

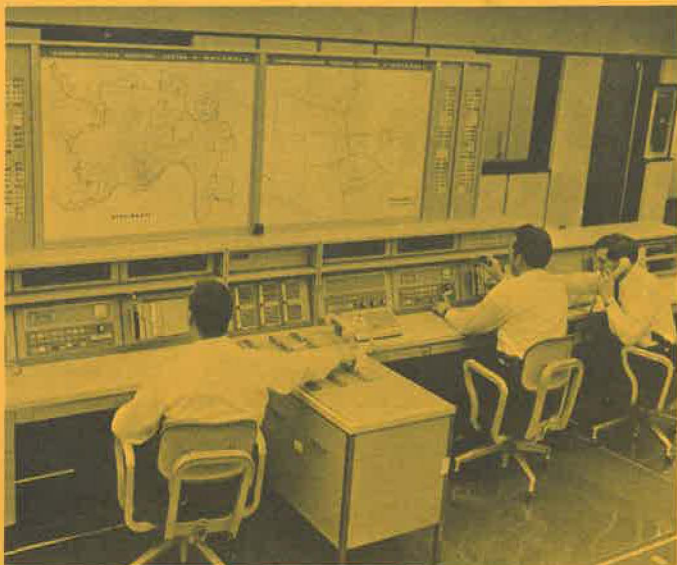
## MODERN COMMUNICATIONS HIGHLIGHT CIVIC DEVELOPMENTS

---

By Henry J. Sandman, Director  
and  
Vincent F. Grote, Supt. of Communications  
Department of Public Safety  
Cincinnati, Ohio



At the heart of Cincinnati's new \$1¼ million CINCOM police communications system is this new control center. Here, modern command and control consoles are used to efficiently coordinate and assist every law enforcement officer throughout the 88-square mile city.



At the command and control console, two dispatchers work each Zone, receiving incoming emergency calls and dispatching officers to handle each situation. Next to each dispatcher is a telephone backup man to handle incoming calls when critical situations develop. Above each console, an illuminated map quickly tells the dispatcher which officer is nearest the incident and his status—on call or available.

**“Over the past few years, the City of Cincinnati has undertaken a progressive civic improvement program designed to better serve the growing needs of its citizenry. In this program, modern communications systems have played an important role in preserving life and property for those taxpayers enjoying the benefits of this reconstruction era.**

One of the first achievements in this era was the construction of a modern convention center in the downtown portion of the City. The communication problems associated with a large convention center of this type were overcome by the installation of a paging system. The convention center is connected to a new and modern overhead pedestrian walkway system to the underground parking plaza at the Fountain Square Center, Cincinnati's main downtown landmark. Here, a closed circuit television system has been installed for efficiency as well as security. By viewing monitors in the main office, one garage operator can watch elevators and gates 24 hours per day. An intercom system attached to the camera allows the operator to communicate with people using the facility at any of these points. He can also observe any abnormal activity occurring in the parking facility and immediately contact the proper authorities.

A more recent development was the completion of the Riverfront Stadium. Upon entering the stadium grounds and while enjoying the performances of the Cincinnati Reds baseball team or the Cincinnati Bengals football team, citizens are protected by a communications security system used by head ushers in the stadium. Here, the head ushers use two-way Motorola “Handie-Talkie” FM portable radios to communicate with one another and coordinate the rush of activity that accompanies each game.

Highlighting this progressive reconstruction era is Cincinnati's new \$1¼ million police communications system which went into operation this winter. Termed CINCOM, the new system provides faster response to citizen calls, more protection to the masses, and a closer relationship between the police and the public.

Under CINCOM, every man in patrol and traffic service, every plainclothesman, every commanding officer carries a personal two-way radio. The older conventional system relied primarily upon two-way radio in vehicles, secondarily upon lightweight, two-way units which some of the personnel carried. This was Cincinnati's system for the last several years. Today, we have taken the radio out of the car and put it on every man.

This gives him freedom of action, a sense of security and an effectiveness he has never had before. Now he can leave the car and still be in touch with headquarters. He can walk a beat, as he did in the old days. He can call for assistance . . . or for an ambulance . . . from the fifth floor of a tenement. Or he can enter a steel-frame building and ride the elevator to the basement; he can be underneath a bridge or in any of the places that used to be considered “dead.” They are not dead any more. No matter where an officer is, in over 99 percent of the city's 88 square miles, we can hear him, clearly, at headquarters, as soon as he talks into the mike of his Motorola two-way portable radio.

What makes this possible is our system of remote antennas and receivers at 16 of the most strategic points in the city. Usually two or more of the receivers pick up a patrolman's signal. From the receivers, it goes through telephone lines to our new communications center, where a comparator automatically chooses the strongest and best signal and feeds it to the dispatcher. The dispatcher's voice, in turn, travels by phone line to our 275-watt transmitter, which has a 600-foot tower on a high hilltop. And our man with the personal two-way radio gets the message, wherever he is.

Weighing 36 ounces or less, this new Motorola portable radio rides easily in a leather holster suspended from the officer's belt. The radio hangs on his left, the revolver on his right. We expect the personal radio to become the most effective law enforcement tool available to the police officer.

Our vehicular radio was valuable, up to a point. That point came when the patrolman had to leave his car. Out of his car, he was out of touch. Conversely, the entire force was less efficient when the man was unavailable for command, advice, or reassignment. By decreasing our available manpower, this raised our cost of enforcement. And when the officer had to stay in contact with headquarters, radio tied him to his car.

Personal radio unties him. We feel it makes possible a 25 percent increase in available manpower—without increasing the size of the force—since every man on duty is always in contact with the dispatcher. Considering it another way, the city will gain at least a million dollars worth of manpower during CINCOM's first year alone. At the same time, the police officer gains a higher degree of security when he is on duty in the field.

His radio can operate on any of four channels: East Zone; West Zone; Citywide; and either Inquiry or Investigative. The men on patrol use the Inquiry channel for information from headquarters. The men in our Crime, Vice and Juvenile Bureaus use the other channel, Investigative, for their own specialized communications traffic. And the top echelon police officers use a sixth channel, Command. These six two-frequency channels give us a significant improvement in our police communications.

CINCOM's control point is in a new dispatch room, part of a 10,000 square foot communications center complex in a recently built section of our police administration building. On one side of the dispatch room are radio-telephone consoles where two dispatchers work the West Zone. On the other side, two men handle the East Zone. Incoming emergency calls from the East or West Zone appear at the corresponding zone complex for immediate action. Above the consoles are illuminated city maps and a system of status control lights showing which men are on call.

The system is designed to handle varying degrees of radio traffic, from a trickle to a torrent. Next to each zone dispatcher is a position for a telephone backup man. The center of the room has three more telephone backup positions. It also has a console for the supervisor, who assigns the room's personnel, shifts them as needed, and

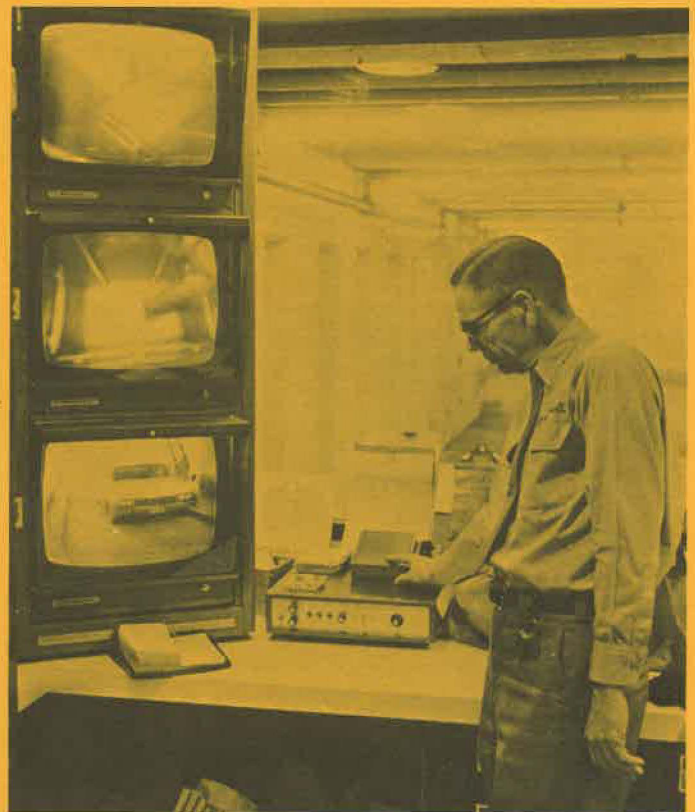
monitors the entire operation. He can also order any or all channels to operate in the repeater mode, which enables the men in the field to talk directly to each other.

At other consoles in the center section, two men control traffic on the Citywide, Command and Inquiry channels. To find answers to the inquiries, they use video data terminals. These terminals are connected to data processing centers in Cincinnati for information about the city and its surrounding region; in Columbus for information about the entire state; and in Washington, D.C. for nationwide information. If we ask Washington to identify an out-of-state license, we can get the answer in 20 to 30 seconds . . . and this is just a minor example. Today, wherever a Cincinnati patrolman moves, he has the finest electronic resources in the country at his immediate call.

Incoming messages on our Investigative channel are answered 16 hours a day at remote control consoles in the Crime and Juvenile Bureaus. During the quiet third shift, Investigative messages are handled in the dispatch room. What's more, every console in the room is equipped to operate on all six radio channels. Now we can switch from one function to another during heavy or unusual demands on any particular function. This combination—specialized channels, flexible dispatching—gives us the communications we need for fast, effective enforcement.



Under CINCOM, every man in patrol and traffic service, every plainclothesman, every commanding officer carries a lightweight Motorola personal two-way FM radio. Here, a policewoman, specializing in community relations, places her "Handie-Talkie" portable radio in her custom designed purse.



At the underground parking plaza at Fountain Square Center, closed circuit television monitors elevators and gates 24 hours per day. An intercom system attached to the camera allows the garage manager to communicate with people using the facility at any of these points.



Today, a patrolman is not restricted to his vehicle in order to remain in contact with headquarters. He can walk a beat as he did in the old days. Strapped to his left side is a Motorola "Handie-Talkie" portable radio with a speaker-mike connected to his lapel. No matter where he is, his signal will be picked up by two or more of the 15 satellite receivers placed at the highest points throughout the city.

Speaking of speed, the top of every console has a red "room alert" light. It goes on, for example, when a critical situation in one part of town suddenly demands the full crew's attention. Or when a quick description of persons wanted for a bank robbery requires an all-channel call. Or when a tornado is sighted. The dispatch room is potentially always an action room. Coordinated dispatching, sophisticated consoles, all-city coverage to personal radio-equipped police—this is the kind of communication that today's law enforcement demands.

CINCOM began five years ago when we asked Motorola Communications & Electronics, Inc. to make a radio propagation survey and recommend a systems design. Motorola's recommendations, approved by our Communications Division, were submitted to the City Council and approved in 1967. Motorola assumed total system responsibility. Work began on the 16 satellite receivers and their antenna towers. In spite of Cincinnati's extraordinary hilly terrain, this system gave us the coverage we needed.

Today a 30 KW propane generator stands by to provide emergency power at the main transmitter site. Emergency transmitters for four of the channels and emergency receivers for all six channels have



Responsible for getting Cincinnati's new CINCOM communications system on the air were: Vincent F. Grote (seated left), Superintendent of Communications; Henry J. Sandman (seated right), Director, Department of Public Safety; Lt. Col. John McLaughlin (standing left), Technical Services Commander; and Ralph Wehking, Assistant Superintendent in charge of electronic facilities.

been installed at the old tower. At one of the outlying satellite receiver sites, two 90-watt transmitters give us extra talk-out coverage along the low-lying banks of the Ohio River.

Our Police Division now has a bank of 349 portables for the men to wear. Each is a Motorola HT-220 "Handie-Talkie" two-way radio with "Private-Line" tone-coded squelch, which minimizes interference. Ninety of the units have the standard, built-in speaker-microphone. The rest have remote mikes, worn on the upper left side of the chest and wired to the radio that hangs from the wearer's belt. The uniform has been modified to accommodate the new personal radio.

In a larger sense, the entire police communications system has been modified for greater effectiveness. Taking the radio out of the car . . . putting the radio on the man . . . these changes are probably easier to discuss than to accept. Our city is fortunate in having a mayor, a city manager and city councilmen who have foreseen the rapid changes that will take place during the next decade; changes that will increase the administration's capability to protect the citizens of Cincinnati and, at the same time, provide the police officer with greater security."



Motorola Communications and Electronics, Inc.  
A Subsidiary of Motorola, Inc.  
1301 Algonquin Road, Schaumburg, Ill. 60172

® , Motorola, Handie-Talkie and Private-Line are trademarks of Motorola, Inc.

© 1971 Motorola Inc.