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Laptop Computer Assisted Report Writing

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TECHNICAL REPORT

October 1990

NOTE: Further information about this report can be obtained by calling the CPRC information number (613) 998-6342

LAPTOP COMPUTER ASSISTED REPORT WRITING

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SUMMARY EVALUATION

The Winnipeg Police Department entered a joint project with the Canadian Program of Science and Technology in Support of Law Enforcement to run a pilot program with respect to computer assisted report writing. The objective of the project was to determine the effectiveness of police officers' report writing in the field via portable laptop computers.

Grid Systems Canada Inc. was selected to develop an automated Case Incident Reporting System intent on significantly reducing the officer down-time associated with case incident report preparation. This would have a beneficial impact on manpower utilization and allocation, ultimately improving service to the public. Current departmental statistics indicate a down-time rate of as much as 29% associated with the preparation of case reports. By going to an automated system, the Winnipeg Police Department anticipates a significant reduction in the down-time.

Secondary objectives include improving the accuracy and completeness of the data collected as well as reducing the data entry requirement for the mainframe computer system and C.P.I.C.. Potential benefits are an improved recovery rate for stolen property and a reduced cost for the data entry operation.

Another potential benefit which has been put forward is that of an improved public perception of police efficiency through the implementation and visible use of new technology.

Grid Systems undertook the task of developing software which would emulate the current case incident form and supplied laptop computers to be used by the patrol officers.

The GRIDCASE 1520 laptop computer was chosen as most suitable for field use by the patrol officers of the force. The 1520's ruggedness, durability, compact size, comparatively light-weight and DC power capability make it ideal for police environment.

The task of developing software/hardware now complete and approved, a task force was struck to develop a departmental policy and procedure manual, together with an associated lesson plan which received Executive approval September 1989.

The Executive of the Winnipeg Police Department, in conjunction with the approval of the Board of Commissioners, requested that the electronic report writing system by implemented operationally in Division 16, a district which had recently introduced the Community Based Policing concept.

A "Train the Trainers" program was initiated whereby two selected officers from Division 16 were to receive 12 hours of training in the use of laptop computers, who in turn were charged with the responsibility of training the members of their division.

During the month of October, 1989, ten laptop computers were introduced to field use, with the following information addressing the results of a survey that was circulated among members of District 6.

LAPTOP COMPUTER SURVEY REPORTS

The following report addresses the results of a survey that was circulated among the members of District 6 between the months of December 1989 and March 1990, regarding the use of laptop computers.

The survey was comprised of 3 pages of questions which collected information on the demographic characteristics of those surveyed and their attitudes to the use of the laptop computers. As well, separate sheets were included for comments from supervisors and users.

Surveys were circulated to all members of the Division who used the laptop computers. Of the actual complement in District 6 below the rank of Staff Sergeant (120), 49 surveys were completed and returned. This indicates a response rate of approximately 41% which is slightly less than satisfactory for a survey of this type; (50% response rate is usually considered the minimum required). However, the results to each question are so uniform in response that it would indicate the view of the majority of District 6 members was probably correctly reported.

Of these 49 returned, 6 surveys were completed by supervisors, (Sergeant I). These results are not included in the results reported below, but follow a similar trend to those reported below.

DEMOGRAPHIC CHARACTERISTICS

The majority (88%) of the sample was in the 26 - 40 age category. 92% of the sample were male, 2% female and 6% did not indicate gender. In terms of educational level, the majority (40%) of the sample were high school graduates only, 32% had some university courses, and 18% were university graduates. Years of service of the respondents ranged from 2 to 25 years with the average being 15 years of service. Overall, it would seem that the respondents are fairly representative of the members of District 6, and the Department as a whole.

COMPUTER USE

- 60% of the respondents indicated they had used a computer prior to the start of the laptop project. The use ranged from games, (42%), information retrieval, (34%), word processing, (26%), and data entry (20%).

TYPING SKILL

- A slight improvement in typing skill was reported after using laptop computers. The percentage of individuals who rated themselves as "good" typists increased from 60% to 64%, and the number of individuals who rated themselves as "excellent" rose from 14% to 22%.

USAGE

- The majority of the respondents (84%) have used the laptop to write reports. Of the total group, 56% have used the machine to write from 1 to 20 reports, while the remaining 28% have written in excess of 20 reports.

- A considerable number of respondents (38%) reported that computer written reports were returned less often by supervisors for corrections than hand written versions. 40% stated that the reports were returned about as often as the hand written reports. Only 4% indicated that the reports are returned more often.

- A slightly lower number of respondents (32%) reported that computer written reports were returned less often by supervisors for corrections than type written versions. 48% stated that the reports were returned about as often as the type written reports. Only 6% indicated that the reports are returned more often.

- Most respondents (78%) required little or no assistance in using the laptop.

- The majority (64%) of users had never lost a report with the laptop system.

- The majority (50%) indicated that the laptops were awkward to use in the field.

- 96% of respondents did not write draft reports before preparing the final copy.

- 70% of the respondents used the laptops in the station. Only 28% used them in the patrol car, and 22% used the laptops at the scene.

OPINIONS ON THE USE OF LAPTOPS

- 58% of the respondents indicated that computer reports are faster to do than handwritten reports.

- 80% indicated that the computer entered reports are easier to correct than hand written reports.

- 62% felt that fewer errors were made when using the computer, rather than hand writing their reports.

- The majority (50%) of the respondents indicated that the computers are difficult to store in the patrol car.

- 88% of the respondents would rather not write their reports by hand if given a choice.

- 82% agreed with the statement that the laptop training was adequate.

- 70% stated that using computers in report writing made them more efficient in their duties.

- 60% of the respondents disagreed with the statement that computer files are easier to lose than paper files.

- 60% of the respondents stated that entering reports by computer saved them time.

CONCLUSION

It would seem that from the above findings, some important points are readily apparent:

1. The members prefer to enter their reports on the computers, rather than hand writing or type writing reports, if given the choice.

2. The members are not using the laptop computers in the patrol cars or at the scene of calls to the degree that was envisioned initially, but prefer to use the laptops in the station, thus making them very expensive word processors.

3. Training of the members on the laptop computers was successful, but the awkwardness of the machines and storage concerns in the patrol vehicles caused the majority of use to be in the station.

4. Down-time has been reduced from 29% to 21%.

5. The officers agreed with the "fill-in-the blank" format.

6. The omission error rate has been reduced by 8%, demonstrating a more complete and accurate report.

7. The current printed police forms cost $ .71 per page. The laser printed forms $ .10 per page.

8. The less than satisfactory response is a direct reflection of the Community Based Policing concept.

9. 60% of respondents stated laptop computer reports saved time, thus reducing officer down-time.

10. The data entry operators who receive the reports for entry to the host system state, "That a laptop prepared report is well laid out and much easier to read".

11. The word processing ability of the laptop needs to be improved, if it's use is to be continued.

SATISFACTION

The goal of the Winnipeg Police Force was to provide a system that would assist field officers in the collection and storage of data. The question is, Have we reached our goal? and the answer is "yes".

Acceptance of the system will continue to improve when those that are reluctant notice that those using the system willingly, were finished their end of shift and on their way home, while they remain behind completing their reports or leaving them to be completed at a later time and date.

RECOMMENDATION

It is the opinion of those involved in this project:

1. That the laptops should be distributed to the one man report units in each District. or:

2. With the purchase of additional software, as they have a hard drive, the laptops could be used as PC's within the police department, distributed under the control of the P.A.R.C.S. Committee.