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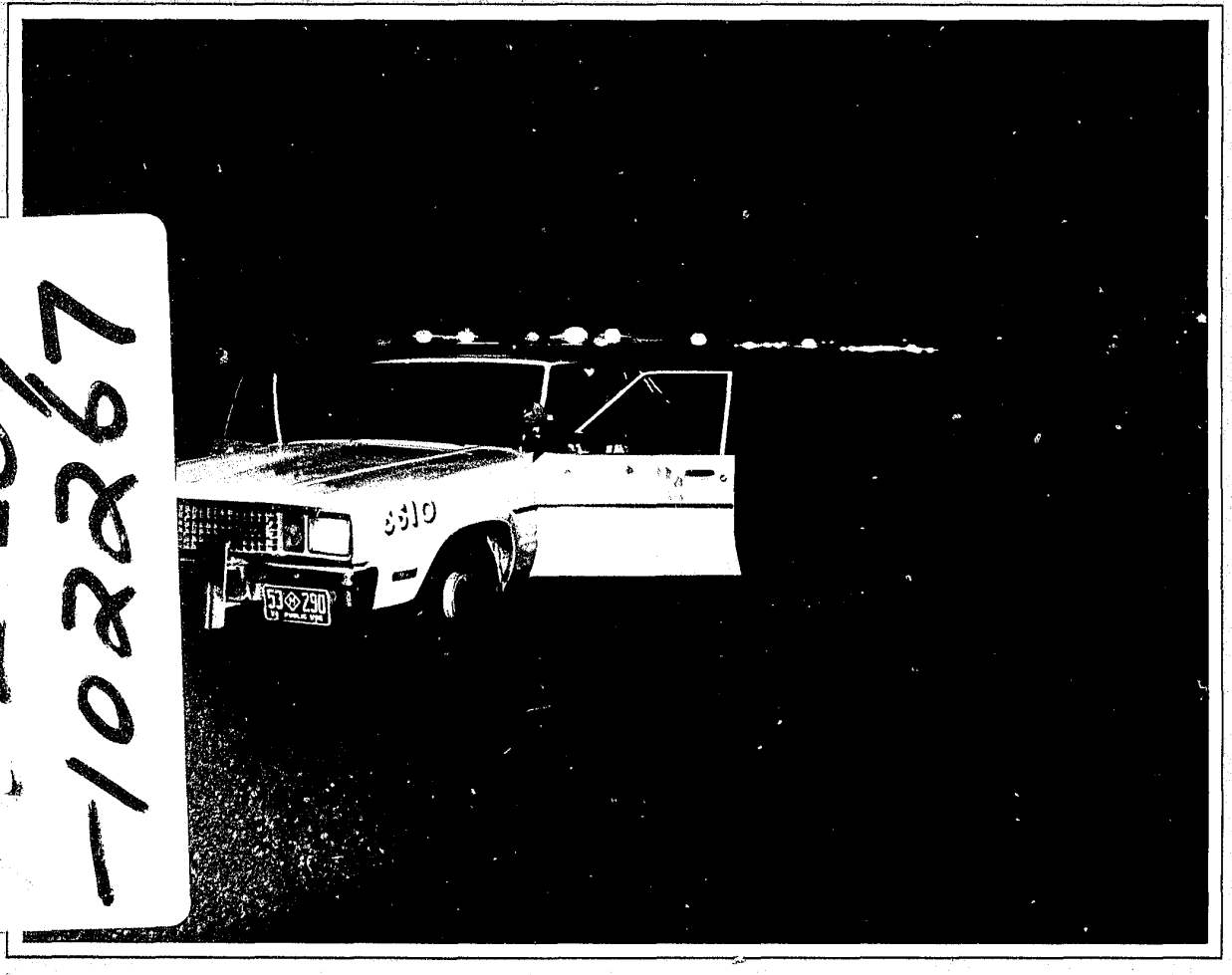

The Near Future
Implications for Law Enforcement

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Establishing Agency Personnel Levels

"... the level of personnel needed is based on calls for service, investigative caseload, and agency policy procedure."

By
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With ever-increasing frequency, police agencies across the Nation are being required by city government to establish personnel levels which are both "budget sensitive" and consistent with the demand for police service in their respective areas.

The proliferation of the automobile, coupled with other various economic and social changes, has produced an exodus of city residents to the suburbs and rural areas. Businesses, in an effort to capture the market for goods and services, have followed this trend. Merchants, doctors, lawyers, and in some instances, industry have opted to relocate outside city limits. This gradual but steady erosion of the city's tax base has created extreme pressure on city councils and local budget analysts to establish a cost-effective approach to providing city services.

During this social and economic metamorphosis, some other less obvious changes were also beginning to occur as cities attempted to counter this change. Urban renewal was born. In many areas, Federal funding was secured, and model city programs were adopted. Old buildings were demolished to make room for new, more modern structures. Many cities acquired football and baseball franchises, built stadiums and other arenas for hockey, basketball, soccer, etc. Some businesses, as a result of these efforts and tax credits designed to promote industrial growth, chose to expand locally rather than relocate. Consequently, in many cities, the ultimate effect of this transition was that while the volume of individuals residing within city limits appeared to decline over a period of several years, these cities became the "hub" of the larger metropolitan area which continued to attract increasing numbers of people daily.

Today, when the issue of city population is addressed, vis-a-vis the potential demand for police service, the concept of "average daily population" must also be considered. Locally, for example, census figures indicate that the standard metropolitan statistical area (SMSA) increased by nearly 150,000 inhabitants from the year 1960 to 1983.[1]

Cincinnati census data reflect a 23-percent decline in population density (500,000 versus 385,000) over the last 20 years. However, a more indepth analysis reveals that in many cases where population has declined, users of police service (individuals who might be identified as those who because of age, economic condition, or family status possess a greater potential for the use of police service than do the population at large) have increased. A recently prepared budget document for the Cincinnati City Council illustrates the following demographic changes. (See fig. 1.)

In addition, information supplied by the local welfare department indicates that the number of welfare recipients increased approximately 66 percent over the past 17-year period. Consequently, if increased poverty levels translate to an increase in the use

Lieutenant Colonel Ammann

Officer Hey

Figure 1

	1960	*1970*	*1980*
Percent of total city population—Persons over Age 60	16.5%	18.1%	19.1%
Female heads of households with children under 18 years of age	7,918	12,012	16,660
Percent of total families with children under 18 years of age	12.7%	22.4%	38.0%

of police resources, as past experience would appear to indicate, the demand for police service has continued upward.

In view of these circumstances, it is an unsound management practice to attempt to determine staffing levels within police agencies by merely establishing a police officer/citizen per-capita ratio. Conversely, however, it would appear of primary importance in attempting to supply a community with the proper amount of police manpower to first attempt to determine "demand" on that agency.

Obviously, police departments provide different types and levels of service depending on community size, location, tradition, socio-economic factors, etc. For instance, in one area, police may patrol miles of coastline and consequently be concerned with the importation of illegal drugs, illegal aliens, tourist victimization, etc. In another city, primary concerns may center around vehicular traffic problems, vice, and protection of government officials.

Ultimately, in determining demand, the services police are required to perform, both according to law and policy set forth by local government, must first be addressed. Once these issues have been understood, it is then possible to identify accurately the resources (personnel level) necessary to pursue the agency's mandate.

What follows, therefore, is a methodology which attempts to measure demand for police service based on several "work generating" variables, such as:

1) Citizen calls for police service,
2) Investigative case load practices, and
3) The service delivery policy and procedures established by local government and community expectation (tradition).

However, for the sake of brevity, this article focuses primarily on the development of uniform patrol strength.

The first variable, based upon calls for service, is used to describe the number of uniformed officers needed to answer citizen calls for police service. The second variable is based upon those criminal offenses which must be assigned for followup investigation and indicates the number of investigators needed to supply the appropriate investigative services. Finally, and probably the most difficult variable to measure, is the number of officers needed to deliver those services placed upon an agency by community tradition, its elected officials, and frequently identified through administrative concerns for current threats to public safety. Pertinent literature describes some of the factors affecting the diversity of numbers allo-

"... in attempting to supply a community with the proper amount of police manpower ... first attempt to determine 'demand' on that agency."

Lawrence Whalen
Chief of Police

cated to this third variable as crime rates, population density, the geographic size of a locality, and its topographic characteristics.

Staffing Levels

"There are no universal standards which can be employed to determine proper staffing levels."[2] When determining the optimum numbers assigned to street strength, many items must be considered, including which duties these units are expected to perform.

A patrol unit's activities could be defined as the 8-hour tour of duty a police officer works each day. However, in that the police "mission" exists 24 hours a day, 365 days per year, each patrol unit works 8 × 365 or 2,920 hours annually. Further, it requires 3 patrol units to staff one police beat, 24 hours per day, 365 days per year.

In most cities, the above-mentioned patrol unit has a myriad of responsibilities in addition to responding to citizen requests for service. "As a general rule, it has been stated that uncommitted patrol time should range between 25 and 35 percent of the total time of the patrol force. The remaining 65 to 75 percent then can be apportioned between responding to calls for service and performing administrative duties such as servicing the patrol unit, transporting prisoners, etc."[3]

A generally accepted practice across various agencies is to devote approximately 35 percent of patrol unit time to responding to calls for service, 35 percent to patrol administrative activity, and 30 percent to nondirected patrol activity, as described by the International Association of Chiefs of Police (IACP) in their treatise of this issue.[4]

Calls for Service

By employing a calls-for-service concept, plus any needed patrol units dispatched as "back-up" cars, and applying the proposed 35-percent standard, the calculation to determine patrol units needed is performed in the following manner.

During a given year, assume an agency received 219,000 calls for service to which they dispatched 276,000 uniformed patrol units (cars). Further analysis reveals that each call, including multiple dispatches, required an average of 42 minutes response and service time for each patrol unit dispatched. Using this information, the following calculation is performed to determine the number of patrol units needed to meet this service demand:

$$\frac{276{,}000 \times 42}{60 \text{ minutes}} = \text{hours of calls}$$

or 193,200 hours of calls for police service.

It is then necessary to determine the number of hours a patrol unit works annually. As mentioned earlier, this simply consists of multiplying 8 hours times 365 days (8 × 365 = 2,920 hours). Therefore, if a patrol did nothing other than respond to calls for service during an 8-hour tour of duty, it would take 66 patrol units to service the above workload.

$$\frac{276{,}000 \times 42 \div 60 \text{ min.}}{2{,}920 \text{ hours}} = 66 \text{ patrol units}$$

However, since generally accepted practice indicates a patrol unit should devote approximately 35 percent of its 8-hour tour responding to calls for service, this 66 patrol unit figure must be divided by .35, which equates to 189 patrol units needed to handle 276,000 calls if 35 percent of an 8-hour tour is spent addressing this workload.

At this point it might be appropriate to discuss briefly the issue of double cars (two officers per car). In some cities, because certain beats possess a greater potential for police officer injury due to the volume of violent crime in certain areas, police managers may opt to assign two officers in a patrol unit for safety reasons. When this patrol configuration becomes necessary, the time of day and beat assignment of double cars must be determined. One method of addressing this problem is for managers to evaluate each beat according to violent crime. In Cincinnati, this was done through analysis of robberies and aggravated assaults during an annual time frame. The most violent prone beats can then be identified and a decision made concerning double cars.

It should be noted that in calculating the number of patrol units needed when double cars are deployed, a .75 efficiency factor exists in performing this calculation. In other words, three

2-officer units can perform, in the same amount of time, the work it takes four 1-officer units to perform. As Boydstun, Sherry, and Moelter point out, "The average two-officer unit has almost one hour (54.7 minutes) more unit time per watch, or about two hours more officer time, available for officer-initiated activities than did the average one-officer unit."[5]

Assume an agency after researching this issue decides to double 30 beats during the second and third shifts. Thirty beats run double during second and third shifts = 60 double beats (30 × 2 = 60).

Earlier, it was determined that 189 patrol units were necessary to handle 276,000 calls for service, with each patrol unit spending 35 percent of its 8-hour tour of duty resolving these calls. However, now a decision is made to double 60 of these patrol units by placing an additional officer in the car on two shifts. As a result of this new staffing configuration and in view of the 75-percent efficiency factor mentioned above, it is now necessary to recalculate the number of patrol units required to meet the previously mentioned (276,000 calls) service demand. (See fig. 2.) Therefore, the agency must field 169 patrol units, of which 60 should be two-officer units or approximately 36 percent two-officer patrol units.

This plan would provide an agency the ability to cover the most hazardous beats in the city with two-officer patrol units during those hours which possess the greatest potential for both citizen and police injury. The attendant effect of the two-officer patrol unit is also factored into this formula.

The next issue to be confronted is that of personnel. This would appear to be the "bottom line" when addressing the size of the police agency. Consequently, what must now be determined is manpower strength to staff the aforementioned patrol configuration (169 patrol units of which 60 are two-officer cars.)

Research indicates that locally, it takes an average 1.78 police officers to staff a one-officer patrol unit (car) 8 hours per day, 365 days per year. Therefore, 169 one-officer units times 1.78 = 301 police officers. Additionally, since it has been decided to double 60 patrol units, the total number of officers required using this patrol configuration is determined in the following manner:

169	× 1.78 =	301
60	× 1.78 =	107
	Total	408

Consequently, 408 personnel are necessary to staff 169 patrol units of which 60 are doubled between the hours of 3:00 p.m. and 7:00 a.m. each day. The necessary support and supervisory personnel essential to the efficient use of the agency's patrol force are not included in this calculation.

Figure 2

189 Total one-officer patrol units are needed to service 276,000 calls and multiple-car dispatches based on a 35-percent standard

60 Two-officer patrol units with a 75-percent efficiency factor

60 Two-officer patrol units 80 one-officer patrol units

189

20

169 Total patrol units needed of which 60 are two-officer patrol units

It should be noted, however, that while 35 percent of a patrol unit's time is consumed responding to calls for service, in most agencies the remaining 65 percent is apportioned to address the administrative calls workload (35 percent) and nondirected patrol activity (30 percent.)

Administrative Calls—Directed Patrol

Administrative calls are those which are not necessarily generated by citizens. These calls to which patrol units respond are the means by which police supervision directs its officers to perform some administrative duty. Administrative calls for service are determined by calculating the difference between total calls and citizen-generated calls for service. For example:

Total Calls for Service	333,000
Citizen Generated Calls	219,000
Administrative Calls	114,000

Also categorized within this 35-percent time block of the patrol unit's 8-hour days are the following responsibilities:

—*Roll call* for attendance, inspection, assignment, training, etc.;

—*Followup investigations* which generally involve minor criminal offenses, i.e., petit theft and part II offenses; and

—*Miscellaneous directed patrol activity* to conduct various investigations and surveillance of conditions and behavior which may or may not be criminal. Although complete records and exact hours spent on this activity are not precisely recorded, they do frequently occur. Examples of this responsibility are followup investigation in instances where no other officers are required (sus-

"... what would appear ... as declining city populations and a resultant decreased workload for police has in fact become an increase in measurable demand for police service."

pected gambling activity, parking complaints, etc.), surveillance of high hazard traffic and accident locations, conditions on beat (light outages, dangerous road conditions, improperly functioning traffic signals), and general inspections of police vehicle during each 8-hour tour of duty (gas, oil, etc.).

Nondirected Patrol Activity

Nondirected patrol activity has been defined as random patrol but is much more than this. Good patrol management demands adequate time to permit such activities on the part of its patrol forces. Such activity accounts for approximately 30 percent of a patrol unit's 8-hour day and includes the following:

—*Self-initiated investigations* are the essence of an aggressive patrol unit, although difficult to measure. It is through the actions of a well-trained, well-informed patrol force that many crimes are discovered, arrests made, or criminal activities discouraged. Some examples are field queries, business and residence security checks, and nondirected traffic enforcement. Many DUI and nonaccident hazardous moving violations also fall into this category.

—*Citizen contacts,* outside the realm of service, are spontaneous and often evolve from other activities. Directions to lost citizens, assisting a disabled motorist, crime prevention, and legal or procedural issues are common topics of such contacts.

—*Order maintenance* includes the various duties requiring police presence concerning the inspection and surveillance of licensed premises. Patrolling in and around specific locations (schools and senior housing facilities), areas involving labor disputes, and crowd control of special events are other examples of order maintenance.

Conclusion

The traditional approach to resolving questions concerning police agency staffing levels based on community population, or the citizen/police officer per capita basis, would appear grossly inappropriate in view of today's modern and mobile society. The tremendous tide of people who rush to the heart of American cities each business day and then home again have created new challenges which, in many cases, demand new solutions by police managers.

As cities' daily populations swell to the opening of the business day, major sporting events, conventions, etc., police administrators find themselves in a struggle to provide manpower essential to the security of citizens. Therefore, what would appear to many budget analysts and other city officials as declining city populations and a resultant decreased workload for police has in fact become an increase in the measurable demand for police service. Frequently, a city's SMSA can provide a much enhanced perception regarding the fluctuation of a city's average daily population. In addition, as cities change demographically, there appears to be data which supports the notion that the primary users of police service remain static or even increase. Consequently, the potential for police intervention can become even greater.

It is our contention that a number of factors must be considered when determining the personnel requirement of a police agency. The purpose of this effort, therefore, is to discuss the more-important variables which effect demand for police service and which, consequently, should be measured when establishing personnel levels for any police agency.

The data collection process and methodology for actually calculating the level of personnel needed is based on calls for service, investigative caseload, and agency policy procedure. Only after these variables are identified and the agency's assignment availability determined can the actual number of police officers required to staff the organization be identified.

Footnotes

[1]SMSA is a multicounty area contiguous to the county which contains the corporate limits of a city. In this case, seven counties are contiguous to Hamilton County, which includes the City of Cincinnati.

[2]*Local Government Police Management,* 2d ed. (Washington, DC: City Management Association, 1982), p. 128.

[3]Ibid.

[4]Ibid.

[5]John E. Boyd, and others, *"Patrol Staffing in San Diego"* (Washington, DC: Police Foundation, 1977), p. 53.