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USE OF COORDINATES IN LOCATION IDENTIFICATION¹

Ruxton M. Ridgely

(Application of the rectangular plane coordinates as a means of designating location is another milestone in the advancement of police science. In the following article Captain Ridgely describes how systematic identification and designation of location has been established by the Maryland Police. It is an account of exceptional interest to enforcement officials.—Editor).

It has long been recognized that one of the great difficulties in responding to emergency calls, or in deploying a force of men to cover a given situation, or in guarding against the escape of a criminal, lies in the difficulty of identifying a given location. Often little-used landmarks must be employed for location reference. Or location names must be relied upon which may have little or no meaning to the person giving or receiving the message. A constant source of danger lies in the fact that the officer receiving the message may *think* he understands where the location is and may then rush to the wrong place. Using such sporadic and indecisive methods, enforcement can lag, often fail. Enforcement by the police succeeds only if the police are available where and when they are needed.

Experimentation with the military system of plane rectangular coordinates was first tried by the State of Maryland in connection with national defense activities. These experimentations have given us sufficient experience so that the way ahead can now be seen. We are now engaged in perfecting the system in order to assure maximum effectiveness.

Inherited from national defense is a large mosaic map of the entire state, scale one inch to one mile. All nine barracks are

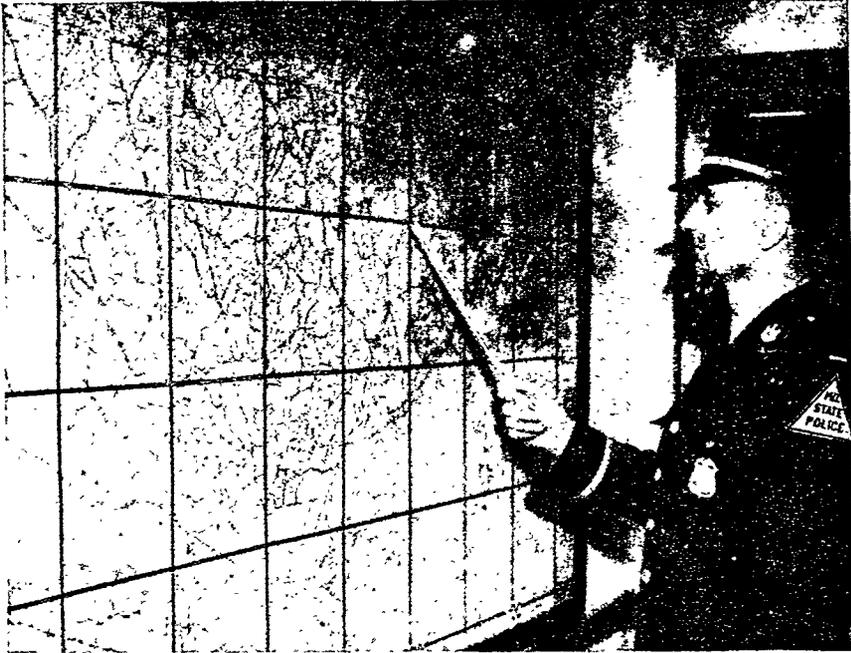
¹The article is based upon materials originally prepared for the International Association of Chiefs of Police *News Letter*.

equipped with such a map covering in each case the section of the state in which the barracks is located. All of these maps are laid out with a grid based upon the State System of Plane Coordinates authorized by act of the Maryland legislature in 1939. This conforms with a legally recognized system which is fundamentally sufficient for the most exacting use that will ever be demanded. There is no fear of future change being desirable in order to obtain greater precision in determining location. The accompanying maps suffice to show the system used. One is a map of the Maryland State Police Headquarters in Pikesville. Here are shown the numbered coordinates by which location of any spot in the state can be specifically identified. The other is a map in the Maryland State Police Barracks at Benson. A similar map showing numbered north-south and east-west coordinates or grids is in each of the state police barracks.

From this system of grids it is possible to proceed and build up a comprehensive card catalogue which will supply coordinates of between 8,000 and 9,000 geographic names. Present material was taken principally from the recent gazetteer published by the State Planning Commission. Locations, however, have been checked by actual examination of detailed maps.

Adoption of the system of co-ordinate identification by other public agencies has further assured the extensiveness and usability of the system. The Department of Forests and Parks adopted the same system for reporting forest fires. Now both foresters and police are provided with a common language by which they can communicate in the many cases where they work together. Similarly, the state police are working with the Army Intelligence, Naval Intelligence and Internal Security Forces, all of which have similar coordinated maps. Now it is possible to concentrate a force where it is wanted in the protection of vital war industries, war materials, fallen planes or other equipment.

A number of railroads have likewise adopted the coordinate system. The Baltimore and Ohio Railroad, Western Maryland Railroad, Baltimore and Annapolis Railroad, the Maryland and Pennsylvania Railroad, and the Pennsylvania Railroad have catalogued coordinates of all milestones, stations, bridges and tunnels along their lines. This precaution enables each individual railroad police department to transmit to the State Police the location of any serious derailment or crime. Thus, this embracive system places a two-way radio car right at the scene of every crime, accident, forest fire, disaster or derailment in the shortest possible time after the call has been received. Two-way communication is immediately established between the barracks and the first patrol car that arrives. As a result, the barracks knows the exact spot of



Map in the Maryland State Police barracks at Benson showing numbered north-south and east-west coordinates or grids in each of the state police barracks.



Map at Maryland State Police Headquarters in Pikesville, showing numbered coordinates by which location of any spot in the state can be specifically identified.



the incident and can keep headquarters informed of what is needed and can direct other necessary assisting agencies to the spot by the shortest possible route.

The movement to extend the scope and use of plane rectangular coordinates is progressing. One county has undertaken to popularize the use of coordinates even to the extent of including instruction in the high school curriculum. If successful, this system may become the common map language of the people. Coordinated maps are being made available, and as more people understand them it is entirely possible that those living in rural areas will soon learn that a seven digit number identifies their homes and enables anyone with a map to find them. Obviously, much time can be saved if, when making an emergency call, the distressed citizen has confidence that this number means more to the police, the fire department, or the ambulance driver than any amount of directions he can give over the telephone. Steps are being taken to issue numbers along certain important highways in the State. We have already issued over seven hundred numbers to homes having telephones, in remote sections of northern Baltimore and Harford County. Already their utility has been demonstrated in describing the location of aeroplane accidents, particularly when these happen in remote sectors. It is believed that as incidents occur in which this "common language" between citizens, police, and cooperating agencies is a factor in bringing aid more quickly to the scene, this movement will receive added impetus.

Now a word as to the use of maps by our police patrols. As may be anticipated, it is not practicable to locate a large scale map of the entire state in a patrol car. Size and difficulties of use would preclude it. For these reasons, convenient folding maps, scale of one inch to six miles, have been prepared. Every trooper is supplied with a copy. The advantage of using an authorized system of plane coordinates is obvious: any map may be laid off exactly so that the coordinates will agree absolutely with those on any other map. In consequence, while the small maps may be used in the field, the designation of a given spot is the same regardless of scale.

In the final analysis, when you combine the facilities made possible by a general card catalogue, two-way radio squad cars, and a portable map, you have the equivalent of a comprehensive gazetteer and the most detailed map. Why? Suppose a motorist should ask a trooper where some little village at the opposite end of the state is located. The trooper could radio for coordinates and in the course of a few minutes point to the exact spot on his field map—even though the village was of so little importance as not to be shown on the detailed quadrangle sheets of the United States Geological Survey!

In conclusion, let me point out that use of plane rectangular coordinates is simply a new and accurate way of overcoming a police problem which is as old as the hills. Just as scientific identification of persons through fingerprinting came to succeed the age-old methods of visual identification, so also, coordinates can well be the successor to our random methods of location identification. No longer is it expedient for the police to fumble with confused directions by reference to little understood landmarks and by the use of local names which may have no meaning to the person relaying or receiving the instruction. Compare these two situations, one a designation of location under the "old" system, the other according to the system of coordinates. Old system: The dispatcher calls, "Go to Five-Mile Road and to the bridge which is about six miles south of 'X'. Stop a 1940 Ford sedan, license number 0000 0000." The Coordinate system: The dispatcher calls, "Go to the bridge at 1269-425. Stop a 1940 Ford Sedan, license number 0000 0000." By such means as these does the science of policing continue its progress.