	15	27
5	100	13	72	15	43
TOTAL	5,000	= 3,378	+ 1,442	+ 180	

*According to the project director, 14 police departments have requested the 16mm film copies. This means that 29% of the total number expected to have realized the 16mm film copies of the first series have done so as of March, 1974.

G. PROGRAM RESOURCES*

The expenditure of line item authorizations shown in Table 3 are based on the full three years of the CADAVERS project, even though it has not, at this time, completed its third and final year.

It also should be noted that during this project's first year of funding (1970), grant awards were made under a quarterly application procedure. After the completion of this project's first year, it was not awarded a second year continuation until federal fiscal year 1972. Since that time it has been continued a third time during federal fiscal year 1973.

*Resources are defined as all personnel, equipment and material used by this project. A distinction will not be made in the calculation of total resource costs between the grantee's costs (soft match) and the federal or state cost (hard match).

An argument can be made for not including the soft match costs as costs of a project. The reason for such a position is the assumption that soft match monies tend to be over stated by the grantee and in many cases exist on paper.

This may be true to some degree. However, in this instance, if soft match monies are not included in the total costs then the assumption is that hard match and soft match costs are equally proportionate within each line item and program activity.

The calculation of soft and hard match costs in the total resource costs formula seems to be the best alternative. However, one must recognize that this alternative assumes that the worth of a soft match dollar is equal to that of a hard match dollar.

TABLE 3*
CADAVERS LINE ITEM AUTHORIZATIONS
FY's 1970 - 71; 72 - 74

	FY 1970	% OF TOTAL FY	FY 1972	% OF TOTAL FY	FY 1973	% OF TOTAL FY	TOTAL	%
Personnel	\$82,813	35%	\$39,262	23%	\$37,469	22%	\$159,544	28%
Professional Services	4,800	2	29,800	17	32,250	19	66,850	12
Equipment	95,626	41	85,370	50	82,620	49	263,616	46
Travel	7,500	3	2,750	2	2,420	02	12,670	02
Other	43,972	19	14,154	8	12,000	08	70,126	12
TOTAL	\$234,711	100%	\$171,336	100%	\$166,759	100%	\$572,806	100%

The above table shows that the majority of funds were authorized for personnel and equipment. Both of the aforementioned line items were primarily costs related to the services rendered by KTGA.

The noticeable increase in professional services between year one (1970) and year two (1972) of the project is the result of two factors. First, costs for experts used in the training tapes were moved from the personnel line item to the professional services line item. Second, approximately 30% of the increase in the professional services was the result of unanticipated dubbing costs and maintenance costs in the form of personnel cost for an electrical

*These cost figures were supplied by yearly program budgets from the CADAVERS file. There maybe small differences between the authorizations and expenditure figures. However, it is not the intent of this report to audit the CADAVERS program but rather to use figures which closely reflect project expenditures.

engineer. An engineer was required as users experienced difficulties in receiving the transmission of tapes from KTCA. This problem necessitated dubbing (copying) several tapes in the KTCA studio at an additional cost to the project.

About 33% of the first year's authorization of the equipment line item represents capital expenditures in the form of thirty field units*. These field units (excepting the decoder, which is a leased item) are the property of the Attorney General's Office. The decoders are acquired by contract lease. The present arrangement of ownership of the monitors allows the project director to exercise a certain amount of control over the location of the units. In theory, the director may relocate any field unit in order to achieve the goals of this project. However, in actuality few if any field units which are not being utilized to their maximum have been relocated to date. Part of the problem is the CADAVERS project lacks the necessary policy guidelines or criteria in regard to substandard utilization of the tapes by departments who have CADAVERS field units. During this study the project director of CADAVERS was concerned with this problem but did not appear to have a solution at hand.

The two percent (2%) increase in personnel costs from FY 1972 to FY 1973 is attributable to the hiring of the project's first full-time project director.

The present full-time project director was hired on or about October, 1973 for the purpose of attacking the problem of utilization. Since the direc-

*For purposes of calculating the per man-hour costs of in-service training the capital expenditures were subtracted from the total FY 1970 budget, as well as expenditures for 16 mm films.

tor has been aboard only a few months, it is impossible to evaluate his impact on the project.

Based on financial and progress reports submitted periodically by a staff member of KTCA, it appears that the use of planned resources did result in the performance of planned activities.

Quarterly financial statements of the CADAVERS project were assembled into the following table. The period covered in Table 4 below reflects declared expenditure up to and including December 31, 1973. The CADAVERS project runs until the end of FY 1973.

	FISCAL YEAR 1970; 71 - 72	FISCAL YEAR 1972 -73	FY 1973-74 (TO 12-31-73)
Personnel	107%	99%	17%
Professional Services	100%	88%	0%
Equipment	130%	84%	0%
Travel	80%	43%	6%
Other	100%	100%	18%

The grantee was able to stay well within the allowable 15% reallocation of monies between line items of hard match funds. For example, during the

*Line item expenditures which exceed 100% are usually expenditures of the soft match variety. This same general rule holds true for item expenditures which resulted in less than 50% of the total item being expended.

first year of funding 130% of the itemized authorization for equipment was expended. A closer review of this line item reveals that the vast majority of this "cost overrun" was in KTCA's soft match monies. On the other hand, Table 4 shows only 43% of the authorized expenditures for travel in fiscal year 1972-73 were actually used. Again, the majority of non-obligated funds in this line item was soft match monies.

From the perspective of KTCA, their primary responsibility was to produce the proposed number of in-service training tapes within the funds awarded, and within the guidelines pursuant to reallocation of line item authorizations. The analysis of resource authorization and expenditure as juxtaposed against the following table seems to support the position that the CADAVERS project met with a certain amount of success as defined by KTCA.

TABLE 5 CADAVERS PRODUCTION SCHEDULE (AS OF 12-31-73)			
FEDERAL FISCAL YEAR	PROPOSED PRODUCTION	ACTUAL PRODUCTION	% OF PLANNED
1970	12	12	100%
1972-1973	15	16	100+%
1973-1974	16	0	0%
TOTAL	43	28	65%

According to the financial and progress reports filed with the Governor's Commission on Crime Prevention and Control, this project experienced a 32% increase in efficiency between its first (1970) and second (1972) years of operation. The costs for production and dissemination of the master tapes

declined from \$15,515.00 per master tape in 1970 to \$10,671.00 per master tape in 1972. This reduction was accomplished during the same time the project was reduced by 10% in total authorized resources.

The above observation tends to support the position that those resources which specifically relate to the activity of producing the number of tapes proposed did, in fact, result in the performance of planned activities. In this regard, there is no significant variance between the actual performance of this project during the duration of this study.

D. PROGRAM ACTIVITIES

This section of the report addresses itself to the second program assumption. That is, the assumption that each subgoal (and corresponding activities) must necessarily be attained before the program goals can be attained, and that the attainment of all subgoals will result in attainment of program goals. In short, this section attempts to determine whether the program's activities in actuality met expected attainments.

Within this section, the study identifies and categorizes groups of tasks which must be carried out in order to accomplish desired subgoals (or objectives). Therefore, before a CADAVERS video tape can attain its desired or expected impact, the program must systematically carry out the following activities.

1. The research and development of in-service training video tapes.
2. The production of in-service video tapes.
3. The transmission of in-service training video tapes to participating law enforcement agencies.
4. The utilization (viewing) of the in-service training video tapes by participating law enforcement agencies.

Program activities are defined as work performed by the CADAVERS project personnel, equipment and supplies in the service of a goal. The activities, listed above and discussed in this section, are broad work categories which generally reflect the process of the CADAVERS project.*

The general category of research and development includes sub-activities such as determining the topics for in-service training; selecting the location of the video tape units in the field; researching the subject matter for each training film; securing experts to appear in various training films; and reviewing the content of each film after editing and prior to transmission.

The production category may include sub-activities such as writing the scripts for each training segment; filming the dramatization for each segment; determining the proper location for filming on location and editing the film footage.

The transmission category may include the sub-activities relative to the operation of the communications network, known as CADAVERS, which disseminates the master training tapes to all field video tape receivers simultaneously. Maintenance and repair activities for this communication system may also be a part of this general category.

The last category, utilization, may include all those sub-activities which relate to inducing the local law enforcement participants to use those training films that have been produced.

*In order to determine the distribution of activities within the CADAVERS project, operational definitions of activities had to be created. These activities, as defined, are categorizations which were created to assist in the systematic analysis of subgoal impact.

Certain sub-activities performed by the municipal police departments could, under most circumstances, be included within the utilization category. However, this analysis does not include the costs and activities of implementation from the perspective of the user. Therefore, police man-hours allocated toward training are not a part of the total cost of this project.

1. Resource Allocations and Activities Priorities

TABLE 6				
<u>PERCENT ALLOCATION OF CADAVERS RESOURCES BY ACTIVITY</u>				
ACTIVITY	PERSONNEL	PROFESSIONAL SERVICES	TRAVEL	EQUIPMENT
Research and Development	45%	4%	34%	18%
Production	54	72	54	61
Transmission	.5	22	0	11
Utilization	.5	2	12	10
TOTAL	100%	100%	100%	100%

Table 6 shows the percent of total resources (measured in dollars and derived from Table 1) allocated to each activity.* For example, those operational tasks which come under the activity category of production (filming, editing, etc.) took approximately 45% (\$41,000.00) of the total monies allocated toward personnel over the three year period.** Table 7 gives the

*The majority of proposed allocations of resources by activity have remained constant throughout the three years of this project.

**Since the program is in its third year, the remaining months of expenditures were estimated based on past expenditures.

reader an approximate emphasis in regard to the rank order of program activities.

TABLE 7 RANK ORDER OF CADAVERS PROGRAM ACTIVITIES	
ACTIVITY	MEAN PERCENT
Production	60%
Research and Development	25%
Transmission	8%
Utilization	6%

From the perspective of the producing of a quality product, the emphasis on the two aforementioned program activities appears reasonable. Before one can produce a creditable police in-service film, it must be properly researched. After the research is completed, the next subgoal is to produce a viable, high quality product. In the case of CADAVERS, both program activities appear to be evaluated as somewhat successful by those departments that used the video tapes.

According to the Executive Producer of the CADAVERS project, a KTCA employee, a substantial amount of effort was directed toward researching the subject matter of each training film. It was theorized that the validity of the tape was an extremely important variable which would enhance the tapes credibility with police users. Furthermore, an extraordinary effort was made in the production phase to film at as many different police departments as economically possible. The project people assumed that by using actual police personnel and equipment, realism and drama would be incorporated into the tapes. This factor was also assumed to have a positive relationship to utilization of tapes.

Simply stated, it was the position of the project's logic that the quality of the final product and the degree to which it met the demands (needs) of the users determined the rate of utilization.

Based on the data available, the following table was created in order to display the user's evaluation of the quality of the first series of tapes.

TABLE 8 FIRST SERIES TAPES - USER'S RATING OF QUALITY			
USER RATING	ADHERENCE TO DEPT. POLICY	REALISM OF SITUATION	EXTENT OF NEW KNOWLEDGE
Excellent	31%	32%	19%
Good	49	29	35
Average	11	21	29
Medium	5	12	14
Poor	4	6	3
TOTAL (N=35)	100%	100%	100%

The majority of police departments who had seen the tapes and responded to the questionnaire rated the overall quality of the tapes favorably. For example, seventy percent (70%) of those departments responding thought the tapes were above average in regard to adhering to their departmental policy. This indicates that this method of training can be done on a statewide basis and still relate individually to the vast majority of police departments. This finding would seem to question the ongoing argument that there is a need for more "tailor made" training sessions in the various regions of the state.

Fifty-four percent (54%) of the respondents considered the extent of new knowledge gained from the first series of tapes to be either excellent or good. Further analysis of the data did not give any clues as to why such a large number (46%) would rate the new knowledge gained from the first series of tapes to be average or below. There appears to be two plausible explanations. The Bureau of Criminal Apprehension has incorporated some criminal law and procedure material (basic subject of the first series of the CADAVERS project) starting as early as 1962. Secondly, the Bureau of Criminal Apprehension has held in-service training seminars on this same subject matter. Therefore, it is not too unlikely that a substantial minority may have had previous exposure to this material. Nevertheless, the general consensus of the users was favorable in regard to the overall quality of those tapes which made up the first series.

A more comprehensive analysis on the relationship between the project's resource and activity allocation, and the user's evaluation of the overall quality of in-service tapes, was hindered due to the absence of pertinent data. This study cannot determine, with any confidence, the optimum ratio between resource and activity allocation (input), and the change in the overall evaluation of the tapes by the users (output).

Therefore, given the present resource allocation levels and activity priorities of this project, the tentative conclusion of this study is that production schedules have been met within the proposed time period with a certain amount of positive feedback from the users regarding the overall product produced. However, the study is unable to draw any conclusions as to whether the present funding allocations are the "best" or whether more

economical reallocations within activity categories would result in any significant change in the overall evaluation of the project by its users.

In conclusion, the activities relative to research and development were to identify, through a participatory effort, the in-service training needs of police in the state and develop a well-documented video tape presentation in those areas where the greatest needs for in-service police training were thought to exist. Second, the activities relative to production were aimed at ensuring that the final product was credible and pertinent to the users. To achieve this subgoal of production, the strategy of allowing the users to participate in the actual filming sessions (as actors and consultants) was to be employed. There is ample evidence that the project did in fact deploy and maintain the aforementioned tactics to achieve its desired subgoals.

2. Utilization

Utilization is the last of four logically related activities necessary for the CADAVERS project to achieve its goals.* The activities preceding utilization (research and development, production and transmission) have as a part of their subgoals the optimization of utilization. For example, participation by the users (police departments) in the research and development of subjects for in-service training tapes was a desired subgoal which was assumed to be correlated to maximum utilization of the tapes at a future date. The use of actual law enforcement personnel, equipment and a great amount of "location shooting" during the filming of the in-service segments (the production activities) was also a tactic to enhance the utilization of tapes by

*The third activity, transmission, was not addressed in this report because of its technical nature.

providing user input during production to achieve credibility.

The analysis of the utilization of the first series of tapes will be approached from the perspective of answering two questions which relate to program assumptions one and two.

- 1) Was the scope of the project realized in actuality (program assumption one)?
2. Did the project's strategy have the expected impact on utilization (program assumption two)?

Table 2, originally presented in Section B of this chapter is reprinted below in order that the reader may compare the projected scope of this project with actual utilization of the GADAVRS tapes. (See Table 9)

AREA CODE	ESTIMATED TOTAL POLICE OFFICERS	ESTIMATED NUMBER POLICE IN RECEIVING DEPTS.	EST. NO. EXPECTED TO SHARE	ESTIMATED NO. VIEWING FILM COPIES	RATIO MEN PER UNITS INSTALLED
1	3,000	2,837	163	--	200
2	1,000	256	644	100	150
3	750	211	489	50	117
4	150	61	74	15	27
5	100	13	72	15	43
TOTAL	5,000	= 3,378	+ 1,442	+ 180	

Table 2 is based on the narrative of the GADAVRS grant as submitted to the Governor's Commission on Crime Prevention and Control. The current estimates of total numbers of police in the state and the estimated number of police departments was also used in this table. Lastly, the total numbers of police in

each area, in the preceding table, is based on an estimated distribution of sixty percent (60%) in area one, twenty percent (20%) in area two, fifteen percent (15%) in area three, three percent (3%) in area four and two percent (2%) in area five.

Table 9 reflects the actual scope of the GADAVRS project as of September 1973.* More recently, however, the newly hired project director has reallocated five field units which are not considered in the table below.

(1) AREA CODE	(2) ESTIMATED NUMBER OF POLICE OFFICERS IN AREA	(3) ESTIMATED NUMBER OF POLICE IN DEPTS. WITH FIELD UNITS	(4) ESTIMATED NUMBER OF POLICE REACHED BY SHARING	(5) ESTIMATED NET TOTAL REACHED	(6) ESTIMATED % ALL POLICE CAPABLE OF BEING REACHED BY GADAVRS
1	3,000	2,837	80	2,917	97%
2	1,000	256	72	328	33%
3	750	211	39	250	33%
4	150	61	57	118	78%
5	100	13	50	63	63%
TOTAL	5,000	3,378	298	3,676	74%

*Based on questionnaire administered to participating departments in September, 1973.

**Table 9, column three represents all policemen who are (at the time of this study) employed by departments which were chosen as field unit sites or transmission sites. Column four represents the "actual" number of law enforcement officers who had been reached by this project through sharing with the selected field unit or transmission sites. Column six displays the estimated number of police capable of being exposed to the in-service training tapes. These numbers were derived by adding column three to column four.

The base line of Table 9 (column three) shows that approximately 3,378 law enforcement officers were reached by the location of the field units. Another 298 officers were reached through the efforts of sharing (column four). This means that approximately 3,676 (column five) police officers were reached by the CADAVERS delivery system and sharing method or about 74% of all the law enforcement officers in the state (based on the 5,000 total police officer estimate).

Comparing Table 2 with Table 9, it is apparent that the program expectations in regard to sharing CADAVERS tapes were overestimated. In column four, Table 2, we see that in order for the CADAVERS project to reach maximum projected exposure 1,442 police officers must share the films and equipment with the selected field unit sites. In actuality, 298 policemen, or about 21% of those expected to share, were in fact reached.

On the macro scale, the project projections were that about ninety percent of all police departments in the state would be reached by the in-service video tapes. In reality, however, the officers in 77 of the 490 police departments, or about sixteen percent (16%) were reached.* Over half of these departments had units housed within their departments.

Further analysis of the data from the September questionnaire supports the tentative conclusion that the actual utilization of the in-service training tapes by those reached (see Table 9, column six) is less than acceptable.

*This percentage (16%) is based on the estimate of 490 police departments in the state rather than the project's estimate of 600 police departments in 1970.

During the time of this study, four of the 34 departments which received direct transmissions of the CADAVERS tapes from KTCA were not utilizing the in-service tapes.

TABLE 10			
POLICE DEPARTMENTS NOT UTILIZING CADAVERS AS OF SEPTEMBER, 1973			
(1) AREA CODE	(2) DEPARTMENT	(3) NUMBER OF OFFICERS	(4) NUMBER OF DEPTS. SHARED
1	Minneapolis Police Department	890	0
1	Ramsey County Sheriff	60	0
1	Rice County Sheriff	32	0
1	Dakota County Sheriff	39	3
TOTAL		1,021	3

As the above table displays, approximately 1,021 policemen in departments which had direct access to CADAVERS were not utilizing the films. This means that 28% of the approximate 3,676 police officers reached by this project (Table 9, column five) were not using the in-service tapes. In turn, the total number of departments utilizing the tapes is reduced to 73, or approximately fifteen percent (15%) of all law enforcement agencies in the state.

The questionnaire of September, 1973 also sought to determine the rate of utilization of the first series (12 tapes) over time. Each department that received direct transmissions of the tapes from KTCA (34 departments in all) were asked the following questions 21 months after the last tape in the first series had been sent to all of the 34 departments:

"Has your department viewed the entire series of 12 tapes?"

"Total number of men in your department viewing first series."

"Total number of men in your department viewing partial series."

Since the aforementioned questions were asked only of the 34 departments which directly received transmissions from KTCA, the remaining 42 departments who participated in the program (by sharing the tapes) are not represented. However, the 34 police departments who were questioned did represent the vast majority of those policemen who did view the CADAVERS tapes.

Table 11 presents the total amount of CADAVERS in-service training in each location.

(1) AREA CODE	(2)* NUMBER POLICE VIEWING ALL 12 TAPES	(3) NUMBER TRAINING MAN HRS. VIEWING ALL 12 TAPES	(4)** NO. POLICE VIEWING LESS THAN ALL 12 TAPES	(5) NUMBER TRAINING MAN HOURS FOR VIEWING SOME TAPES	(6) EST. TOTAL NO. POLICE VIEWING 1 OR MORE TAPES	(7) EST. TOTAL # MAN HRS. TRAINING AS OF SEPT. 1973
1	680	4,080	1,316	1,974	1,996	6,054
2	290	1,740	38	76	328	1,816
3	155	930	85	213	240	1,170
4	108	648	10	45	118	693
5	63	378	--	--	63	378
TOTAL	1,296	7,776	1,449	2,308	2,745	10,111

*Included in this column are all officers who saw the tapes through the sharing method. It was assumed all 298 officers in this category saw the first series in total.

**These figures are derived from the coefficients in Table 12. The values found in Table 11, column four, are highly sensitive to the aforementioned coefficients.

Column two of Table 11 shows those officers who, as of September, 1973, have viewed all of the first series of tapes (12 tapes, one-half hour in length). Column three presents the amount of man-hours of in-service training gained from the CADAVERS project. Column four displays the number of police officers in each location that have viewed less than all of the first series.

Through further analysis of the September, 1973 questionnaire it was determined that, for those officers who had seen less than all of the first series, an estimated average of viewing time per officer, by location, could be derived as follows.

AREA	ESTIMATE PER HOUR PER MAN
1	1.5
2	2.0
3	2.5
4	4.5
5	6.0

The average per man-hours of in-service training in Table 12, multiplied by the values in column four, Table 11, produces the total amount of man-hours of training for those officers who have viewed less than the complete first series of tapes (column five, Table 11). Column six and seven of Table 11 present the results of adding column two and four; and, three and five respectively.

Table 11 displays that about 21 months after all transmission sites had received the entire first series, approximately 35% (1,296) of the 3,676 police officers who had the tapes available to them had seen all the first series of tapes. Said another way: after the first series had been available for 21 months, only 35% (1,296) of the estimated total number of officers reached (3,676) through this project had received the full six hours of CADAVERS in-service training.* Thus, approximately 26% (1,296) of all law enforcement officers in the state (5,000) have seen the entire first series in total.

The maximum number of law enforcement officers reached by the project was approximately 3,676. Seventy-five percent (75%) of those officers reached viewed some (one hour or more) of the first series. This means that 55% (2,745) of all 5,000 law enforcement officers in the state have received some (one hour or more) CADAVERS in-service training.

The next analytical procedure will determine the actual costs per man-hour of training received through the efforts of the CADAVERS project.

TABLE 13			
CADAVERS ESTIMATED PER MAN-HOUR TRAINING COST FOR FIRST SERIES			
AS OF SEPTEMBER, 1973			
AREA CODE	FIRST SERIES IDEAL - N = 5000	FIRST SERIES LOWEST POSSIBLE - N = 3,676	FIRST SERIES ACTUAL - N = 2,745
1	4.56	4.69	6.85
2	5.47	16.69	16.69
3	7.29	21.89	22.81
4	30.41	38.66	38.66
5	19.32	28.96	28.96
AVG. PER MAN HR. COSTS	13.41	22.17	22.79

*The observation assumes that all (298) officers in the "shared" category took full advantage of this project and saw the first series in total. The opposite assumption would reduce the statistic to 24% instead of 35%.

In column one, Table 13, are shown the per man-hour in-service training cost for the CADAVERS project by location, based on the assumption that all police officers in the state had seen all the first series.

Table 13, column two represents the lowest possible cost figures that can be attained through the project's efforts as of September, 1973. These cost ratios are based on the total number of officers (3,676) reached directly by this project. Column three presents the estimated actual costs of the CADAVERS project as of September, 1973. It is evident that actual costs (column three) are higher than the lowest possible costs in column two (based on the total number of law enforcement officers reached, 3,676).

Table 13, columns two and three show that the per unit costs of the project and the lowest possible costs increases as the geographic distribution increases. Since the density of law enforcement officers is less in the out-state areas, it is not to surprising to see that as the geographic distribution of the project expands, both the actual and lowest possible per unit cost increases.

However, comparing columns two and three, Table 13, shows that the variance between actual and lowest possible costs decreases as geographic distribution of the project increases. Thus, the area which has the highest potential utilization (area 1, basically the Metro area), and therefore the best potential for lowest possible per unit costs, when compared to other areas has the highest variance between actual and possible cost. This seems to point out that any strategy developed to reduce overall per unit costs of the project must effectively deal with location area number one. Even though

the per unit costs are nearly twice as high in the outstate areas when compared to the metro (area one) location, the efforts which will yield the maximum payoffs (per unit cost reduction) will be derived in better utilization of this project in the metro area.

The cost figures in Table 13 for the outstate locations three and four (200 and 250 mile radius from St. Paul) show that the greatest reduction in costs can be achieved by expanding the coverage of the CADAVERS project. Unlike the problem in the metro area, the outstate problem rests with the number of police officers not being reached by sharing, not the non-utilization by those who are being reached through direct transmission.

In sum, Table 13 shows those areas where more officers must be reached by this project and where utilization of the tapes by officers already reached must be increased.

Through the efforts of this study, it was discovered the actual utilization of the CADAVERS tapes does not compare favorably with the expected utilization foreseen by the CADAVERS project personnel in 1970.

The CADAVERS project, as of September, 1973, had provided approximately 10,111 hours of in-service training. There were about 2,745 police officers involved in this project. This means that on the average each participating officer received four hours of training at an approximate average per man-hour cost of \$22.79. This cost figure does not include personnel costs (hourly wages) which the employer must pay when the employee is viewing the tapes.

The actual scope of the program was significantly less than the projections

made by the CADAVERS plan in 1970. The CADAVERS plan projected the scope of the program to reach approximately 90% of all police departments in the state with video tape sessions. In actuality, only 15% of the state's police departments were reached by video tape. Coverage of 15% (73 police departments) resulted in approximately 3,676 police officers being reached by this project. Of the 3,676 reached, 35% (1,296) had received the full six hours of exposure to the in-service training tapes and 75% (2,745) of those reached had received between one and three hours of training. Seventy-four percent (3,676) of all (5,000) police officers were reached by this project. Those officers who had been reached and viewed at least one hour of a CADAVERS video tape represented 55% (2,745) of all (5,000) police officers in the state while only 26% had obtained the maximum six hours of training from the first series of video tapes.

APPENDIX

CADAVRS

A series of twelve televised programs on the subject of search and seizure will be available to virtually every police officer in the state of Minnesota through the facilities of the Midwestern Educational Television Network.

1. "Legal Information." Produced with the assistance of the St. Paul Police Department and the Attorney General. This film is an introduction to the series. It explains the Constitutional provisions which guard a citizen's right to be free from unreasonable search and seizure.
2. "Arrest and Probable Cause to Arrest." Produced with the assistance of the Mankato Police Department, the Attorney General, and the Minnesota Legislature. This film is about a hearing in a committee of the Minnesota House of Representatives on a bill to make misdemeanors as well as felonies subject to the rule of "probable cause."
3. "Informational Probable Cause." Made with the assistance of the Hennepin County Sheriff's Office, the Hopkins Police Department, the St. Paul Police Department and the Edina Police Department. The officer's own observations on "probable cause" are discussed in this film.
4. "Information -- Reliable/Untested." Made with the assistance of the Owatonna Police Department, the Minnesota State Patrol, the Ramsey County Sheriff's Office, and the Bureau of Criminal Apprehension. Cases are used to explain how the information obtained even from unknown sources may be used along with other factors to develop "probable cause."
5. "Neutral Factors Affecting Probable Cause." Made with the assistance of the Brooklyn Park Police Department. This film shows how neutral or circumstantial evidence can help to substantiate an officer's suspicions so as to develop a "probable cause" for arrest.
6. "Stop and Frisk." Made with the assistance of the St. Cloud Police Department, the Windom Police Department, and the Mankato Police Department. This film presents cases and rulings involving the nature and limitations of "stop and frisk."
7. "Limitations on Searches Incident to Arrest -- Part I." Made with the assistance of the Edina Police Department, the St. Paul Police Department, the Roseville Police Department, the West St. Paul Police Department, and the Brooklyn Center Police Department. This film deals specifically with the search of vehicles.
8. "Limitations on Searches Incident to Arrest -- Part II." Made with the assistance of the North St. Paul Police Department. Several cases are used to demonstrate what provisions are necessary to justify a "reasonable" search.

9. "Rules of Search and Seizure." Made with the assistance of the North St. Paul Police Department, the St. Paul Police Department, the Crystal Police Department, the Roseville Police Department, the Cass County Sheriff's Department, The Maplewood Police Department, the Bloomington Police Department, the Bemidji Police Department, and the Beltrami County Sheriff's Office. This film deals with court rulings on searches.
 10. "Entry to Arrest." Made with the assistance of the West St. Paul Police Department, the North St. Paul Police Department, and the Maplewood Police Department. This film shows what the Supreme Court has ruled constitutes "forcible entry."
 11. "Search Warrants/No Knock." Made with the assistance of the Crystal Police Department, the Maplewood Police Department, the Edina Police Department, and the Anoka County Sheriff's Office. Illustrations are used to emphasize the workings of search warrants generally and "no knock" in particular.
 12. "Field Identification and Lineups." Made with the assistance of the Duluth Police Department and the Bloomington Police Department. This film shows the similarities and differences between field identification and the better controlled "lineup" situation.
- The second and third series of GDAVRS films are concerned with a wide variety of problems of interest to police officers in Minnesota.
13. "Detoxification -- Program #1." Made with the assistance of the Mankato Police Department, the Blue Earth County Detoxification Center, the Ramsey County Sheriff's Office, and the Ramsey County Detoxification Center. Dick Allyn of the Attorney General's Office discusses the detoxification law and the problems which it presents to law enforcement in Minnesota.
 14. "Detoxification -- Program #2." Made with the assistance of the Attorney General's Office and the Maplewood Police Department. This film expands on the questions raised in the first detoxification film.
 15. "Forgery and True Name Checks." Made with the assistance of the Edina Police Department and Mr. Joe Rusinko, former Captain of the Forgery-Theft Division of the Minneapolis Police Department. This program discusses the laws pertaining to forgery and theft by check. There is a detailed explanation of the laws in this area, the problems of prosecution, and the penalties imposed. The film very effectively points out the differences between forgery and theft and between felony and misdemeanor offenses under the Minnesota statutes.
 16. "Theft/Possession of Stolen Property." Made with the assistance of the Bloomington Police Department. Topics covered are the various theft statutes and the problems arising from prosecutions under them; the various types of theft, from felony to misdemeanor (e.g., shoplifting); and some of the problems the officer faces in dealing with the various kinds of theft.

17. "First Man on the Scene -- Part I." Produced with the assistance of the St. Paul Police Department. This program discusses both the legal and the procedural responsibilities of the patrol officer faced with the task of investigation of a crime scene.
 18. "First Man on the Scene -- Part II." Made with the assistance of the Anoka County Sheriff's Office and the laboratory section of the Bureau of Criminal Apprehension. This film demonstrates how local agencies can work with the B.C.A. when specialized laboratory facilities do not exist locally.
 19. "Interrogations and Confessions." Ted Rix of the Hennepin County Attorney's Office discusses the methods of interrogating suspects and witnesses, as well as the legal problems which interrogation entails.
 20. "Aggravated Assault/Sex Crimes." Made with the assistance of the St. Paul Police Department and the Fridley Police Department. This program discusses the laws pertaining to assaults and the investigation of such crimes. The crime used as an example is a rape in which the victim has been assaulted.
 21. "The Officer in Court." Marv Green of the Ramsey County Public Defender's Office discusses the legal and procedural responsibilities of the officer who testifies before a court of law. The Roseville Police Department provides the officer used in the courtroom setting. Among the points discussed are notetaking, and the use of notes in court, courtroom procedures, and methods of asking and answering questions in court.
 22. "The Officer and Domestic Calls -- Family Crisis Intervention." This program is about ways of handling people who find themselves in crisis situations, such as husband-wife disputes, and ways of dealing with the mentally disturbed. The film covers legal responsibilities in these situations, psychological methods of dealing with crisis situations, and self protection on the part of the officer.
- Films 23 - 28 all deal with the juvenile offender.
23. "History of the Juvenile Court." The law looks at the juvenile offender differently than it looks at the adult offender. A juvenile could be incarcerated for years for an offense that could mean a sentence of only 6 months for an adult. The program explains the laws and rights covering a juvenile, how the courts have viewed them, and how they came about.
 24. "Juveniles by Law." What is a juvenile? Does he have rights greater or less than those of an adult? Can he be treated as an adult? How do police handle a juvenile offender? This film deals with all of these questions with the help of the Bloomington Police Department.
 25. "From Apprehension to Disposition." Two juvenile offenders are apprehended by the White Bear Lake Police Department. One is a first offender and the other has violated his probation. Judge Archie Gingold discusses the flow of events from first custody to court disposition of the two cases.

26. "The Philosophy of the Juvenile Court System." Judge Lindsay Arthur explains and demonstrates how the juvenile court views the young. A juvenile hearing is shown as he might conduct it, revealing the responsibility of the juvenile's parents, the corrections department, and the court.
27. "Options of the Court." The options open to the court in smaller towns, as well as the greater Metropolitan area, were filmed in Bemidji. Judge Marcus Reid, a group home, a foster home, and institutions share their stories.
28. "Options Open to the Officer." What choices does a police officer have when dealing with juveniles? Sgt. Dave Knepelkamp of the Stillwater Police Department, Juvenile Officer Carmen Lee of the Worthington Police Department, the Rosevill School District and the Ramsey County Sheriff's Office communicate with juveniles before and after they have a brush with the law and help many of them to "get their heads on straight."

END