

Crime-fighting Computers

Be a Power Reader

Make Predictions Think ahead about what you will be reading in this article. What do you know about how police officers use computers in fighting crime? Take a minute to look at the title, the pictures, and the section heads. Then write down at least three topics you think the author will cover. After finishing the article, review your list. How accurate were you in predicting what the author would cover?

A Day in the Life of Officer Maher

Can computers fight crime? They certainly can, and in more ways than you might imagine. Today's squad car has become a traveling office. And like most offices, it depends heavily on computers. Let's look at a day in the life of Officer Maher, who works in a small Midwest city.

On this day, she is assigned to catch speeders near an elementary school. Officer Maher sits in her patrol car and points a computerized radar "gun" at passing cars. The gun automatically displays each car's speed. If a car is going over the speed limit, she pulls the car over.

Once she has stopped a speeder, the full power of computers begins. Officer Maher uses a **laptop computer** to check a number of **databases**. Each database contains a specific type of information. She enters the car's license plate number to make certain that it has not been stolen. She checks whether the car's driver has a valid driver's license. She also determines whether the driver has a criminal record or is wanted for another crime. If Officer Maher needs to write a ticket, she enters the information into her laptop and the ticket is printed.

All of this information helps Officer Maher perform her job and keep us safe. Not just local police departments rely on

computers. State police, such as the highway patrol, and national agencies—such as the FBI (Federal Bureau of Investigation) and DEA (Drug Enforcement Agency)—also depend on them.

The National Crime Information Center



The FBI has an enormous database that serves law enforcement agencies across our country. It is called the **National Crime Information Center (NCIC)**. It contains individuals' criminal

records, mug shots, physical descriptions, and fingerprints. It even has information on missing children.

The FBI also has a system that can automatically match fingerprints. The **Integrated Automated Fingerprint Identification System (IAFIS)** contains tens of millions of fingerprints. A police officer can use a computer to scan a fingerprint found at a crime scene. The computer then sends this fingerprint to the IAFIS. The system searches for a matching print. If one is found, information on that person is displayed on-screen. Before this database was created, fingerprint checks usually

took between eight days and three months. Now they take a couple of hours. In March of 2002, police officers used the IAFIS database more than 3.2 million times.

A Laptop in Every Squad Car

Think about what a police officer might have done when stopping a speeding car in 1980. Typically he or she would use the squad car's radio to call a **dispatcher**. The dispatcher would then look up information in a database to see if the driver was the legal owner of the car, had any previous traffic tickets, and so forth. This took time.

As we've discussed, more and more police vehicles contain laptop computers, which officers use to access both state and national databases. Studies have shown that using a laptop takes the officer about one-third as much time as requesting information from a dispatcher. In addition, dispatchers are now free to perform other jobs. For example, the dispatcher can use the time to answer emergency 911 calls rather than looking up information for a police officer.

Some police departments are experimenting with placing fingerprint scanners into squad cars. The officer can scan a person's fingerprint right on the spot and instruct the FBI's IAFIS to search for a match.

Crime Scene Investigators

You've probably seen special crime scene investigators on television shows. Their job is to use scientific methods to find out who committed a crime. Using scientific tools, such as computers, microscopes, and laboratory tests, to investigate crimes is referred to as **forensics**. The investigators look for evidence linking a specific person with the crime. Because everyone's fingerprints are unique, matching the fingerprints found at a crime scene can be helpful. Sometimes **DNA (deoxyribonucleic acid)** is used to identify a criminal.

Like fingerprints, each person's DNA is unique. Every cell in a person's body contains DNA. DNA also is contained in body fluids such as saliva and blood. Forensic scientists may be able to get a sample of DNA (such as a blood smear) from the crime scene and then also get a sample from a suspect. The scientists then use microscopes and computers to analyze and compare the two samples to see whether they match.

Forensic scientists use computers for many other purposes. For example, they can check a computer database to find out what type of bullet was found at a crime scene. They then may be able to tell police officers what type of weapon they should be looking for.

Computer Reenactments

Imagine that you are on a jury that is hearing a trial where a man has been accused of intentionally setting his home on fire in order to collect insurance money. The defense attorney (the lawyer who is trying to prove the man's innocence) says that the fire was accidental. To make his argument stronger, the defense attorney decides to use a computer reenactment to show the layout of the man's home and to demonstrate step-by-step the man's actions and the circumstances that led to the fire.

Studies have shown that juries are more than six times more likely to remember a computer reenactment than they are to remember what a lawyer has told them.

Computer reenactments can also be used by police officers to determine how crimes may have occurred. Officers might look at several different reenactments to determine which one was most likely.

Traffic Accident Reconstruction

Forensics is also used to investigate traffic accidents. Imagine that you are a police officer and are sent to the scene of an accident. Two cars have run into each other.

Both drivers say that it was the other driver's fault. What do you do?

Today's police officer can get help from **traffic accident reconstruction applications**.

These applications help police officers determine what actually happened during an accident.

Crash 2000 is an example of this type of application. The user enters information such as the length of skid marks made by the vehicles and the types of vehicles being driven.



Crash 2000

Being able to accurately reconstruct an accident is very important in police work. It can help in determining if anyone involved in an accident broke the law. For example, the software might determine that one of the drivers was going over the speed limit.

Where's My Briefcase?

Let's assume that a criminal has been hired to steal a salesperson's briefcase. This salesperson sells precious gemstones. The contents of his briefcase are worth hundreds of thousands of dollars. Fortunately, within an hour of the thief's stealing the briefcase, the

police have found it. The thief is taken off to the local jail. The briefcase contained a special tracking device that used **GPS (Global Positioning System)** technology.

GPS technology was developed by the military. Its purpose is to determine the exact location of an object on Earth. The system uses 24 satellites that orbit Earth every 12 hours. The object being tracked must contain a special electronic device that sends signals to these satellites. These signals are used to pinpoint the object's location.

Today, GPS technology can be used to track cars, boats, and animals such as valuable race horses. There are even special watches that can be worn by children. If the child is lost or kidnapped, the child's location is tracked.

Crime-Fighting around the World

What would you do if you were walking down the street and saw someone breaking into a car and stealing its sound system? If you are in some parts of the Netherlands, you can run to a street-corner computer. These computers are linked directly to police stations. You can either type in what you've seen or talk with a police agent who can be seen on the screen. A police officer is immediately sent to the scene. So far, the system has caught bike, car, and car-radio thieves. During the first month, 3,000 crime reports were made on a single computer.

The computers also provide other information. They show pictures of missing and wanted people. If you find an item someone has lost (such as jewelry or keys), you can quickly report it to the police. In addition, you can ask for directions if you are lost. The system has been so popular that law enforcement agencies in France, Norway, the UK, and Hungary are interested in it.



Review Questions

1. List two examples of the types of information contained in the National Crime Information Center database.
2. What are some advantages of police officers having laptops in their patrol cars? Can you think of any disadvantages?
3. How is crime reenactment software similar to traffic reconstruction software? Can you think of any ways in which they are different?



What Do You Think?

1. As discussed here, special watches containing GPS technology can be used to track people. How would you feel if your parents wanted you to wear this type of watch? What might be the advantages? What about disadvantages?
2. Can you think of any other ways that computers could be used to help local police officers?

Glossary

database A group of records that can be accessed in many different ways. Each record contains a collection of information, such as all the information available on a particular individual.

dispatcher A person who sends and receives messages.

DNA (deoxyribonucleic acid) A special acid contained within each person's cells. Each person's DNA is unique.

forensics Using scientific tools to investigate crimes and solve legal problems.

Global Positioning System (GPS) A system of 24 satellites that are used to locate objects on Earth. The object to be located must contain a special GPS tracking device.

Integrated Automated Fingerprint Identification System (IAFIS) A computerized

system developed by the FBI. It can search through millions of fingerprints, looking for a match to a specific print.

laptop computer A portable computer with a built-in screen. It is small enough to sit on a person's lap.

National Crime Information Center (NCIC) An FBI database that contains information useful to law enforcement agencies, such as individuals' physical descriptions, fingerprints, photos, and criminal records.

traffic accident reconstruction application A computer application that can help police or other individuals determine how a traffic accident occurred. For example, it can help determine how fast a car was traveling when it struck an object.