The PoliceChief
THE PROFESSIONAL VOICE OF LAW ENFORCEMENT JANUARY 1989

Miami's New Crime-Fighting Weapon

Move Over, Crockett and Tubbs; Miami Has a New Crime-Fighting Weapon

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Miami police are putting the "byte" on crime. And the results of the department's efforts to computerize its operations—from computer-aided dispatch and computer-assisted report entry to mobile digital terminals—have drawn the attention of law enforcement agencies worldwide.

While it may not be glitzy enough for *Miami Vice,* the system has earned a starring role with city officials. It is used in criminal investigations and has helped solve homicide cases. It aids in the recovery each year of hundreds of thousands of dollars in stolen goods. And through its "hazardous location file," it provides an extra margin of safety for patrol officers responding to calls.

It has made life much easier for everyone in the department. No longer do employees have to deal with lost records. And hundreds of cabinets full of paper files have been eliminated because of the trust the department has in the system.

More important is the fact that we now have a tool to help us do our jobs—from pinpointing trouble spots to solving crimes—more efficiently.

Investigators, for instance, have always had to rely on information they could keep in their heads, supplemented with a lot of legwork on the street. With the computer system, they can sit down at a terminal and draw up all their leads, then systematically check them out.

Miami police handle an average of 400 incident reports each day, or close to 150,000 reports a year. Those reports used to be cross-indexed on a card system, which required extensive time, effort and personnel to maintain.

Today, the three years of records the department maintains on-line can be searched in minutes. Trying to manually search through those 450,000 reports would be impossible.

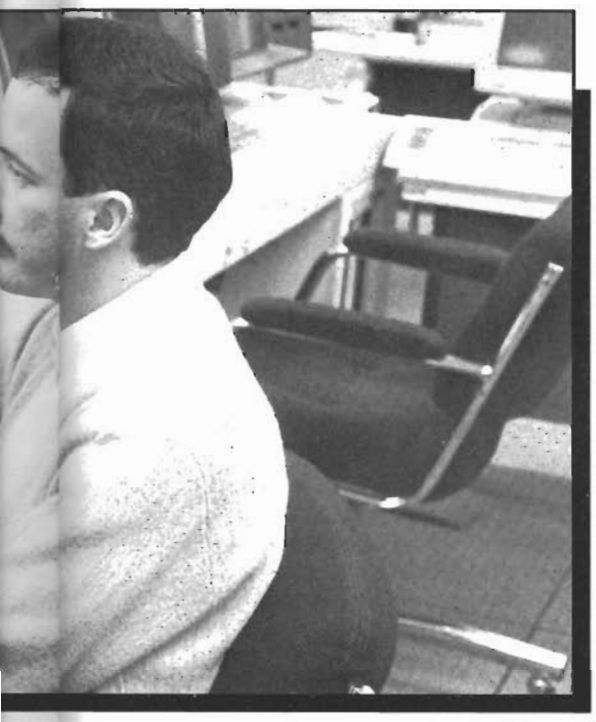
Before the city replaced its four computers in 1984 with a Unisys dual processor B 7900 mainframe, we were able to maintain only three months' worth of reports on our system. Today, the entire city, including police and fire applications, runs on one-half of the mainframe. The second half is used for systems development and as a backup unit. The mainframe supports five tape drives, two high-speed 1,250-line-per-minute printers, two 30-page-per-minute laser printers (scheduled to be upgraded to 70 ppm laser printers), and about 500 desk printers and terminals.

The police department, which employs 1,100 sworn officers and another 450 civilians, has about 250 terminal devices, 55 desk printers and 33 micros.

There are also approximately 137 mobile digital terminals (MDTs) in patrol cars. Linked to the mainframe, the MDTs allow officers to query local, state (FCIC) and federal (NCIC) data bases to check for such things as stolen vehicles and warrants. They can also view the "incident screen," showing the information initially taken by a complaint clerk. That screen also indicates which units are available for backup.

When a call is received by the complaint clerk, information is entered into an incident screen. From there, it is automatically routed to one of four dispatchers, each of whom handles a different section of the 34.3-square-mile city. The call is displayed on the dispatcher's waiting incident screen in order of priority; for example, an assault case would receive priority over a purse snatching. If the call is not assigned within a few minutes, it will blink on and off to alert the dispatcher that it is pending. Other screens display calls in progress and the status of available units.

The city plans to eventually equip its entire fleet of 300-plus patrol cars with MDTs and to upgrade their ability to access data from the mainframe. Plans also call for officers to be able to enter their reports directly into the mainframe from those units, rather than filling them out on paper at the end of a shift and



Systems programmer Rick Mahlman monitors the entire city of Miami computer operation from a control console. The city has a dual processor Unisys B 7900 mainframe.

having them keyed into the system by the data entry staff.

All of the police applications have been developed in-house by a small group of systems analysts in the Department of Computers, who are assigned to the public safety group.

Key among the police applications are the computer-aided dispatch (CAD) and computer-assisted report entry (CARE). Initial efforts concentrated on enhancing the CAD system, since communications is one of the most critical elements in the department.

One of the CAD enhancements was the "hazardous location file." That program automatically alerts a dispatcher that a potentially dangerous situation exists at a specific address. The dispatcher can alert the officer to that fact and assign additional units to respond to the call.

Another feature—the one-hour call-up—prompts dispatchers to contact officers who have not checked in for 60 minutes. That program was developed to monitor officers who normally would not regularly check in, such as an officer on a stakeout.

Development of the call-up program is a good example of how systems development personnel such as James E. Osteen Jr., a project analyst, and Alan Sheffield, a senior systems analyst, work

closely with the computer support liaisons in the police department. Our representatives had suggested the call-up program be developed for officers on stakeouts; Osteen's group recommended and received the go-ahead for the program to be developed and to apply to all officers.

Monthly meetings are held between Osteen's group and police officials to discuss system performance and any program modifications necessary.

In some cases, we may ask for special one-time programs to aid us in our investigations. When officers investigated a homicide case in which the victim's ear was missing, for example, a program was run to search for all cases in which the word "ear" was a part of the report. The result was that we were able to bring in all the cases that might have some connection to the homicide. Police eventually solved the case and were able to link some of the crimes.

The system also allows police to cross-examine the names of victims, witnesses and persons filing reports, thus permitting investigators to build a tree of leads by going through different cases that may not appear to be related in any way.

The system has helped the department recover hundreds of thousands of dollars in stolen merchandise. In the near future, the "pawn system" program will automatically compare the data base of items reported stolen to one showing items that have been pawned. Currently, pawn shop owners are required to fill out a card describing items pawned and to obtain identification from persons bringing in the items.

Several South Florida police agencies share the pawn information from their communities on-line with each other.

A "frequent pawner report" will flag people who are bringing in too many items. If a person is pawning a number of color television sets in one week, for instance, that will come up on our report and will be investigated.

Reports can also be generated through the "property system" program to track evidence in a case, show found property and provide an inventory of seized or confiscated items.

Other programs on the system include burglar alarm invoicing, which is tied to the CAD system. Police wil not respond to an alarm unless the property owner has a valid alarm permit; the system automatically shows whether or not a permit is valid before an officer is dispatched, and invoices property owners after a certain number of false alarms.

We have also found the system to be of help in determining manpower allocations. Quarterly reports are generated, providing a breakdown on specific types of crimes, dates, times and locations. Resources can then be allocated to deal with problem areas.

In some cases, officials may need only to adjust patrol routes. In others, the criminal analysis department may assign special patrols to specific areas of the city.

In one case, a data base search turned up the name and address of a murder suspect's girlfriend. Officers watched her house and arrested the suspect when he showed up.

The system, however, is not used just to deal with elements outside the police department. It is also used to track basic information on employees and job applicants. Included in the 50 to 60 personnel programs is an internal security system that monitors complaints against officers, such as excessive use of force or discharging firearms.

This provides us with an early warning system on officers who may develop certain types of problems. We can then work with those officers to head off those problems.

Because of the dependence that police—as well as the rest of the city—place on the computer, reliability was a key factor in its selection. The Department of Computers has a policy that the system have at least 99 percent uptime. The 1 percent downtime even includes times allocated for program maintenance and backing up of data.

The computers actually run off their battery backups, which eliminates power fluctuations. A diesel generator is also available to keep the systems running, should the power be off for an extended period.

Our use of advanced technology includes an Automatic Fingerprint Identification System (AFIS), which houses 100,000 tenprint cards. The AFIS provides the ability to search single-print crime scene latents against the total database. Annually, hundreds of cases are solved by AFIS "hits."

Additionally, we are involved with the City Planning Department, Public Works and computer department to develop and implement a Geographic Information System (GIS). Upon installation, the GIS will allow computer-generated "crime spot maps." GIS will also provide mapping on-line for dispatching and emergency response uses.

We believe the Miami Police Department is one of the most highly computerized municipal departments in the United States. Its reputation has prompted visits from law enforcement officials from New Zealand, Peru, Costa Rica, Brazil and China, as well as from agencies throughout the United States.

Not to mention Sonny Crockett and Ricardo Tubbs of *Miami Vice.* ★