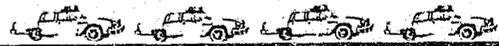


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OPERATIONS

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CARS



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This past summer two officers on routine patrol in Chicago's sixth district observed a suspicious-looking vehicle traveling through an alley. The officers followed the car and entered its Louisiana license plate number into their mobile terminal. Within 8 to 10 seconds, a response from the department's communications center confirmed their initial suspicions that the

plate had been reported stolen. They approached the vehicle and placed the driver under arrest. Subsequent investigation revealed the automobile had been stolen in California.

Similarly, officers assigned to a tactical team in Chicago's second district received information that known criminals were attending a meeting in a local motel. They secreted their

squad car in a dimly lighted area of the motel's parking lot and proceeded to record the license number of each of the 35 cars in the lot. Upon returning to their car, they checked each of the vehicles for steals and registration, and using the registration information, checked the owners for wants and warrants. Thirty minutes later, when the subjects returned to their autos,



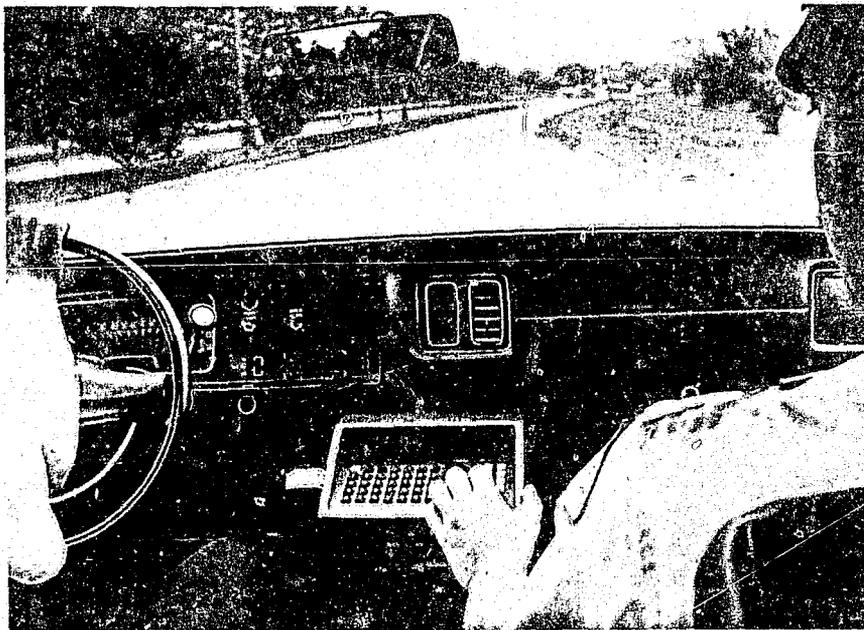
Sergeants Alexander, Banks, and Stapnick (left to right).

the officers approached two of the vehicles, and after identifying the drivers as the registered owners, placed them under arrest for outstanding warrants. Two more offenders were snared by S.M.A.R.T. (Special Mobile Automated Remote Terminal) Cars; similar occurrences have become commonplace since the recent deployment of mobile terminal vehicles in Chicago.

The Chicago Police Department's Communications Center enjoys a reputation as one of the most sophisticated and intricate networks of radio, telephone, and computer links

in the law enforcement profession. Methods of receiving citizen complaints and dispatching officers have been studied and favorably reported in a variety of publications. The implementation of S.M.A.R.T. cars has reinforced that reputation and lent additional support to the field forces by providing direct access to computer files on wanted persons and stolen property, without the necessity of relaying information to and from a dispatcher.

From its inception in 1961, the new Chicago Police Department Communications Center has been a model



Operating position of mobile terminal in patrol vehicle.

system, in that dispatchers could be in simultaneous contact with complainants and police officers on the street. The center initially consisted of nine tactical radio frequencies transmitting from the second floor of the headquarters complex. As the number of incoming calls increased, a saturation point was reached and delays in answering citizen calls resulted. The percentage of available air time was considerably less than the minimum standards for American Public Safety Communications officers. Thus, the number of radio frequencies was increased from 9 to 11 in 1974. Further workload increases led to additional requests to the Federal Communications Commission for even more frequencies; two more were granted in 1976. At that time, some zones were experiencing 96 percent use or actual air time, but no additional allocation requests could be granted since the department's share of the public service radio spectrum was completely filled.

Anticipating this diminution of available frequencies in the 460 megahertz range, alternative methods of conducting the traditional checks for wants, warrants, and stolen property were studied. It was determined that nonvoice digital transmission in the proposed 900 megahertz range which required no dispatcher intervention would be feasible. An extensive 5-year study was undertaken in cooperation with a major supplier of radio equipment and a computer vendor, the result of which was the development of a vehicular-operated computer inquiry system.

The system is comprised of a vehicle-mounted computer terminal, a logic unit, and a radio transmitter with receiver sites located atop several of the city's tallest buildings. At the communications center, a small computer acts as a message switch, routing inquiries to the local data base, which in turn routes the inquiry

to State data banks and the National Crime Information Center (NCIC). It returns responses to the inquiring terminal, while simultaneously determining channel assignments and keeping transmission traffic balanced. At present, the system is operating at 25 percent of its planned capacity with 54 vehicles. The department anticipates a future total of 216 units. At full strength, all vehicles which operate 24 hours per day in the patrol forces and selected investigative vehicles will be equipped with terminals.

Officers are given 8 hours of training on the operation of the system prior to assignment to a mobile terminal vehicle. Instruction consists of 4 hours introductory background information and 4 hours of "hands-on" practice with live files. Training is conducted in a classroom equipped with four live terminals so that each

officer is allowed adequate time to become fully familiarized with the equipment.

Operating instructions are kept as simple as is possible. Inquiries require the entry of a single code letter followed by the information sought. From the moment the inquiry is transmitted, the system requires no further human intervention. License or vehicle identification number (VIN) inquiries and local, State, and NCIC checks for steals are performed. Vehicle registration information is provided if the State is an NLETS (National Law Enforcement Tele-Communications System) member. Local, State, and NCIC are also queried for name checks, wants, and warrants.

In addition, the system allows communication between vehicles, independent of the voice channel dis-

patchers. With the proliferation of channel scanners and transistorized receivers, few traditional voice communications are secure from interception. With the message being transmitted in digital hexadecimal form, in a much higher frequency range, the possibility of interception and/or "de-

"[T]he possibility of interception is reduced and the security of tactical undercover or surveillance communications is enhanced."

coding" is greatly reduced. Equipment capable of intercepting and decoding the digital messages is very costly. Thus, the possibility of interception is reduced and the security of tactical undercover or surveillance communications is enhanced.

Sergeants Alexander (left) and Stapnick run a vehicle check.



The following data were collected regarding 54 S.M.A.R.T. cars in operation on a recent date selected at random.

41,886 inquiries in the same 24-hour period. This magnitude of inquiry is beyond the capability of the present voice channel radios. Skeptics might

car from each sector in the 10 affected patrol districts was chosen by headquarters personnel who had no prior knowledge of the personnel assigned.

TABLE I

Watch	Type of lic/plate	Inquiry name	VIN	Drivers license	City vehicle lic.	Adminis. messages	Total
1.....	423	117	18	18	3	1,442	2,021
2.....	510	89	28	10	3	1,439	2,079
3.....	737	110	17	21	2	2,065	2,952
Total.....	1,670	316	63	49	8	4,946	7,052
Administrative messages.....						4,946	
Total inquiries.....						2,106	
Total.....						7,052	

Table I indicates that the gathering of statistical data is greatly facilitated since it is automatically machine calculated. Table II (below), on the other hand, required a one-man day of sorting dispatch cards and human judgment to arrive at this level of analysis. To sort the data by watch would have required an additional man-day of work.

A comparison of the data discloses an important finding. Chicago has 337 beat patrol cars assigned to its first watch, 345 on the second watch, and 554 on the third watch. The 54 terminal-equipped vehicles performed 2,106 checks of persons and vehicles. The remaining 1,074 vehicles of the fleet performed the following checks on all watches:

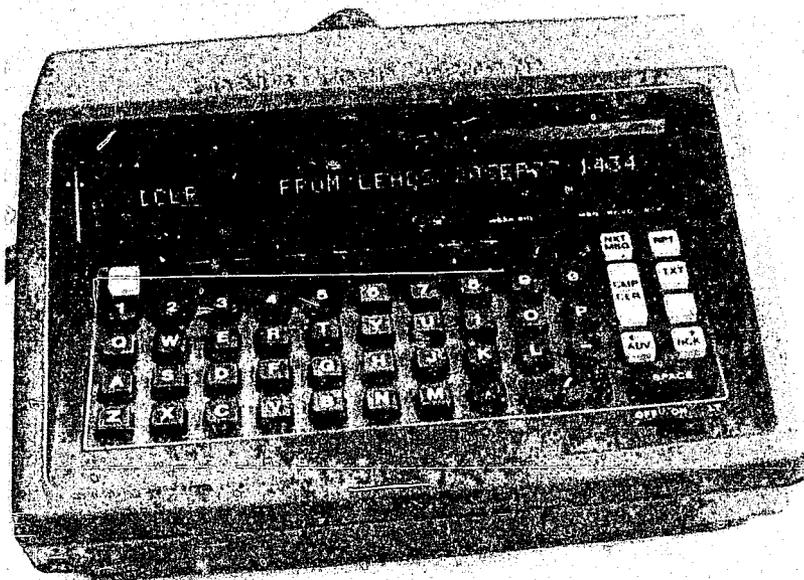


TABLE II

Type of inquiry	Names	VIN	Total
License/all			
819	151	85	1,055

To match the average achieved by the terminal vehicles, the nonterminal vehicles would have had to make

say that the result was achieved by assigning more highly motivated men to the terminal vehicles. In fact, 1

The primary criterion in selecting specific beat cars was geographic distribution to insure that maximum

coverage of the area would be achieved.

An additional factor to be considered is the speed with which the computer responses are returned. By voice channel, we found the following times from inquiry to response:

sons on the street are frequently stymied in making checks for wants, warrants, and steals, especially during hours of peak activity. They often find it necessary to refrain from requesting name checks or registration to insure sufficient air time for routine

[In minutes]

Type of inquiry	Registration	VIN	Name (warrant)
Lic/hot/cold only			
6.08	8.58	8.93	10.2

By contrast, with no dispatcher involvement, the terminal vehicles showed the following times for all types of inquiries as charted below:

transmissions. In addition, dispatchers tend to discourage officers from performing street stops of suspicious persons and subsequent checks for

#### ALL CATEGORIES OF INQUIRIES

Response time (seconds)	Percentage of total	Percent of cumulative total
1 to 5.....	68.1	68.1
6 to 10.....	17.1	85.6
11 to 15.....	5.1	90.7
16 to 20.....	2.6	93.3
21 to 25.....	1.6	94.9
26 to 30.....	1.0	95.9
30+.....	3.8	99.7

Officer acceptance of the system was immediate. Beat officers feel it is one of the most beneficial tools to be made available since the department switched from vehicle-mounted to personal portable radios. Frequent inquiries are received from officers regarding projected installation dates in their district.

The benefits of the system are readily apparent. Motivated street officers who challenge large numbers of per-

wants and warrants during busy periods. The result often is a fundamental difference in the perceptions of the dispatchers and field officers. Dispatchers perceive the necessity of preventing dispatch backlogs, while street officers are primarily interested in indicators of productivity, such as the number of street challenges leading to arrests.

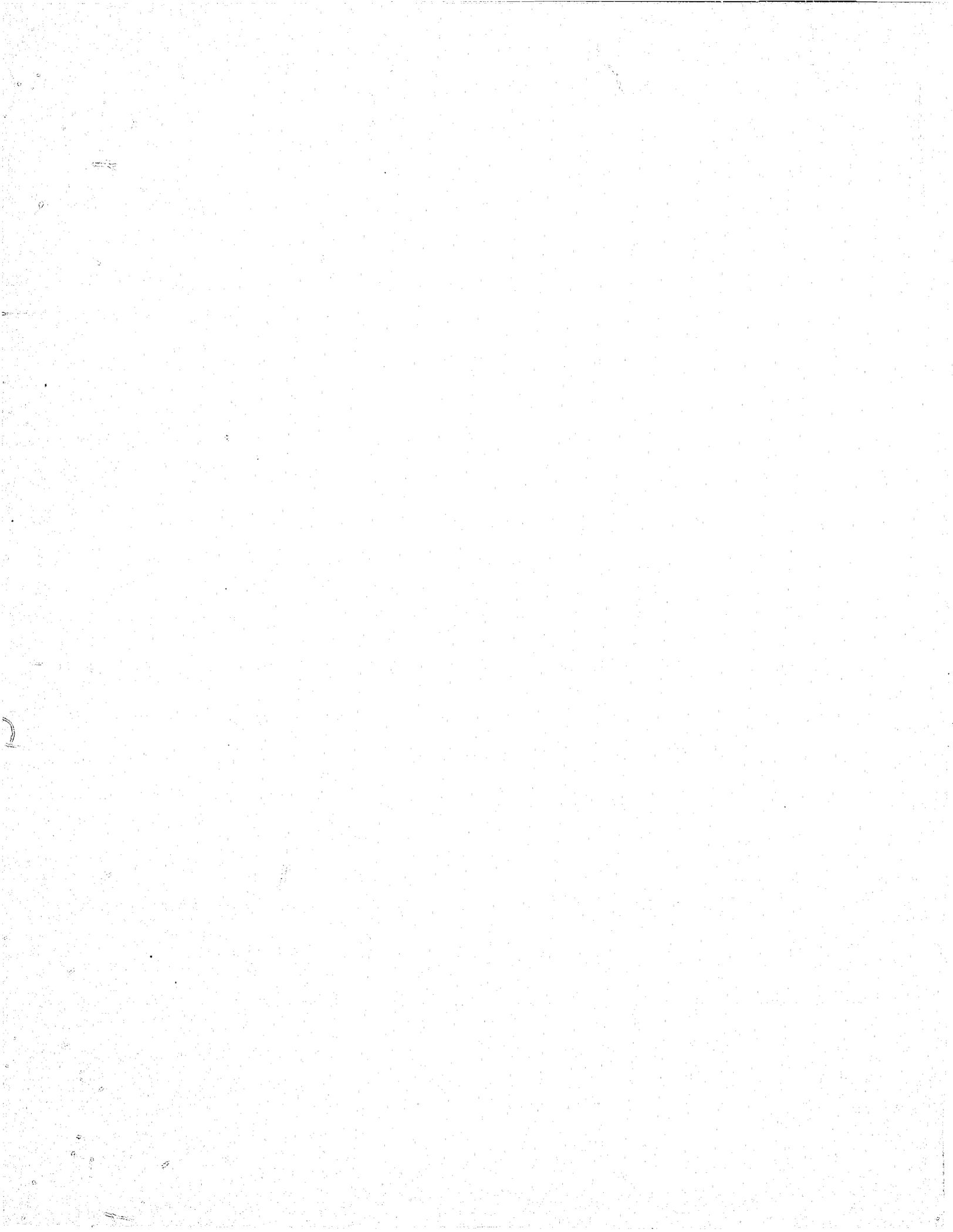
The vehicle-mounted terminal has resolved the conflict.

## "The Securities and Exchange Commission's Pilot Program"

With the revision of the Securities Exchange Act of 1934, a pilot program was developed by the Securities and Exchange Commission (SEC) for the reporting of and making inquiries concerning lost, stolen, missing, and counterfeit securities. Brokers, dealers, banks, transfer agents, and other financial institutions are now required by law to report securities falling in the preceding categories on form X-17F-1A.

Reports and inquiries concerning governmental securities must be directed to Federal Reserve banks. The Federal Reserve banks in the 12 Federal Districts forward all reports and inquiries to the computer data bank maintained by New York Federal Reserve Bank, New York City. However, reports and inquiries concerning private sector securities must be directed to the computer data bank maintained by the Securities Information Center, Inc., Wellesley, Mass.

This pilot program will terminate December 31, 1978. For additional information call the SEC at 202-755-7826.



**END**