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RECORD-O-PORT
A New Concept in Field Data Capture

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The increasing trend toward the development of comprehensive criminal justice information systems on the state level has brought into focus the need for more efficient and accurate data capture systems at the agency level. The involvement of all segments of the criminal justice system in the development and use of centralized data files has placed an additional burden on user agencies; that is, to produce additional and more detailed data for use in management information and operational systems on the agency level, and for submission to the state level. Of the different types of data which are generated on the agency level, crime and incident case reporting will be the target of this paper, specifically since this type of reporting relates to law enforcement agencies.

Today, we find that law enforcement officers must frequently operate in a tense and dynamic environment. The very nature of the enforcement function is such that an officer must often exercise considerable personal discretion in carrying out his everyday duties. Events of the recent past demonstrate dramatically that the way in which that personal discretion is exercised can have a significant impact on the peace and safety of the community.

The effectiveness of the individual officer is increased substantially if he has rapid access to information from the departments' records or from centralized files concerning such matters as whether a particular vehicle is wanted, whether a piece of property is listed as stolen, or whether a modus operandi is typical of persons he suspects of having committed specific crimes.

Consequently, the record system of law enforcement agencies plays an important role in forming the foundation for a statewide information system. If comprehensive records information is to be collected, it is necessary to encourage and assist agencies by developing an easily used and efficient crime and incident data capture system.

It should be noted, however, that the need for information and the ability to process data varies considerably between a one-man department and a force of 2,000. Thus, development of a records system of law enforcement agencies must (1) satisfy the internal needs and give adequate recognition to the unique requirements of each related agency; (2) operate with available resources; and (3) supply key data to statewide information systems.

Historically, efforts to improve field data capture methods have been stimulated by problems related to inaccurate and incomplete data, laborious handwriting or typing of reports, and a general state of apathy among officers regarding the quality of field data capture. Other problems encountered by agencies using totally manual data capture systems include field officers' having to transport, locate, and use a multitude of specialized forms and reports. In essence, as additional forms have been designed to support centralized files on the agency or state level, the officer's job has become more difficult rather than more streamlined. This situation presents an interesting paradox, since one of the primary reasons for developing central files and more sophisticated records systems is to assist the field officer in becoming more effective in his job. That is to say, that while his inquiries can be answered more rapidly, he has less time to inquire.

In order to update and increase the effectiveness of data capture methods, the amount of time required to generate and record field data must be reduced, accompanied by an increase in the quality of information reported. Improved investigative report quality will substantially increase the effectiveness of prosecution in obtaining convictions.

In the search for a field data capture systems concept which would redress the major difficulties experienced by officers, various approaches were examined which previously had been developed and utilized in the field of law enforcement. Beyond officer handwritten or typed reports, centralized telephone dictation, office machine dictation, and secretary dictation approaches were reviewed. All three approaches dealt directly with the problem of the field officer being required to handwrite or type reports.

It was noted that the centralized telephone dictation system solved problems of logistics and

offered a dictation capability; however, user acceptance was very low due to an extensive amount of preparation before starting the recording. Users complained that it was difficult to make the report sound "polished" because the tape could not be reversed and corrected when major dictation errors were made.

The use of dictation equipment in central and sub-station locations allowed officers to develop a "polished" report without extensive preparation, and user acceptance was excellent. The major problem, however, centered around the time loss and data loss resulting from travel to the location where the dictation devices were housed. The same problems were experienced with the use of secretarial dictation of reports. The most common problem noted in each of the three systems was that without exception the final report must be generated away from the scene of the occurrence. This was considered a major problem due to the amount of time on each shift an officer must dedicate to report writing. Another important related factor was the potential loss of data which had been committed to memory.

After the review of both manual and automated field data capture systems which were being used, it was determined that a detailed set of system requirements be developed and that an update approach to field data capture be designed and tested.

The major requirements of an upgraded system were determined to be:

1. Elimination of handwritten reports;
2. Data capture must occur on site;
3. Reduction in the number of specialized forms;
4. Uniformity of reports between agencies to include data capture for input to local and state automated systems;
5. Reduction in the time required for field data capture;
6. Improvement in quality of reports.

Requirements of the system must avoid all unnecessary complexities, be well documented, and have local law enforcement agency involvement from development throughout implementation.

Development of a data capture medium was accomplished via voice recording on audio cassettes into which the investigating officer dictates all information to be contained in the offense report. The portability of the cassette recorders allows the officer to capture all pertinent information relative to each case, regardless of crime scene location or related factors.

A pilot Record-O-Port project was initiated using cassette recorders as the vehicle in capturing offense information. Although demonstrating the feasibility of the recorder concept, the reports produced from the pilot test indicated two significant deficiencies. First, the length of the reports increased substantially and contained much unnecessary verbiage. Secondly, specific data elements destined for computerized input were in random sequence since officers were dictating free-form reports. To combat these problems of conciseness and data standardization, "cue cards" were developed and tested in three police agencies. Each officer was provided "cue cards" to guide his dictation through all elements of the nine most common or serious offenses.

The "cue card" concept eliminates the need for multiple forms which were being utilized by various agencies in capturing offense information. Although voice recording of offense reports has been attempted elsewhere with mixed results, the use of the "cue card" represents a major advance in offense data capture.

The "cue cards" were designed with two primary goals in mind. First, they had to provide sufficiently detailed information to obtain convictions in court. Secondly, they must be brief so that the officer does not become frustrated in having to record information having no bearing on the case. These two goals are, of course, contradictory and were resolved through a series of meetings with representatives from law enforcement agencies, prosecuting attorneys, and judges. The final result was a compromise in that the "cue cards" ask for the minimum amount of information necessary to obtain convictions in the majority of cases brought to court. The officer, however, is free to record information not contained on the "cue cards" if he considers the information relevant to the case.

The "cue cards" for each offense have three separate sections: (1) an initial action section that merely reminds the officer to take appropriate preliminary action as soon as he arrives on the scene; (2) an identification section that utilizes a separate "Identification" cue card which is common to all cases and contains information related to basic offense data, such as case number, name, telephone number, addresses, etc. of all complainants, victims, witnesses, suspects, and arrestees; and (3) an "elements-of-investigation section" that is a guide for gathering data about the specific offense.

After the officer records all identification information, he then refers to the "cue card" most closely associated with the offense under investigation. There are "cue cards" for larceny, vandalism, burglary, auto theft, fraudulent documents/bad checks, sex offenses, assault and battery, robbery, homicide/manslaughter, and "other offenses." If

an offense does not fit one of the specific "cue cards," the officer would report under the "other offenses" cue card. In such cases, the officer must use his experience to determine what information is appropriate for the report.

Since the officer will no longer write out a report, the responsibility for accurate documentation of recorded offenses' reports falls directly on the secretary. Upon completion of the officer's particular shift, he brings all tapes into the agency's record section. The secretary then transcribes the information on the tapes to the appropriate offense report including all details necessary to provide support for follow-up investigation and court case preparation.

To assist the secretary in standardizing the documentation, secretarial guidance cards are provided. There is a card to cue her for each piece of data, just as the officer's cue cards serve as a guide in recording offense data. These guidance cards indicate to the secretary what the officer's cue was, and provide the lead-in title to be used in organizing the taped offense data.

The evaluation of the pilot test was primarily based on three criteria: user acceptance, report quality, and efficient use of the officer's time.

Acceptance by police officers may be compared to a learning curve type concept. As is evidenced in any new type of system, there is always apprehension and oftentimes reluctance to accept the new approach on the part of the individual directly involved with it. A similar situation existed with the Record-O-Port project. However, as the officer became more familiar with the various components of the system, the acceptance level gradually increased. Upon completion of the pilot, the acceptance rate was extremely high, as was the officer's confidence in the system's success.

Further evaluation of the system indicated a twenty-seven percent decrease in time required to capture offense data. This was measured by sampling times required for the officer to capture offense report data in the former system and comparing these to the time required to capture information utilizing the new system. Another random sample was taken of two types of reports – those using cue cards and those not using cue cards. These reports were read aloud and timed. The cue card reports were read in nine percent less time than the non-cue card reports. This test indicates that the new system was successful in reducing unnecessary verbiage while increasing report quality.

Sampling techniques were also used to measure the investigative tasks covered in a specific type of report. Quality measurements of the existing systems were compared to the Record-O-Port system. Results indicated a seventeen percent increase in report quality. Again, the comparison was made between cue card and non-cue card reports. On a scale of one to one hundred, results showed that the average cue card report netted ninety-nine points while the average non-cue card report netted ninety points. The non-cue card reports were handwritten and very difficult to read, in sharp contrast to the neatly-typed cue card reports. Due to the fact that officers were dictating reports as opposed to writing them, there was also noted a significant increase in the vocabulary level used by each officer. This accounts for the fact that officers in general speak more effectively than they write. Various conversations with officers involved pointed to the fact that oftentimes specific words or terms were not included in the report for the simple reason that they were unable to spell them properly.

In summary, the evaluation indicated the success of the project in that the primary objectives were all achieved. As a result, agencies will receive improved offense reports in a standard format, as well as having an upgraded records system for their internal use.

Implementation of the Record-O-Port system was initiated in large, as well as small, police agency installations. The goals and objectives of the Record-O-Port project were adjusted in the larger agencies to reflect the input needs of the Offense Name Index System (ONIS) and the Departmental Management Information System (DMIS). The ONIS system provides for a computerized index and summary record, which includes current case status on all incident offenses and accident reports. The DMIS system was also designed for use in computer supported law enforcement agencies and provides detailed management information to assist administration in more effectively allocating resources. The major components of DMIS relate to selective enforcement, manpower allocation, officer activity, section activity, division activity, department activity, and crime-to-suspect matching for investigative purposes. The pilot project addressed the report-writing problem on the field level, but due to input requirements of the ONIS and DMIS systems, it was necessary to make an adjustment in the scope of the project. This change, however, did not significantly alter the original intent of the project.

Design of the formats for the Record-O-Port system followed the completion of data element determination of both ONIS and DMIS, as well as programming and testing of each separate system.

The concept of the Record-O-Port system in computer-supported law enforcement agencies meets the Utah Criminal Justice Information System (UCJIS) requirements for field data capture, which emphasizes speed, completeness, and accuracy of inbound data. The new system provides report generating capability on the field level, which, in turn, increases the quality and quantity of the data related to offense reports and decreases the time required by the individual officer to capture the data. The system, as mentioned previously, also supports two automated files. Impact on the state and Federal levels is experienced as a result of this effort via data capture which will be produced through the system, and which will support crime activity statistical systems related to the Uniform Crime Report.

Historically, most small agencies, due to a lack of resources, do not report crime statistics on a regular or accurate basis. Because of this, there is reason to believe that a crime profile for sparsely populated areas has never been clearly established. The bulk of data currently collected is supplied by the larger urban agencies where the resources necessary to support a formal record system, including agency reference data and management information, are available.

The small agency phase of the Record-O-Port project is responsible for generating a records system for those agencies which presently have no formal system, as well as uniformly improving upon current operational record systems.

The scope of the original Record-O-Port pilot was expanded to include assistance to small law enforcement agencies in implementing a supporting records and filing system. Implementation began in forty-eight police agencies throughout the State. This is the first of three anticipated groups to adopt the system.

Data capture in the small agency system utilizes recorders as well as use of the cue cards. The secretary then transcribes the information on tape to the Uniform Incident/Offense Report. The original of this form is filed by case number and all names are indexed and filed in the Master Name Index file. The second copy is used as a work copy by the department, and the third copy is forwarded to the Utah Bureau of Criminal Identification for coding and subsequent data processing. This copy will provide UBI the vehicle to generate Uniform Crime Reports for each agency, as well as the capability of providing an optional service of processing and reporting management planning data and other reference data for agencies desiring this service. A Name Index card is the fourth copy and eliminates the need for typing one of the index cards. Various other forms are also provided by the system. A follow-up report is used to capture supplemental investigation information, and is filed with the corresponding Uniform Incidence/Offense Report. The Article/Vehicle card is used to index stolen cars and property, and the Want/Warrant Master Name Index card is used to index warrants.

The record systems of local law enforcement agencies will eventually be the foundation for a statewide information system designed to provide immediate access to all available information.

A fundamental purpose of this effort is a collection system for statewide police statistics to be developed and implemented through the Utah Bureau of Identification. The system is designed to generate automatically data elements required for State level statistical systems and for local agency management information systems. The system provides for automated analysis of information received from inputting agencies and, in turn, this data is analyzed and returned to submitting agencies for their use.

By providing an improved method of gathering offense information accompanied by a supporting records and filing system, law enforcement agencies will have the capability of generating more accurate investigations, which will result in more successful prosecutions.

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