## HBSIR 73-214 <br> LEAA Police Equipment Survey of 1972 Volume V: Handguns and Handgun Ammunition

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Washington, D. C. 20234

Final, July 1971 - August 1973

Prepared for
National Institute of Law Enforcement and Criminal Justice (NILECJ) Law Enforcement Assistance Administration (LEAA)
Department of Justice
Washington, D. C. 20530

The present report is one in a series of reports produced from data gathered by the LEAA Police Equipment Survey of 1972. Listed below are the seven reports of that survey.

National Bureau of Standards Report 73-214. (The present report). LEAA POLICE EQUIPMENT SURVEY OF 1972, VOLUME V: Handguns and Handgun Ammunition.

National Bureau of standards Report 73-210. LEAA POLICE EQUIPMENT SURJEY OF 1972, Volume I: The Need for Standards -- Priorities for Police Equipment.

National Bureau of standards Report 73-211. LEAA POLICE EQUIPMENT SURVEY OF 1972, Volume II: Communications Equipment and Supplies.

National Bureau of Standards Report 73-212. LEAA POLICE EQUIPMENT SURVEY OF 1972, Volume III: Sirens and Emergency Warning Lights.

National Bureau of Standards Report 73-213. LEAA POLICE EQUIPMENT SURVEY OF 1972, Volume IV: Alarm Displays, Security Equipment, and Surveillance Equipment.

National Bureau of Standards Report 73-215. LEAA POLICE EQUIPMENT SURVEY OF 1972, Volume VI: Body Armor and Confiscated Weapons.

National Bureau of Standards Report 73-216. LEAA POLICE EQUIPMENT SURVEY OF 1972, Volume VII: Patrolcars.

# LEAA POLICE EQUIPMENT SURVEY OF 1972 VOLUME V: HANDGUNS AND HANDGUN AMMUNITION 

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U. S. DEPARTMENT OF COMMERCE, Frederick B. Dent, Secretary

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I. SUMMARY OF BACKGROUND AND METHODOLOGY
A. Background (pp. 1-2)

- Law Enforcement Standards Laboratory (LESL) was established in 1970 and became part of the NILECJ Equipment Systems Improvement Program (ESIP).
- NILECJ asked the Behavioral Sciences Group of the National Bureau of Standards to develop and carry out a procedure to get information from the users of law enforcement equipment.
- "User" information would aid NILECJ in setting priorities for LESL programs and would provide some detailed information so that research to develop standards could begin.
- In addition, gathering information from the users would help to make police agencies aware of LESL and ESIP.
- A nationwide mail sample survey was selected as the best procedure to collect user information.
- An Equipment Priorities Questionnaire (EPQ) and six Detailed Questionnaires (DQs) were developed and administered. A separate report was prepared for each of these seven questionnaires.
B. Design of Questionnaires (pp. 8-9)
- Questionnaires were developed in conjunction with NILECJ, LESL, and cooperating police departments. Questionnaires were pretested at various times with approximately 45 police departments.
- The EPQ was designed to provide information about priority needs for standards for various types of equipment.
- In addition, the $E P Q$ asked for data about numbers of fulland part-time officers, activities performed in the department, budget, size of jurisdiction, etc.
- The six DQs (Alarms, Security and Surveillance Equipment; Communications Equipment and Supplies; Handguns and Handgun Ammunition; Lights and Sirens; Body Armor and Confiscated Weapons; and Patrolcars) were each developed separately.
- The DQs asked about kinds and quantities of equipment in use, problems with existing equipment, suggestions for improving equipment, needs for standards related to the equipment, etc. Although entitled Detailed Questionnaires, these questionnaires were designed to give an overview of the use of specific items of equipment.
C. Sample (pp. 2-6)
- The population sampled was made up of all police departments listed in a computerized file compiled and maintained by the LEAA Statistical Service.
- Courts, correctional institutions, forensic labs, special police agencies, etc., were excluded.
- The sample was stratified by LEAA Geographic Region (10 Regions) and by Department Type (7 Department Types: State Police; County Police and Sheriffs; City Departments with 1-9 Officers; City Departments with 10-49 officers; City Departments with 50 or more officers, excluding the Fifty Largest Cities; the Fifty Largest U.S. Cities by population; and Township Departments).
- Overall, approximately $10 \%$ of the 12,836 departments in the population were selected as respondents (see Table l.2-2).
- The Equipment Priorities Questionnaire was sent to every sample department (1386). Each Detailed Questionnaire was sent to all States, to all of the Fifty Largest Cities, and to a randomly selected subsample of the main sample (about 530 departments received each DQ).
- Thus, States and the Fifty Lqrgest Cities were asked to fill in ali seven questionaires. Each of the remaining 1286 departments were asked to fill in the EPQ and two of the DQs.
- The sample for the Handguns and Handgun Ammunition DQ consisted of 528 departments (see Table 1.2-3).
D. Questionnaire Administration (pp. 7-8)
- Stringent control of administration was required.
- Introductory letters were sent to heads of departments asking cooperation.
- On June 1, 1972, questionnaire packages were mailed.
- In July 1972, follow-up by self-return postcard was begun.
- In August 1972, follow-up by telephone was begun. Departments which had not returned questionnaires were called. Also, calls were made to clear up ambiguities in the returned questionnaires. About 1300 calls were made. About $70 \%$ of the sample departments were called at least once.
- Each questionnaire was edited and coded by a specialized team to ensure consistency; the data were then keypunched and tabulated.
- Completed questionnaires were accipted for tabulation through January 7, 1973.
E. Rates of Return (pp. 8-9)
- 83\% of the 1386 sample departments returned usable EPQs.
- $84 \%$ of the 528 sample departments returned usable Handguns DQs.
- 81 - $85 \%$ of the other DQ subsamples returned usable questionnaires.
- Highest rates of return (over 90\%) were from States, the Fifty Largest Cities, and Cities with 50 or more officers.
- Lowest rates of return (less than 75\%) were from Counties and Townships.
F. Characteristics of Responding Departments* (pp. 10-14)
- The activities most commonly carried out by the respondents (to the EPQ) were Serving Traffic and Criminal Warrants (88\%), Traffic Safety and Traffic Control (87\%), and Intra-departmental Communications (87\%).
- All of the responding Fifty Largest Cities said they provided In-House Training and Criminal Investigations. This compared to $68 \%$ and $86 \%$, respectively, of all responding departments.
- Only 13\% of all respondents had Crime Laboratories. 73\% of the Fifty Largest Cities and 55\% of the States had Crime Laboratories.
- About three-fifths of the departments in all Department Types were providing Emergency Aid and Rescue, ranging from $60 \%$ of the Cities with 50 or More Officers to $67 \%$ of the Counties.
*Data reported in this section were based on the answering of 1386 departments which filled in the Equipment Priorities Questionnaire. These departments include, but are not limited to the respondents to the Handguns DQ. For complete information see LEAA Police Equipment Survey of 1972, Volume I.
- Overall, the reported Equipment Budgets represented somewhat over $10 \%$ of the Total Budgets reported.
- Among Department Types there was a wide range of total equipment expenditures, from a mean of about $\$ 10,000$ for Cities with l-9 Officers to a mean of almost $\$ 2.6$ million for the Fifty Largest Cities.
- One of the Fifty Largest Cities reported an Equipment Budget of $\$ 40$ million.
- Overall, the Fifty Largest Cities reported a mean of 2491 Full-Time Sworn Officers. However, one of the Fifty Largest Cities had 27\% of all the Full-Time Officers reported by that Department Type and another had about $12 \%$.
G. Presentation of Data (pp, 14-17)
- Data in this report are presented in two forms: Text tables and full tables (Appendix B.) Text Tables do not always present a complete break out of the data.
- All tables (text and full) present the data in unweighted form, (i.e., numbers and percentages of the responding departments from the sample for this questionnaire, not figures that have been weighted to expand the data to the total population 'of police departments in the U. S.)
- The sample selected for this questionnaire was not proportional to the total population of police departments. If decisions are to be made which require estimates of population figures, the appropriate extrapolation must be performed. (See Appendix B.)
II. Summary of Results
A. On Duty Use of Handguns (pp. 19-23)
- 94\% of the responding departments reported at least one officer using a . 38 caliber handgun on duty.
- $80 \%$ of the officers in those departments were using .38 s.
- States (59\%), Townships (56\%), and Counties (55\%) reported the lowest percentages of officers using . 38s on duty, while the Fifty Largest Cities (88\%) and Cities 50+ (81\%) reported the highest percentages.
- Responding States (36\%), Townships (36\%), and Counties ( $40 \%$ ) had the highest percentages of officers using . 357 caliber handguns on duty, while the Fifty Largest Cities (9\%) and Cities $50+$ ( $16 \%$ ) had the lowest percentages.
- The . 45 Caliber and the 9 mm were each being used by only $1 \%$ of the officers in the responding departments.
- The 445 responding departments reported 179,891 officers carrying handguns.
- Estimates of the total population of on-duty handguns in the U.S. showed $70 \%$ of all officers using . 38 s and $25 \%$ using . 357s.
B. Most Used and Second Most Used on Duty Handguns (pp.24-30)
- Departments were asked a series of questions about the handgun they had more of in their department than any other (Most Used Handgun), and the same questions about the handgun caliber they had next most of in their department (Second Most Used Handgun).
- $42 \%$ of the responding departments reported using only one caliber of handgun.
- The answers about "Most Used Handgun" represented about $91 \%$ of all the handguns reported.
- $99 \%$ of the handguns that were Most Used or Second Most Used were either . 38 s or .357 s , ( $82 \%$ and $17 \%$ respectively.)
- When the . 38 caliber was listed as Most Used Handgun, the .357 was the most likely caliber to be listed as Second Most Used Handgun, and vice versa.
- Only 8 of the 445 responding departments said that some caliber other than . 38 or .357 was used by more of their officers on duty than any other.
- Almost all (99\%) of the reported on duty handguns were revolvers.
- $97 \%$ of the responding departments were using only handguns produced by one or both of two manufacturers.
- Of all reported Most Used and Second Most Used Handguns, 80\% had barrels 3-5 inches long.
- States reported a higher percentage of handguns with barrels longer than 5 inches ( $29 \%$ ) than did any other Department Type.
C. Ammunition Used with Most Used and Second Most Used Handguns (pp. 31-33)
- About half of the responding departments were using Lead bullets in their Most Used Handguns, $24 \%$ used Hollowpoint and 15\% used Jacketed.
- About two-thirds of the departments were using only one bullet type for their Most Used Handguns, and about half of these were using lead bullets exclusively. 13\% were using Hollowpoint exclusively.
- $73 \%$ of the responding departments were using ammunition with bullet weights of 15l-l60 grains, and few departments were using ammunition with bullet weights higher than this.
- $59 \%$ of the responding departments were using only one brand of ammunition with their Most Used Handguns.
- Almost $3 / 4$ of the departments that were using only one brand of ammunition were using ammunition made by one of two manufacturers ( $50 \%$ and $22 \%$, respectively).
D. Off Duty Use of Handguns (pp. 35-37)
- Only 78\% of the responding departments answered the question concerning off duty use of handguns. This is not a good measure of the proportion of departments that use handguns off duty.
- $51 \%$ of State departments did not answer the question on off duty use of handguns. $75 \%$ or more of all other Department Types did give data about off duty handgun use.
- Of the 110,534 officers reported to be carrying off duty handguns, $86 \%$ were carrying, 38 , $6 \%$ were carrying .357 s , and $4 \%$ were carrying 9 mm . This compares to $80 \%, 17 \%$, and $1 \%$ respectively, of the 179,891 officers reported carrying on duty handguns.
- Of the 345 departments that reported off duty handgun use, $96 \%$ reported at least one officer using a . 38 off duty; $29 \%$ reported . 357 use; $30 \%$ reported 9 mm use; $21 \%$ reported. 45 use; $22 \%$ reported .32 use; and $23 \%$ reported . 25 Automatic use. (Only two calibers of handguns were represented in more than twenty percent of the departments for on duty use.)
E. Problems With Handguns (pp. 27-40)
- More than half of the responding departments had either had no problems with their handguns in the last five years (37\%) or left this question blank (18\%).
- $72 \%$ of States and $72 \%$ of the Fifty Largest Cities cited at least one handgun problem compared to $46 \%$ of all responding departments.
- The two most frequently mentioned problems were those associated with the Cylinder, and those associated with the Hammer or Firing Pin.
F. Problems With Handgun Ammunition (pp. 40-42)
- Only about one-fourth of the responding departments described a problem with handgun ammunition.
- A much higher percentage of the Fifty Largest Cities (61\%) listed a problem than any other Department Type.
- None of the 27 Township departments and only seven departments in Cities with l-9 officers listed an ammunition problem.
- Problems cited by one-fourth or more of the departments citing difficulties were Power/Penetration Too Low (30\%), Knockdown Power Insufficient (27\%), and Primer (25\%).


### 1.0 INTRODUCTION

### 1.1 Project Background

During the past several years, law enforcement agencies in the United States have become more aware of the importance of equipment in the performance of their duties. Much of their equipment had originally been designed for other uses and had to be modified. Other equipment items had to be used as given. No standards existed against which equipment performance could be measured nor were any standard test methods or procedures available. It has been difficult for agencies to compare the performance of equipment items. Recognizing this problem, in 1970, the Law Enforcement Assistance Administration (LEAA) of the Department of Justice began a concentrated program toward the improvement of law enforcement equipment.

As the first step in its Equipment Systems Improvement Program (ESIP), LEAA, in cooperation with the Department of Commerce established a Law Enforcement Standards Laboratory (LESL) at the National Bureau of Standards (NBS). The broad goal of LESL is to establish voluntary performance standards which can be used as guidelines for the selection of equipment by law enforcement agencies. Additionally, LESL is developing standard test methods and procedures, so that the relative performance of similar items may be evaluated by departments themselves.

In order to provide equipment user information for the ESIP program, in 1971 the National Institute of Law Enforcement and Criminal Justice (NILECJ) of LEAA asked the Behavioral Sciences Group of the Technical Analysis Division at NBS to gather information from the users of law enforcement
equipment about their specialized equipment needs and problems. Although face-to-face interviews with a large sample of representatives from law enforcement agencies would have been desirable, time and manpower constraints led to the development of a nationwide, mail sample survey having two general objectives: (1) To assist NILECJ in the establishment of priorities for LESL's standards development activities; and (2) to obtain detailed information about certain broad equipment categories so that research to develop standards in these areas could begin.

This report fulfills part of the second general objective and the associated survey questionnaire (see Appendix A) will be referred to as the Handguns and Handgun Ammunition Detailed Questionnaire (DQ). The remainder of the second objective is accomplished in the reports of the other five DQs: Alarms,Security and Surveillance Systems; Communications Equipment and Supplies; Sirens and Emergency Warning Lights; Body Armor and Confiscated Weapons; and Patrolcars. The first objective (above) is accomplished in the report on the Equipment Priorities Questionnaire (EPQ).* A complete listing of these seven reports may be found on the inside front cover of this report.

### 1.2 Sample Design

Although the objective of ESIP is to serve all types of law enforcement agencies, this particular study was purposefully limited to police departments as the largest single group of law enforcement agencies with

[^0]identifiable equipment needs. No attempt was made to survey correctional institutions, courts, forensic laboratories, or special police agencies such as park police, harbor patrols or university police. The computerized directory of approximately 14,000 police agencies, compiled and maintained by LEAA's Statistics Division, provided the population from which the sample was drawn. Care was taken to exclude the double listings that existed for some agencies. (Details of the selection process are given in Appendix B of the Equipment Priorities Questionnaire.)

The final list of 12,842 departments was cross-stratified by LEAA geographic region and department type by the mutual agreement of NBS and NILECJ. The assignment of states to regions and the seven department types chosen for study are shown in Table l.2-1.

Table 1.2-1. Stratification Categories

DEPARTMENT TYPES:

State Police
County Police \& Sheriffs
City with 1-9 Officers
City with 10-49 Officers
City with 50 or more Officers*
The 50 Largest U.S. Cities**
Township Departments

LEAA GEOGRAPHIC REGIONS:

```
l = Conn., Maine, Mass., N.H., R.I.,
    Vt.
2 = N.J., N.Y.
3 = Del., Md., Penn., Va., W.Va., D.C.
4 = Ala., Fla., Ga., Ky., Miss., N.C.,
        S.C., Tenn.
5 = Ill., Ind., Mich., Ohio, Wis., Minn.
6 = Ark., La., N.M., Okla., Tex.
7 = Iowa, Kan., Mo., Neb.
8 = Colo., Mont., N.D., S.D., Utah, Wyo.
9 = Ariz., Calif., Nev., Hawaii
10 = Alas., Idaho, Ore., Wash.
```

[^1]The breakdown of the population of police departments by cross-strata is exhibited in Table 1.2-2. As can be seen from the table, there were no Townships in Regions 4, 6, 7, 8, 9 and 10. Almost 63\% of the departments
Table 1.2-2 Number of Police Departments by Region and Type
LEAA REGION

| DEPARTMENT TYPE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | TOTAL |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| State | 6 | 2 | 5 | 8 | 6 | 5 | 4 | 6 | 4 | 4 | 50* |
| County | 66 | 84 | 257 | 764 | 536 | 506 | 413 | 288 | 103 | 120 | 3137 |
| City (1-9 Officers) | 27 | 348 | 713 | 979 | 1470 | 703 | 611 | 283 | 135 | 217 | 5486 |
| City (10-49 Officers) | 40 | 237 | 166 | 344 | 508 | 230 | 142 | 71 | 168 | 79 | 1985 |
| City (50 or More Officers | 60 | 64 | 36 | 83 | 119 | 46 | 23 | 19 | 87 | 17 | 554 |
| 50 Largest Cities | 1 | 4 | 5 | 8 | 10 | 8 | 3 | 1 | 8 | 2 | 50 |
| Township | 629 | 349 | 362 | - | 234 | - | - | - | - | - | 1574 |
| TOTAL | 829 | 1088 | 1544 | 2186 | 2883 | 1498 | 1196 | 668 | 505 | 439 | 12,836 |

were City police, $43 \%$ having 1-9 full-time officers. County departments comprised about 24\% of the population. By Region, the smallest (Region 10) contained only $3.4 \%$ of the police departments, while Region 5, the largest, had 22.5\%. The variation in the number of departments in a cell (Region/ Department Type combination) was even greater than that across the strata, i.e., the number of departments in each cell ranged from 0 to 1470.

The considerations discussed in the previous paragraph led to the sampling plan discussed briefly below. All of the State departments and the Fifty Largest City departments were included in the sample and were asked to complete all six DQs, i.e., they were sent the entire package of seven questionnaires. For the remaining cells the variation in cell size presented a problem: If the same fraction of the entire population was to be selected from the members of each cell, a constant sampling fraction large enough to make the total sample manageable would yield too few sample units in small cells. To solve this problem, a fixed sample of 30 police departments/cell was chosen, wherever possible, resulting in a different sampling fraction for each cell. A fixed sample size of 30 departments/cell was chosen to facilitate the equitable distribution of the six DQs. This plan resulted in sending the Handguns $D Q$ to 528 departments.

The departments were selected randomly within each cell, from the total cell population, each department (other than the States and Fifty Largest Cities) receiving two DQs. Thus, in cells having 30 sample units, the Handguns DQ was mailed to 10 departments; cells having fewer sample units were allocated proportionally fewer Handguns DQs. Table 1.2-3 presents the total sample for the Handguns DQ by Region and Department Type.
Table 1.2-3. Number of Sample Departments Selected to Receive the Detailed Questionnaire: Handguns, by Region and Department Type.
DEPARTMENT TYPE:

| State* | $\frac{1}{6}$ | $\frac{2}{2}$ | $\frac{3}{5}$ | $\frac{4}{8}$ | $\frac{5}{6}$ | $\frac{6}{5}$ | $\frac{7}{4}$ | $\frac{8}{6}$ | $\frac{9}{4}$ | $\frac{10}{4}$ | $\frac{\text { Total }}{50}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| County | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 100 |
| City 1-9 Officers | 9 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 99 |
| City 10-49 Officers | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 100 |
| City 50+ Officers | 10 | 10 | 10 | 10 | 10 | 10 | 8 | 6 | 10 | 5 | 89 |
| 50 Largest Cities | 1 | 4 | 5 | 8 | 10 | 8 | 3 | 1 | 8 | 2 | 50 |
| Townships** | 10 | 10 | 10 | -- | 10 | -- | -- | -- | -- | -- | 40 |
| Total | 56 | 56 | 60 | 56 | 66 | 53 | 45 | 43 | 52 | 41 | 528 |

Once the sample was selected, each sample unit was assigned a unique seven-digit identification number coding region, type, and questionnäire assignment.

### 1.3 Questionnaire Administration

From the beginning of the project, it was evident that stringent control would be required in administering the questionnaires to ensure a high rate of response. Computer-stored daily status records were input via a teletypewriter for each sample department, In general, the following procedure was used:
(a) Each department in the sample was mailed a letter, signed by the director of NILECJ, addressed to the head of the department. This letter introduced the survey and requested cooperation.
(b) About one week later, the questionnaire packages were mailed.
(c) Departments not returning the questionnaires within a month were identified by the computer and were sent a self-return postcard requesting information as to the status of the questionnaires. Departments not receiving the questionnaire package were sent another; those not returning the postcard were placed on a list for telephone follow-up.
(d) About a month and a half later, departments with which no contact had been made were called by telephone.
(e) Returned questionnaires were reviewed for completeness and either coded for keypunching or filed for telephone call-back to supply missing data or to resolve ambiguities.

Considerable effort was expended to ensure a high rate of response, and this effort was rewarded with an $84 \%$ response for the Handguns DQ, and between $80 \%$ and $85 \%$ for each of the other questionnaires. In the course of the survey more than $70 \%$ of the sample departments were contacted at least once by telephone. More than 1300 phone calls were made by the survey team.

The distribution of respondents (departments which returned usabie Handguns DQs) is exhibited in Table l.3-1. The highest percentages of response were from the States and larger Cities (89-94\%), while Cousies and Townships had the poorest response rates (uncer 75\%). Tiese data wovis seem to be partly explained by the fact that the larger departmeres use
 interest in developing standards.

### 1.4 Development and Design of the Handguns DQ

The survey plan and questionnaire design (of all seven questionnairas) evolved over a l2-month period. During this time, the survey team consu:.te己 at length with NILECJ equipment experts, LESL program managers, and equipment manufacturers. In addition, the officers and administrators of aboit 45 police departments served as consultants and/or as respondents for pretests of various versions of the questionnaires.

The Handguns $D Q$, in its final form, is reproduced in Appendix A. This DQ asked respondents to identify the kinds of handguns being used by officers in the department both on duty and off duty; to fully describe the handgun used by more of their officers than any other and the handgun used by the next greatest number of officers; to provide data on the types of ammunition
Table 1.3-1. Number of Sample Departments Returning Acceptable Detailed Questionnaire: Handguns and Handgun Ammunition.
DEPARTMENT TYPE:


* Questionnaires were actually sent to 56 State departments since there were six State departments which listed two police agencies without reference to a common central agency. However, only one set of questionnaires was accepted from each of these six agencies.
** Township departments exist only in Regions 1, 2, 3 and 5.
being used and to discuss problems with handguns and ammunition. The questionnaire was limited to general topics because: (1) It was not possible, considering the scope of the present survey, to explore in a detailed manner specific information about all types of weapons being used in the department; and (2) it was felt that the general data gathered in the present effort would provide important direction for research in the development of standards, the main objective of the survey.

1. 5 Characteristics of Subsample Groups

The $E P Q$ of the LEAA Police Equipment Survey* requested data from each departuent about population served, physical size of jurisdiction served, type of jurisdiction, number of full- and part-time ozEicers, approximate total, equipment, and personnel budgets during 1971, and activities handled by the department.

Table l.5-l presents a partial tabulation, by department type, of the responses to a check list of 30 typical police activities by the respondents to the EPQ. (The EPQ respondents include but are not limited to, the responderts to the Handguns and Handgun Ammuition DQ. See Section 1.2.) The activities most frequentiy checked by all deparcuents were: (l) Serve Traffic and Criminal Warrants (88\%)。 (2) Trafeic Sa:zety and Traffic Control (87\%), and (3) Communications for Own Department ( $87 \%$ ). The activity with the most consistent level across all Department Types was that of Emergency Aid and Rescue, ranging from 60\% (Cities with $50+$ OEficers) to 67\% (Counties).

[^2]| DESCRIPTION OF ACTIVITY: | $\begin{gathered} \text { State } \\ \% \end{gathered}$ | $\begin{gathered} \text { County } \\ \% \end{gathered}$ | $\begin{array}{r} \text { City } \\ \text { I-9 } \end{array}$ \% | $\begin{aligned} & \text { City } \\ & 10-49 \end{aligned}$ | City $50+$ \% | $\begin{gathered} 50 \\ \text { Largest } \\ \frac{\%}{\%} \end{gathered}$ | Township | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Serve Traffic and Criminal Warrants | 70 | 89 | 84 | 89 | 94 | 87 | 93 | 88 |
| Traffic Safety and Traffic control | 92 | 56 | 94 | 96 | 96 | 98 | 94 | 87 |
| Communications for Own Department | 94 | 86 | 76 | 95 | 94 | 96 | 70 | 87 |
| Criminal Investigation | 66 | 86 | 71 | 95 | 97 | 100 | 79 | 86 |
| Police Tratning for own Department | 98 | 55 | 48 | 77 | 87 | 100 | 42 | 68 |
| Custody/Detention-Less than 1 Day | - | 79 | 51 | 73 | 72 | 80 | 43 | 65 |
| Breath-Alcohol Test | 89 | 46 | 47 | 72 | 83 | 91 | 49 | 64 |
| Emergency Aid and Rescue | 62 | 67 | 62 | 63 | 60 | 67 | 62 | 63 |
| Public Building Protection | - | 40 | 63 | 60 | 58 | 44 | 68 | 54 |
| Service Function | - | - | 48 | 55 | 60 | 60 | 42 | 48 |
| Animal Control (Dog Catcher) | - | - | 58 | 63 | 42 | - | 37 | 44 |
| Highway Patrol | 96 | 38 | 48 | 36 | - | - | 88 | 43 |
| Maintenance of Police Buildings | 51 | 36 | 34 | 41 | 48 | 47 |  | 40 |
| Custody/Detention-1 Week or Less | - | 73 |  | 36 | 46 | 49 |  | 38 |
| Communications for other Agency | 66 | 56 |  | 40 | - | - |  | 36 |
| Serve Civil Process | - | 88 |  |  | - | - |  | 32 |
| Police Training for other Agency | 77 | - |  |  | 42 | 84 |  | 24 |
| Custody/Detention-Up to I Year | - | 78 |  |  | - | -- |  | 22 |
| Underwater Recovery | 34 | 42 |  |  | - | 42 |  | 19 |
| Bomb Disposal | 45 |  |  |  | - | 82 |  | 17 |
| Polygraph | 62 |  |  |  | 36 | 90 |  | 17 |
| Vehicle Inspection | 55 |  |  |  |  | - |  | 17 |
| Crime Laboratory | 55 |  |  |  |  | 73 |  | 13 |
| Narcotics Laboratory Analysis | 43 |  |  |  |  | 62 |  | 11 |
| Harbor Patrol | - |  |  |  |  | - |  | 7 |
| Lab Analysis for Blood Alcohol | 34 |  |  |  |  | 53 |  | 7 |
| other | - |  |  |  |  |  |  | 6 |
| Coroner | - |  |  |  |  |  |  | 5 |
| Tests for Drivers License | 34 |  |  |  |  |  |  | 3 |
| Custody/Detention-More than 1 Year |  |  |  |  |  |  |  | 3 |

Higher percentages of State and Fifty Largest City departments than of cther departments were handling certain of the 30 activities. For example: AII $C E$ the Fifty Largest City departments responding, and $98 \%$ of the responding State departments, said that their departments provided Police Training for Own DEことutmant. These compare to 68\% for the total sample of departments. All of the responding Fifty Largest Cities said that they handled Criminal Investigation in their own departments. This compares to $86 \%$ of the total sample of departmerts. Although only $13 \%$ of the departments overall had Crime Laboratories, $73 \%$ of the Fifty Largest Cities and $55 \%$ of the States reported having them.

Counties appeared to be the only Department type with significant responsibilities for custody and detention for more than 1 week. Seventyeight percent of these departments had Custody/Detention-Up to 1 Year, as comparea with 22\% of all responding departments.

Tables 1.5-2 and 1.5-3 present summaries of descriptive data by Department Gype and LEAA Region, respectively. As can be seen from the column for ßnnual Equipment Budget (Table 1.5-2), there was a wide range of expenditures among different Department Types: From a mean of about 10 thousand dollars for respcading Cities (1-9) to almost 2.6 million dollars for the Fifty Largest Cities. Overall, equipment budgets represented somewhat over $10 \%$ of the Annuai motal Bucgets.

The mean Number of Part-time Officers was based on those respondents having part-time officers in their departments. Of the 45 responding from the Fifty Largest Cities, only six had part-time officers, including one city which had nearly 6000. Thus, the mean value of 1115 for this department type is somewhat misleading. It should be noted that the category Part-time Officers included officers described as auxiliary, volunteer, reserve,
Table 1.5-2. Descriptive Data by Department Type (Means)

| Department Type | $\begin{gathered} \text { Area } \\ \text { (Sq. Miles) } \\ \hline \end{gathered}$ | Population | Number oe FulluTime ofsicers | Wumber of gart-Time Ofificers | Annual Total Budget | Annual Equipment Budget | Annual Personnel Budget |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 50 Largest | 187 | 851342 | 2491 | 1115 | \$43,268,865 | \$2,669,920 | \$34,712,818 |
| State | 62580 | 3936410 | 889 | 18 | \$16,377,358 | \$ $2,304,339$. | \$12,020,572 |
| County | 1518 | 130254 | 60 | 25 | \$ 1,089,919 | \$ 58,539. | \$ 859,984 |
| City (50+) | 31 | 83344 | 132 | 26 | \$ 1,733,340 | \$ 173,099 | \$ 1,407,177 |
| City (10-49) | 12 | 15849 | 22 | 9 | \$ 257,927 | \$ 24,362 | \$ 206,187 |
| Township | 28 | 13228 | 14 | 8 | \$ 175,654 | \$ 20,854 | \$ 141,675 |
| City (1-9) | 9 | 5038 | 8 | 5 | \$ 82,381 | \$ 9,764 | \$ 60,061 |

school-crossing guard, dispatcher, summer, special agent, traffic supervisce posse, and cadet. All of these classifications were counted in the Part-亡ime Officer category since it has different meanings for di̇̇ferent departments.

Variations in these descriptive averages by LEAA region (Tabie 1.5-3) were consicerably smaller than variations by department type. Begions I and 8 had smaller budgets than the others, primarily because each contained only one of the Fifty Largest Cities.

### 2.0 QUESTION BY GUES-ION DESCUSSION

### 2.1 Advice to the Reader

In reading Section 2, certain pointe shouid be kept in mind:
(a) THIS REPORT IS NOT AN EVALUATION OF ANY OF THE EQUIPMENT DESCRIBED OR DISCUSSED WITHIN IT. TT IS A ERESENTAMONY OF INFORMATION AND OPINIONS OE NA STRATELUE RENOM SEMETE OE POUICE DEPARTMENTS GIVEN IN RESPCNSE TO A SOECUZC SAR OF QUESTIONS. IT DOES NOT, IN ANY WEY, REFTECI OZUECTOVE TESTING OF ANY EQUIPMENT BY THE NAGTON2I BUREPU CF STANDRRDS.
(b) The report reflects oriv wiat polica departranes vere willing and $a b l e$ to say in resporse to a specỉic set cE cuestions. In most cases, no attempt was maçe to veriny the accuracy of the information given or the level of sophistication of the respondent.
(c) Each discussion begins with the presentation of the guestion that appeared in the questionnaire, and in most cases the chuices supplied, $\dot{A} f$ sny, are set offin a box. Hewever, the
reader is cautioned to become familiar with the questionnaire sent to sample departments (see Appendix A) and to evaluate the data in terms of the exact questions asked.
(d) The text tables that appear in Section 2 are almost never the complete tables that were tabulated for that question. Data categories for text tables may have been collapsed from the full table, or certain categories of interest may have been singled out for fuller discussion. Appendix B contains the complete tables from which the text tables were extracted. Text tables have been numbered after the question number (e.g., the text tables for question 6A. would be numbered 6A-1, 6A-2, etc.). The tables in Appendix $B$ are also numbered after the question number, in the same manner. In some cases, tables that appear in Appendix B will not have been discussed at all in the text.
(e) Data in the text of this report are usually presented by nearest whole percent of the group under consideration. In Appendix B, the data are usually presented by number of respondents and percent. Because of statistical limitations imposed by the sample sizes used in this study, the reader is cautioned to be wary of assigning importance to percentage differences of less than $5 \%$ when percentages are based on the total number of respondents, and to percentage differences of less than $10 \%$ when percentages are based on one of the subsample groups, (e.g., a particular Department Type or Region). No statistical tests of significance are reported.
(f) Data were always tabulated by each of the choices suppied, if any, in the questionnaire. Any "other" choices written in by the respondents were also tabulated andor recorded verbatim. In most cases, the numbers of responcents giving a specific "other" response cio nct :reziect the numbers of respondents who would have manked that choice if it had been one of those proviced. Therefore, in most cases, this report lisis or gives exampies of "other" responses, but does not present numbers or percents of departments giving that response. For those questions for which choices were not provided in the questionnaire, coding ca亡egories were developed after approximately one-fourth of the questionnaires had been returned.
(g) The subsample groups (Department Types and Regions) are capitaiized when they are discussed in the text. In addition, the four Department Types which are composed oin City departments are at times discussed as a group. In those cases, the word "city" is also capitalized. The following convention has been adopted in the report to designate the four City Department Types:

```
City with l-9 Officers = City (1-9)
```

City with 10-49 Officers = City (10-49)
City with 50 or more Officers = City (50t)
The Fifty Largest Cities = Fifty Largest or 50 Largest

When the subsample groups are discussed (e.g., "Counties said..." or "Cities (1-9) said ...") the reference is to the responding departments from one of the sample strata. It is particularly important to note that when the text or tables

```
refer to "All Departments" or "All Responding Departments,"
the reference is to all responding departments from the sam-
ple described in Section 1.2. This sample was not propor-
tional to the total population of police departments, and
although it is possible to do so, the data in this report
have not been weighted to allow direct extrapolation to
the total population. (See Appendix B, page B-1.)
(h) Questions which asked departments to identify manufacturers
of their equipment were asked in this manner only to make
the question clearer; NOT TO EVALUATE A MANUFACTURER'S
PRODUCT.
```

2.2 Discussion

### 2.2.1 Characteristics of Respondents

```
TITLE OF RESPONDENT
```

All of the questionnaires in the LEAA Police Equipment Survey were mailed to the Chief or highest official of the department with a request that the questionnaires be directed to the person or persons within the department who were felt to be best qualified to answer the questions.

The Handguns Questionnaire was usually filled in by the Chief/Unit Head in Townships and smaller City departments, and by an Armorer or Ballistician in the States and Fifty Largest Cities. In Cities (50+), the primary respondents were not concentrated into any single category.

Table i. Rank of Primary Respondent for Handguns Questionnaire, by Department Type.*

RANK/TITLE:
DEPARTMENT TYPE:

|  | $\begin{aligned} & \% \text { City } \\ & 1-9 \\ & \hline \end{aligned}$ | $\begin{aligned} & \% \text { City } \\ & 10-49 \\ & \hline \end{aligned}$ | $\begin{aligned} & \% \text { City } \\ & 50+ \\ & \hline \end{aligned}$ | \% 50 <br> Largest | \% State | \% Township |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Chief | 74 | 45 | 13 | 4 | 0 | 67 |
| Gun Specialist | 1 | 6 | 22 | 54 | 34 | 0 |
| Lieutenant | 4 | 13 | 15 | 13 | 11 | 0 |
| Sergeant | 7 | 11 | 9 | 9 | 13 | 15 |

* Excluding Counties

Questionnaires from Counties were most often filled in by the Sheriff (49\%) or Deputy Sheriff (16\%).

```
NUMBER OF YEARS OF LAW ENFORCEMENT EXPERIENCE OF RESPONDENT
```

Table ii. Number of Years of Law Enforcement Experience of Respondents to the Handguns DQ, by Department Type.

DEPARTMENT TYPE:
NUMBER OF YEARS OF EXPERIENCE:

More Than More Than More Than More Than 5 Years 10 Years 20 Years 25 Years

State
97
86
39
26
City (50+)
93
74
39
19
50 Largest
92
City (10-49)
90
88
40
20

Township
86
71
24
11

City (1-9)
83
County
73

All Departments
88
53
23
19
$5215 \quad 9$
43135

66
26
14

In general, the questionnaire was filled in by experienced officers. Although about two thirds of the respondents had More Than 10 Years of law enforcement experience, there were variations among Department Types: More than $85 \%$ of respondents in the Fifty Largest Cities and States had More Than 10 Years of experience, while half or less of the respondents in Townships, Cities (1-9), and Counties had this much experience.

### 2.2.2 On Duty Use of Handguns

1. How many of the officers in your department use on duty, handguns of each of the following calibers? (Either as their primary or their "back-up" weapon.)

$\qquad$

Both the percentages of departments in each Department Type reporting use of each caliber of handgun on duty, and the percentages of all officers in each Department Type using each caliber of handgun on duty were determined. Comparisons of these measures showed some striking contrasts. For example, while $95 \%$ of the responding County departments said that some of their officers were using some .38 handguns, only $55 \%$ of all responding County officers were using . 38s. Similarly, while $15 \%$ of the Fifty Largest Cities reported using . 45 caliber handguns, only $2 \%$ of the officers in that Department Type were reported to be using . 45 s.

Table 1-1. Percentages* of Departments Having At Least One Officer Using a Handgun of the Specified Caliber; and Percentages of All Officers in a Particular Department Type Using Handguns of These Calibers On Duty.

DEPARTMENT TYPE:
CALIBER:

|  | . 38 |  | . 357 Magnum |  | . 45 |  | 9 mm |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \%Office | epts | ice |  | ice | pts |  | pts |
| 50 Largest | 88 | 100 | 9 | 41 | 2 | 15 | 1 | 13 |
| City (50+) | 81 | 97 | 16 | 53 | 1 | 14 | 2 | 22 |
| City (1-9) | 70 | 93 | 23 | 51 | 2 | 8 | 3 | 5 |
| City (10-49) | ) 68 | 94 | 26 | 57 | 2 | 12 | 2 | 15 |
| State | 59 | 87 | 36 | 66 | ** | 6 | 4 | 15 |
| Township | 56 | 85 | 36 | 74 | 1 | 7 | 4 | 26 |
| County | 55 | 95 | 40 | 59 | 1 | 11 | 3 | 10 |
| All Depts. | 80 | 94 | 17 | 56 | 1 | 10 | 1 | 14 |

[^3]Almost all responding departme:nts (94\%) had some officers using the . 38 caliber handgun on duty, and $80 \%$ of the officers in the responding departments were using . 38 s on duty. Although slightly more than half of the responding departments (56\%) reported having some officers using the . 357 Magnum, this gun was used by only $17 \%$ of their officers.

State police, Townships, and Counties reported relatively fewer officers using the .38 caliber handgun (55\%-59\% of officers) and relatively more officers using the . 357 ( $36 \%-40 \%$ of officers) than did City Department Types.

The . 45 and the 9 mm were each being used by only $1 \%$ of officers in the responding departments, and by no more than $4 \%$ of the officers in any Department Type.

In answer to question 1 , the 445 responding departments reported a total of 179,891 officers carrying handguns on duty. Four-fifths of those officers were carrying . 38 caliber handguns, $17 \%$ were carrying .357 s , $1 \%$ were carrying . 45 s , $1 \%$ were carrying 9 mm handguns, and less than $1 \%$ were carrying handguns of any other caliber.

Table l-2. Numbers of Officers in Responding Departments Carrying . 38, . 357, .45, 9mm, and Other Calibers of Handguns On Duty, by Department Type.

DEPARTMENT TYPE:
CALIBERS:

|  | . 38 | . 357 | . 45 | 9 mm | Other |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 50 Largest | 106,540 | 11,111 | 2,365 | 250 | 513 |
| State | 25,451 | 15,288 | 84 | 1,785 | 183 |
| City (50+) | 8,409 | 1,620 | 125 | 171 | 112 |
| County | 1,639 | 1,194 | 30 | 82 | 15 |
| City (10-49) | 1,293 | 498 | 42 | 40 | 23 |
| City (1-9) | 534 | 176 | 26 | 17 | 9 |
| Township | 149 | 97 | 2 | 11 | 7 |
| All Depts. | 144,015 | 29,984 | 2,674 | 2,356 | 852 |
| \% TOTAL | 80\% | 17\% | 1\% | 1\% | <1\% |

It is probable that the relative proportions of .38s and .357 s reported in Question 1 ( $80 \%$ and $17 \%$, respectively) vere partially attributabie to tise sample design: All States and all of the Fifty Largest Cities were included in the sample, but only portions of the other five Department rypes waze sampled.

Using these reported numbers, divided by the numbers of respondente, Department Type averages, per caliber, were computed. These averaces were multiplied by the number of departments in each Department Type in the population* to produce the estimates of the total number of handgurs of each caliber in use shown in Table l-3.

According to the estimates in Table l-ミ. . 38 caliber handguns represented about $70 \%$ of the total on duty handguns while .357 s represented about $25 \%$ of the total. This moderate shift in the relative proportions of .38 s and .357 s was mainly a result of the extrapolation of data from County

[^4]departments: County departments reported 55\% of their officers carrying . 38 s and $40 \%$ carrying .357 s , and Counties make up almost one-fourth of the U.S. police department population.

Table 1-3. Estimated Numbers of Officers Carrying Various Calibers of Handguns in U.S. Police Departments On Duty, by Department Type.

DEPARTMENT TYPE:
CALIBER:

|  | Estimated Number of . 38 s | Estimated Number of .357 s | Estimated Number of . 45 s | Estimated Number of 9 mm | Estimated Number of Other |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 50 Largest | 115,804 | 12,077 | 2,571 | 272 | 558 |
| State | 27,075 | 16,264 | 89 | 1,899 | 195 |
| City (50+) | 58,969 | 11,360 | 877 | 1,199 | 785 |
| County | 70,432 | 51,309 | 1,289 | 3,524 | 645 |
| City (10-49) | 28,838 | 11,107 | 937 | 892 | 513 |
| City (1-9) | 34,875 | 11,494 | 1,698 | 1,110 | 588 |
| Township | 8,686 | 5,655 | 117 | 641 | 408 |
| All Depts. | 344,679 | 119,266 | 7,578 | 9,537 | 3,692 |
| \% TOTAL | 71\% | 25\% | 1\% | $2 \%$ | 1\% |

ESTIMATED TOTAL NUMBER IN U.S. $=484,752$

### 2.2.3 Characteristics of Handguns Used On Duty

Respondents were asked a series of questions about the handgun that was used on duty by more of their officers than any other (Most Used Handgun, Questions $2-2 E$ ), and then these same questions were asked about the handgun used on duty by the second greatest number of officers (Second Most Used Handgun, Questions 3-3E). The questions were asked in this way so that the data could always be referenced to a particular caliber of handgun.

Fifty-eight percent of the responding departments were using more than one caliber of handgun on duty. The Fifty Largest City departments had the smallest percentage of departments (48\%) using more than one caliber of handgun on duty and Townships had the highest percentage (70\%).

Table 2A/3A-1. Percentages of Departments With Officers Using More Than One Caliber of Handgun On Duty, by Department Type.

DEPARTMENT TYPE:
Township ". 70
Stat 64
City (50+) 62
County 60
City (10-49) 58
City (1-9) 51
50 Largest 48
All Departments
2. and 3. Select from the list in Question 1 the handgun that is "used, on duty, by more of your officers than any other."/ "second most often usen by your officers." COMPLETELY FILL IN THE QUESTIONS BELOW FOR THAT HANDGUN.*

2A. \& 3A. Caliber Type.
2B. \& 3B. How many are revolvers? How many are automatics?

2C. \& 3C. List below each different model of this "most used"/"seconc most used" handgun now used in your department. (IDENTIFY EACH DIFFERENT MODEL BY BOTH MANUFACTURER AND MODEL NAME OR MODEL NUMBER.)

2D. \& 3D. Barrel Lengths:
How many have barrels of less than 3 inches? How many have barrels of 3-5 inches? How many have barrels of more than 5 inches?

2E. \& 3E. Ammunition: In the table below, list each type of ammunition that your officers use with this "most used"/"second most used" handgun. (FILL IN the table below for each type of ammunition USED)

Bullet Type
Bullet Weight (in grains)
Manufacturer
SEE APPENDIX A, Pp. A-3 to A-5, FOR ACTUAL QUESTION PRESENTATION.

### 2.2.3.1 Caliber

2A. \& 3A. Caliber Type.
(FOR MOST USED AND SECOND MOST USED HANDGUN)

Ninety-nine percent of the handguns* reported in Questions 2 and 3 were either . 38 caliber ( $82 \%$ ) or .357 caliber (17\%). Only eight of the 445 departments (2\%) said that a caliber other than .38 or .357 was used by more of their officers than any other; four cited the 9 mm as Most Used and four cited the . 45 caliber as Most Used.

Table $2 A / 3 A-2$. Percentages of Handguns Cited as Most Used or Second Most Used, by Caliber.

## CALIBER:

```
% Handguns Reported
in Qs. 2 and 3
    82
    17
        I
```

.38
.357
$9 \mathrm{~mm}^{\prime}$
.45
. 22
. 32
.44
.25
** Less than 1\%

Given these findings, it is not surprising that when the .38 caliber was Iisted as Most Used Handgun, the .357 was the most likely caliber to be listed as the Second Most Used Handgun, and vice versa. States reported the highest percentage of departments in which the .357 was used by more officers

[^5]than any other caliber; $45 \%$ of States said the .357 was Most Used. The Fifty Largest Cities reported the highest percentage of departments in which the .38 was used by more officers than any other caliber; $89 \%$ of the Fifty Largest Cities said the .38 was Most Used.

Table 2A/3A-3. Caliber of "Most Used" and "Second Most Used" Handgun, by Department Type.

DEPARTMENT TYPE:

MOST USED HANDGUN IN DEPARTMENT:
.38 Caliber . 357 Caliber . 38 Caliber . 357 Caliber $\frac{\% \text { Depts. }}{(n=445)} \quad \frac{\% \text { Depts. }}{(n=445)} \quad \frac{\% \text { Depts. }}{(n=259)} \quad \frac{\text { \% Depts. }}{(n=259)}$

| 50 Largest | 89 | 11 | 23 | 64 |
| :--- | :--- | :--- | :--- | :--- |
| City (50+) | 80 | 19 | 29 | 51 |
| City (1-9) | 76 | 20 | 33 | 53 |
| County | 74 | 25 | 32 | 57 |
| City (10-49) | 71 | 27 | 38 | 50 |
| Township | 67 | 33 | 21 | 47 |
| State | 53 | 45 | 53 | 33 |
| All Departments | 74 | 24 | 34 | 51 |

[^6]Table 2A/3A-4. Of Those Departments Citing the . 38 and the .357 as Their Most Used Handguns, the Percentages Listing . 38/.357, Another Caliber, or No Second Most Used Handgun.

OF DEPARTMENTS WHOSE MOST USED HANDGUN WAS:

THEIR SECOND MOST USED
HANDGUN WAS:
$\left.\begin{array}{lccccc} & \text { \%. } 38 & \text { \%. } 357 & & \begin{array}{c}\text { \% Other } \\ \text { \% Using Most }\end{array} \\ \text { Used Handgun } \\ \text { Exclusively }\end{array}\right]$

The remainder of the discussion of Questions 2-2E and 3-3E will focus on the data for Most Used Handgun (Qs. 2-2E), since * these data represent over $90 \%$ of the handguns reported. Only * in cases in which differences appear will the data for Second Most Used Handgun (Qs. 3-3E) be discussed, even though data for Second Most Used Handguns will be presented in the text tables. Full tables for all questions appear in Appendix B.
2.2.3.2 Revolvers Automatics
$2 B$. and $3 B$. How many are revolvers?
How many are automatics?
(FOR MOST USED AND SECOND MOST USED HANDGUN)

Since the vast majority of reported handguns were either .38 caliber or
.357 caliber, it follows that almost all (99\%) of the reported handguns were revolvers (only eleven . 38 caliber automatics were reported, and no . 357
caliber automatics were reported). Within every Department Type, $95 \%$ or more
of the Most Used Handguns were revolvers. For those Most Used Handguns which
were automatics, only 9mm, .45, and . 38 were cited. For Second Most Used, . 32, . 22 , and .25 automatics were also cited.

Table. 2B/3B. Percentages of MOST USED HANDGUNS and SECOND MOST USED HANDGUNS Which Were Revolvers, by Department Type.

DEPARTMENT TYPE:
MOST USED
HANDGUNS:
Total No. Reported

111,928
50 Largest
38,618
9,346
2,338
1,532
563
213
164,588
\%
Revolver

Total No.
\% Reported Revolver

7,398 $\quad 100$
6,087 98
$1,168 \quad 94$
$523 \quad 99$
$307 \quad 93$
14292
$43 \quad 77$
15,668 98
2.2.3.3 Model/Manufacturer

| 2C and 3C.List below each different model of this "most used"/ <br> "second most used" handgun now used in your depart- <br> ment. (IDENTIFY EACH DIFFERENT MODEL BY BOTH MANU- <br> FACTURER AND MODEL NAME OR MODEL NUMBER.) <br> MANUFACTURER <br> $\quad$MODEL/MODEL NUMBER |
| :---: |

Almost all of the "Most Used Handguns" reported by the responding departments were produced by only two manufacturers. Although it was not possible to determine what percentages of handguns in use were made by various manufacturers, the data show that $97 \%$ of the departments listed one or both of two manufacturers, and did not list any other manufactuer
for their Most Used Handgun. At least $92 \%$ of the departments in every Department Type were using those two manufacturers exclusively for their Most Used Handguns.

Table 2C-1. Percentages of Responding Departments Using Handguns of Specified Manufacturers as Their Most Used Caliber Handgun, by Department Type.

## MANUFACTURER

DEPARTMENT TYPE:

| \%All 50 | $\%$ | \%City \%City $\%$ \%City | $\%$ | $\%$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Depts. | Largest | State |  |  |


| 2 | 91 | 100 | 96 | 95 | 88 | 88 | 85 | 5 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 1 | 50 | 57 | 45 | 61 | 49 | 2 | 47 | 56 |
| Other | 3 | 0 | 2 | 1 | 8 | 2 | 5 | 4 |

A great number of different models were represented among departments ${ }^{\circ}$ Most Used Handguns. About two-fifths of all responding departments and 67\% of the Eifty Largest Cities had some of one model made by Manufacturer 2 represented among their Nost Used gans. The four models with the highest percentages of departmental representation were 2.11 made by one manufacturer. The .357 model with greatest representation was also made by this manuEaturer.

```
2D. and 3D. Barrel Lengths:
    How many have barrels of less than 3 inches?
    How many have barrels of 3-5 inches?
    How many have barrels of more than 5 inches?
    (FOR MOST USED AND SECOND MOST USED HANDGUN)
```

Overall, $80 \%$ of the 180,256 handguns reported in Questions 2D and 3D (data for Most Used and Second Most Used combined) had barrels of $7.6-12.7 \mathrm{~cm}$ ( $3-5$ in.), $10 \%$ were less than 7.6 cm ( 3 in.), and $10 \%$ more than 12.7 cm (5 in.). Within the seven Department rypes, about the same proportion of handguns had $7.6-12.7 \mathrm{~cm}$ barrels, with one exception: a smaller proportion
of the handguns reported by State departments (61\%) had barrels 7.6-12.7 cm long, and States reported a much higher percentage (29\%) of handguns with barrels more than 12.7 cm long.

Table 2D/3D-1. Percentages of Most Used and Second Most Used Handguns With Barrels of Various Lengths, by Department Type.

DEPARTMENT TYPE:

| \% Handguns | \% Handguns | \% Handguns |
| :--- | :--- | :--- |
| $7.6-12.7 \mathrm{~cm}$ | Less Than 7.6 cm | More Than 12.7 cm |

BARREL LENGTH:
\% Handguns
More Than 12.7 cm

50 Largest $(\mathrm{n}=119,326) \quad 87$
City l-9 ( $\mathrm{n}=755$ ) 86
City 10-49 ( $\mathrm{n}=1839$ ) 82
Township $(\mathrm{n}=256) \quad 78$
City 50+( $n=10,514) \quad 77$
County ( $n=2816$ ) 77
State ( $n=44,705$ ) 61

All Depts. $(\mathrm{n}=180,256) \quad 80 \quad 10$

Data from Question 2D (Most Used Handgun, $n=164,598$, $91 \%$ of total) showed differences in barrel lengths among the various calibers of handguns. The proportions of .38 caliber handguns of each length closely parallel the proportions of all handguns taken together. In contrast, $100 \%$ of the 9 mm handguns reported had $7.6-12.7 \mathrm{~cm}$ barrels, $91 \%$ of the .45 s had barrels of this length, and $89 \%$ of the .357 s had barrels of this length.

Table 2D. Percentages of Most Used Caliber Handguns of Various Calibers With Barrels of Specified Length. (164,588 Handguns, Q. 2A.)

## REPORTED

BARREL LENGTH: CALIBER OF HANDGUN:

$$
\frac{\% .38}{(n=144,104)} \frac{\% .357}{(n=18,652)} \quad \frac{\% 9 m m}{(n=1788)} \quad \frac{\% .45}{(n=44)}
$$

| Less Than 3 Inches $(7.6 \mathrm{~cm})$ | 10 | 2 | 0 | 0 |
| :--- | :--- | ---: | ---: | ---: |
| $3-5$ Inches $(7.6-12.7 \mathrm{~cm})$ | 80 | 89 | 100 | 91 |
| More Than 5 Inches $(12.7 \mathrm{~cm})$ | 10 | 9 | 0 | 9 |

Two calibers of handguns with greatest representation (. 38 and .357) were examined in greater detail. Table $2 A / 3 A-4$ (p. 11) showed that, in general, one of these two calibers would be used by more officers in a department than any other caliber, and that the other would be used by the next greatest number of officers. Of the .38 s that were listed as Most Used Handguns, $80 \%$ had barrels of $7.6-12.7 \mathrm{~cm}$. Of the .38 s that were listed as Second Most Used Handguns, more than half (53\%) had barrels of less than 7.6 cm . Roughly these same proportions were found in all Department Types except States (Most Used .38s) and Cities with l-9 Officers (Second Most Used .38s). For exact numbers, see Appendix B. Of the .357 handguns cited as Most Used, $89 \%$ had barrels of medium length. Approximately this same percentace was found in six of the seven Department Types for the .357 s that were listed as Second Most Used Handguns. However, the overall percentages for Second Most Üsed . 357s were greatiy affected by State departments: 64\% of the . 357 Second Most Used Hanciguns in States had barrels of more than 12.7 cm .

Table 2D/3D-2. Percentages of . 38 and . 357 Caliber Handguns With Barrels of Each Specified Iergth, When They Were Mcst Used and Second Most Used Hanäguns.

REPORTED
BARREL LENGTH:

## CALIBER:

| . 38 |  | . 357 |  |
| :---: | :---: | :---: | :---: |
| $\begin{gathered} \hline \text { Most Used } \\ (n=144,104) \\ \hline \end{gathered}$ | Second Most $(n=3943)$ | Most Used $(n=18,652)$ | Second Most $(n=11,381)$ |
| 10 | 53 | 2 | 2 |
| 80 | 45 | 89 | 73 |
| 10 | 2 | 9 | 26 |

## 2．2．4 Characteristics of Ammunition Used

```
2E.and 3E. Ammunition: In the table below, list each type of
    ammunition that your officers use with this "most
    used"/"second most used" hanagun. (FILL IN THE
    TABLE BELOW FOR EACH TYPE OF AMMUNITION USED)
    BULLET TYPE BULLET WEIGHT MANUFACTURER
    (IN GRAINS) 
    (FOR MOST USED AND SECOND MOST USED HANDGUN)
```


Hollowpoint 2427
Jackete己 15 - 12
Soft Point IO II
Wadcuこときさ 6
Semi Waむ̃cuťer 3
Me〒al Diercing 22
Unusable Information 16 14
No Answer 1
2
＊Percentages add to more than $100 \%$ since multiple answers were allowed． ＊＊Less than $1 \%$ ．

About two－thirds of the respondents reported using bullets of only one type in their Most Used Handgun．About half of these departments said they used Lead bullets exclusively．Thirteen percent reported using Hollowpoint exclusively．

Table 2E/3E-2. * Of the Departments Using Only One Type of Bullet for Their Most Used and Second Most Used Handguns, Percentages Using Specified Bullet Type.

BULLET TYPE:
MOST USED HANDGUN: SECOND MOST USED:

$$
\frac{\% \text { Depts. }}{(\mathrm{n}=292)} \quad \frac{\text { \% Depts. }}{(\mathrm{n}=138)}
$$

Lead
49
41
Hollowpoint 13
18
Soft Point 6
5
Jacketed 4
4
Ball 4
2
Lubaloy 3
4
Wadcutter 2
Semi Wadcutter 1
1
Semi Wadcutter 1 1
Metal Piercing l 4
Frangible 0 1
Other 1
4
Unusable Information 14
12

### 2.2.4.2 Bullet Weight

About three-fourths of the responding departments reported using ammunition with bullet weights of $151-1.50$ grains ( $978.5 \mathrm{mg}-1036.8 \mathrm{mg}$ ), and very few departments were using amurition with bullet weigrts higher than this. About $17 \%$ were using ammunition witr bullet weights of 654.5 mg 712 mg (101-110 grains), and $12 \%$ with weights of $913.7 \mathrm{mg}-972.0 \mathrm{mg}$ (141-150 grains).

[^7]Table 2E/3E-3. Percentages*of Departments Using Ammunition for Their Most Used and Second Most Used Handguns With Specified Bullet Weights.

## REPORTED BULLET

WEIGHT IN GRAINS: MOST USED HANDGUN: SECOND MOST USED:

| $151-160(978.5-1036.8 \mathrm{mq})$ | 73 | 57 |
| :--- | :--- | ---: | ---: |
| $101-110(654.5-712.8 \mathrm{mg})$ | 17 | 17 |
| $141-150(913.7-972.0 \mathrm{mq})$ | 12 | 10 |
| $121-130(784.1-842.4 \mathrm{mg})$ | 7 | 9 |
| $191-200(1237.2-1296.0 \mathrm{mg})$ | 6 | 5 |

$$
\frac{\% \text { Depts }}{(n=445)} \quad \frac{\% \text { Depts }}{(n=259)}
$$

57
17
10
**

* Percentages add to more than $100 \%$ since multiple answers were allowed. ** Percentages of departments in all other categories were $5 \%$ or less.


### 2.2.4.3 Ammunition Manufacturer

About half of the 445 responding departments (53\%) were using at least some ammunition made by Manufacturer 8 with their Most Used Handgun. About a third (34\%) were using ammunition by Manufacturer $16,17 \%$ were using ammunition of Manufacturer. 12.

Table $2 \mathrm{E} / 3 \mathrm{E}-4$. Percentages* of Departments Using Ammunition Mace by Each Specified Manufacturer with Their Most Used and Second Most Used Handgun.

MANUFACTURER NO:
MOST USED HANDGUN:
SECOND MOST USED:

$$
\frac{\% \text { Depts }}{(n=445)}
$$

$$
\frac{\% \text { Depts. }}{(\mathrm{n}=259)}
$$

8 53 49
16
34
31
12
17
20
10
11
7

[^8]More than half $(n-263,59 \%)$ of the responding departments reported using only one brand of ammunition with their Most Used Handguns. Fifty percent of these departments said they were using that of Manufacturer 8 exclusively. About one-fourth (22\%) reported using Manufacturer 16 exclusively. Less than $10 \%$ were using any other brand exclusively. Of the 109 departments ( $42 \%$ of the 259 reporting a second handgun) reporting use of only one manufacturer's ammunition for their Second Most Used Handgun, $42 \%$ reported using the product of Manufacturer 8, 26\% of Manufacturer 16, and $14 \%$ of Manufacturer 12.

Table 2E/3E-5. Of the Departments Using Only One Brand of Ammunition with Their Most Used and Second Most Used Handqun, Percentages Using Each Specified Brand of Ammunition.

MANUFACTURER NO:
MOST USED HANDGUN: SECOND MOST USED:
$\frac{\% \text { Depts }}{(n=263)}$
$\frac{\% \text { Depts }}{(n=109)}$

8
50
42
16
22
26
10 9 4
12 9
14

* Percentages of departments using each other brand were less than 10\%.


Only $78 \%$ of the 445 departments which provided data about their officers' use of handguns on duty (2. 1) answered this question. Their answers accounted for $62 \%$ of the 179,091 "officers carrying handguns on duty" reported in 2.1.

Some of the 100 departments which did not report off duty use of handguns made such comments as "Off duty officers use weapons of their choice.", and "No off duty officers." Therefore, these data cannot be taken as a measure of proportion of officers that carry weapons off duty. The data can be used, however, to indicate the proportions of various calibers of handguns used off duty as compared with those used on duty.

About one-fourth of the departments not reporting off duty weapons were State departments: 51\% of the States gave "No Answer". About $75 \%$ or more of the departments in all other Department Types did answer Question 4.

Table 4. Percentages of Departments in Each Department Type Which Did Not Report Officers' Use of Handguns Off Duty.

DEPARTMENT TYPE:
\% Departments
"None" / "No Answer"

State 51
City (1-9) 26
50 Largest 22
Township 22
City (50+) 18
City (10-49) 15
County 15
All Departments 22

The 345 departments which reported off duty handgun use were using . 38 caliber handguns in about the same proportion as was reported for on duty use in $2.1: 94 \%$ of all respondinq departments had at least one officer using the . 38 on duty, and $96 \%$ of the 345 departments describing off duty handguns had at least one . 38 in use off duty. In addition, about the same proportions of officers were using the .38 on duty and off duty: $80 \%$ and $86 \%$, respectively.

There was one major difference between on duty and off duty handgun use: Only four different calibers of handguns were reported to be in use on duty by $10 \%$ or more of the responding departments; but eight different calibers were reported to be in use off duty by $10 \%$ or more of the departments that reported off duty use. As with on duty use, however, the percentages of officers using each of these different calibers was small; the majority of officers used the .38 on duty and off duty.

Table 4/l. Percentages of Officers and Percentages of Departments* Using Specified Calibers of Handguns On Duty and Off Duty.

CALIBER:
DEPARTMENTS :
OFEICERS:

$$
\begin{array}{lll}
\text { \% Depts. } & \text { \%. Depts. } & \text { \%. Officers }
\end{array} \quad \begin{aligned}
& \text { \% Officers } \\
& \frac{\text { On Duty }}{(\mathrm{n}=445)} \frac{\text { Off Duty }}{(\mathrm{n}=345)}
\end{aligned}
$$

| .38 | 94 | 96 | 80 | 86 |
| :--- | ---: | ---: | ---: | ---: |
| .357 | 56 | 29 | 17 | 6 |
| 9 mm | 14 | 30 | 1 | 4 |
| .45 Auto. | 10 | 21 | 1 | 2 |
| .32 Auto. | 3 | 22 | $* *$ | 1 |
| .25 Auto. | 3 | 23 | $* *$ | 1 |
| .22 | 3 | 15 | $* *$ | 1 |
| .44 | 2 | 1 | $* *$ | $* *$ |
| .380 | 2 | 10 | $* *$ | $* *$ |
| .41 | 2 | $* *$ | $* *$ | $* *$ |
| .32 Revolver | 1 | 1 | $* *$ | $* *$ |
| .45 Revolver | 0 | 1 | 0 | $* *$ |
| Other | $* *$ | $* *$ | $* *$ | $* *$ |

[^9]
### 2.2.6 Problems With Handguns

5. When you think of all the handquns that have been used by any of your officers in the last 5 years; which of these guns have had, or have caused problems of one kind or another?

Be sure to think of handguns that were once used but are not now used, as well as handguns that are now used. IN THE SPACES PROVIDED BELOW TELL US ABOUT THE HANDGUN AND THE "PROBLEM".

CASE NUMBER 1
Caliber
Revolver or Automatic
Manufacturer
Model
Barrel Length
What was the problem?
CASE NUMBER 2
(etc.)
CASE NUMBER 3

More than half (55\%) of the responding departments either said they had had "no problems" with their handguns in the last 5 years or left the question blank. There were striking differences among the seven Department Types, however: Almost three-fourths of the States and Fifty Largest Cities cited one or more problems, but only about one-fourth of the Counties and Cities (1-9) described problems.

Table 5-1. Percentages of Departments in Each Department Type Listing at Least One Handgun Problem.

DEPARTMENT TYPE:
\% Dept. Types Citinq One or More Problems

State 72
50 Largest 72
City (50+) 53
City (10-49) 47
Township 41
County 29
City (1-9) 24
All Departments 45

Among the 203 departments that described at least one problem, those problems associated with the Cylinder were mentioned most frequently (35\%) The Hammer/Firing Pin was reported to have been involved in the handgun problems of about one-fifth of the departments mentioning problems.

Table 5-2. Of the 203 Departments Which Listed at Least One Problem, Percentages Citing Specified Problem.
PROBLEM: \% Departments*
35
Cylinder
21
Hammer/firing pin ..... 15
Trigger ..... 11
Age, wear and tear ..... 11
Abuse by personnel ..... 10
Accidental discharge ..... 10
Main springs ..... 9
Problems on double or single action ..... 9
Ammunition problems ..... 8
Problems with Finish (Bluing) ..... 8
Jamming ..... 8
Shaving Lead ..... 8
Timing Problems ..... 8
Problems with Reliability/Defective Manufacturing ..... 7
Head Space Problems ..... 6
Barrel Problems ..... 5
Ejector Rod Problems ..... 4
Feeding Problems ..... 4
Other ..... 24

* Percentages add to more than $100 \%$ since departments could describe more than one problem.

Each of the problem descriptions, cateqorized by manufacturer, was recorded verbatim along with the caliber, manufacturer/model, barrel iengit, and type of handgun. No cross tabulations were made with these identivy g factors, however, because the various calibers, manufacturers, eiu. were disproportionately represented among the departments. Cross tabulations with these identifiers would have reflected this departmental representation rather than problems associated with a particular model, caliber, barrel length, etc.
"Shaved lead, cylinder had excess play."
"Cylinder would not rotate when hammer was cocked.
Weapon bought new and used approximately 3 months."
"After carrying this gun in a holster for several years, the rotating mechanism wears so much that the bullets do not line up with the barrel, causing a spray of lead to fly out the side of the chamber."

Examples of Hammer/Firing Pin Problems Mentioned Were:
"Crystallized hammers, weak main spring, crystallized firinq pin."
"Firing pin spring too weak."
"Hammer springs of marginal strength and would not fire primers at all times."

### 2.2.7 Problems Associated With Handqun Ammunition

6. How about handgun armunition: Have your officers found any problems with any handgun ammunition that they have used in the last 5 years?

Again, be sure to think of handgun ammunition that was once used but is not now used, as well as ammunition that is now used. IN THE SPACES BELOW TELL US ABOUT THE. AMMUNITION AND THE "PROBLEM".

CASE NUMBER 1
Caliber
Cartridge
Bullet Type
Bullet Weight
Manufacturer
What was the problem?
CASE NUMBER 2
(etc.)
CASE NUMBER 3 (etc.)

A smaller percentage of the responding departments reported problems with handgun ammunition (26\%)than reported problems with handguns (45\%). A much higher percentage of the Fifty Largest Cities (61\%) reported ammunition
problems than any other Department Type. None of the 27 Township departments and only 7 of the 84 City (1-9) departments listed an amunition problem.

Table 6-1. Percentages of Departments in Each Department Type Reporting at Least One Problem With Handgun Ammunition.

DEPARTMENT TYPE:
\% Dept. Type
50 Largest 61
State 45
City (50+) 43
County 18
City (10-49) 16
City (1-9) 8
Township . 0
All Departments 26

Among the 117 departments that described an ammunition problem, threa problems were cited by more than one-fourth of the departments: Power/Penetration Too Low (30\%); Knockdown Power Insufficient (27\%); and Primer (25\%). A wide variety of other problems was also mentioned.

Table 6-2. Of the 117 Departments Citing at Least One Problem with Handgun Ammunition, Percentages* Citing Each Specified Problem.

PROBLEM:

Power/penetration too low
Knockdown power insufficient
Primer
\% Departments

$$
(\mathrm{n}=117)
$$ 30

Case, Cartridge
$-21$
Wrong amount of powder 17
Gun failure 15
Penetration too great 9
Accuracy poor 5
Leading, Fouling 5
Richochet 5
Smoking excessive 3
Variability of energy rates 3
Powder/Misc. problems 3
Other 14

* Percentages add to more than $100 \%$ since multiple answers were allowed.

A cross tabulation was performed for those departments which said they used reloaded ammunition for either their Most Used or their Second Most Used Handgun (Qs. 2E and 3E). Of these 52 departments, 56\% cited ammunition problems as compared to $26 \%$ of ali the responding departments. (It is likely that more departments were using reloaded ammunition than reported that fact in either Q. 2 E or Q . 3 E. )

As with handgun problems, each ammunition problem was recorded verbatim along with the identifiers listed in Question 6. Again, the disproportionate representation of certain calibers, cartridge types, manufacturers, etc., precluded cross tabulation of these identifiers.

```
Examples of Power/Penetration Too Low Were:
"Lack of penetration."
"Would not penetrate windshields; as a result an officer was
    almost run over by a felon."
"Lack of penetration on autos and ricocheting."
Examples of Knockdown Power Insufficient Were:
"Poor stopping power."
"Bullet would go through person but would not stop or
    immediately disable them."
"The street officers frequently complain that this bullet fails
    to have adequate "knock-down" power desirable in a face to face
    shoot out. Penetration is great, but cavitation is poor on
    this type bullet."
Examples of Primer Problems Were:
"Dead primer, unknown cause of defect."
"Arrived from the manufacturer with blown primers."
"Bad primers."
```

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## DETAILED QUESTIONNAIRE: HANDGUNS AND

HANDGUN AMMUNITION

POLICE EQUIPMENT SURVEY

Sponsored By:

National Institute of Law Enforcement and Criminal Justice Law Enforcement Assistance Administration U.S. Department of Justice

Directed and Conducted By:

Behavioral Sciences Group
National Bureau of Standards
Washington, D.C. 20234
Phone: 301-921-3558

INTRODUCTION: Police officers in several departments have told us informally about their problems in selecting and using handguns. They have told of the danger to their officers from poor handguns and handgun ammunition. In order to make it easier for law enforcement departments to select and buy handguns and handgun ammunition to meet their particular needs, the Law Enforcement Standards Laboratory will be writing voluntary performance standards for these items of equipment.

PURPOSE OF THIS QUESTIONNAIRE: The purpose of this "detailed" questionnaire is to get answers from YOU, the user, about the handguns and handgun ammunition you are now using, and the problems you find in using them. Your answers will be used to determine what kinds of testing need to be done, and what sorts of problems must be solved. We must find out what YOUR needs are.

GENERAL INSTRUCTIONS:

1. Fill in the questionnaire completely. Even if you do not have all the information you need "at your fingertips," please make your best effort to supply every answer AS ACCURATELY AS POSSIBLE.
2. Answer all questions for YOUR OWN DEPARTMENT. Do not attempt to supply information that might exist in some other department.
3. The results of this questionnaire will be compiled by computer. It is very important that you follow directions and answer every question legibly and in the boxes and spaces provided.
4. No individual department will be identified in the report of this survey; the results will be published in tabulated form.
5. Additional instructions for filling in your answers appear after some questions. Follow the directions given.
6. Please PRINT all answers and comments CLEARLY.
7. When this questionnaire has been completely filled in; place it, with the other questionnaires sent to your department, in the stamped, addressed envelope supplied. Return all of them to:

Technology Building, Room Allo
National Bureau of Standards
Washington, D.C. 20234
8. If you have any questions, write to the above address or call
collect: E. Bunten, or P. Klaus
Phone: 301-921-3558
9. Remember that it is only by getting YOUR answers to these questions that it will be possible to begin solving the problems that police have with handguns and handgun ammunition.

1. How many of the officers in your department use, on duty, handguns of each of the following calibers? (Either as their primary or their "back-up" weapon.)

NUMBER OF
OFFICERS
CAIIBER

2. Select from the list in Question 1 the handgun that is used, on duty, by more of your officers than any other. COMPLETELY FILL IN THE QUESTIONS BELOW FOR THAT HANDGUN.

MOST USED HANDGUN
(40-42) 2A. Caliber Type.
(43-47) 2B. How many are revolvers? $\qquad$
(48-52) How many are automatics?

2C. List below each different model of this "most used" handgun now used in your department. (IDENTIFY EACH DIFFERENT MODEL BY BOTH MANUFACTURER AND MODEL NAME OR MODEL NUMBER)

## MANUFACTURER MODEL/MODEL NUMBER

(53-56) a. $\qquad$
(57-60) b.
(61-64) c.
$\qquad$
(65-68) d.
(69-72) e.
(73-76) $f$.
(77-80) $\quad g$. $\qquad$
(10-13)
Numbers in parentheses are for computer use only.

2D. Barrel Lengths:
(14-18) How many have barrels of less than 3 inches?
(19-23) How many have barrels of $3-5$ inches?
(24-28) How many have barrels of more than 5 inches?

2E. Ammunition: In the table below, list each type of ammunition that your officers use with this "most used" handgun. (FILL IN THE TABLE BELOW FOR EACH TYPE OF AMMUNITION USED)
BULLET TYPE $\quad \frac{\text { BULLET WEIGHT }}{\text { (IN GRAINS) }}$ MANUFACTURER
(29-35)
(36-42)
(43-49)
(50-56)
(57-63)
(64-70)
(71-77)
(78-14)
3. Go back to the list in Question 1 and pick out the handgun that is second most often used by your officers. COMPLETELY FILL IN THE QUESTIONS BELOW FOR THAT HANDGUN.

SECOND MOST USED HANDGUN:

| $(15-17)$ | 3A. | Caliber Type: |
| :--- | :--- | :--- |
| $(18-22)$ | 3B. | How many are revolvers? |
| $(23-27)$ |  | How many are automatics? |

3C. List below each different model of this "second most used" handgun now used in your department. (IDENTIFY EACH DIFFERENT MODEL BY BOTH MANJFACTURER AND MODEL NAME OR MODEL NUMBER)

MANUFACTURER MODEL/MODEL NUMBER

| $(28-31)$ | a. |
| :--- | :--- |
| $(32-35)$ | b. |
| $(36-39)$ | C. |
| $(40-43)$ | d. |
| $(44-47)$ | e. |
| $(48-51)$ | f. |



$$
A-5
$$

## PART II: OFF DUTY USE OF HANDGUNS.

4. How about off duty: about how many of the officers in your department use handguns of each of the following calibers when they are off duty?

NUMBER OF OFFICERS

## CALIBER

(24-28)

(34-38) $\qquad$ . 32 Automatic
(39-43) $\qquad$ . 38 Special
(44-48)


9 mm Luger
(49-53) $\qquad$ . 357 Magnum
(54-58) $\qquad$ . 45 Automatic
(59-63) $\qquad$ Other (Specify) $\qquad$

Other (Specify)
5. When you think of all the handguns that have been used by any of your officers in the last 5 years; which of these guns have had, or have caused problems of one kind or another?

Be sure to think of handguns that were once used but are not now used, as well as handguns that are now used. IN THE SPACES PROVIDED BELOW TELL US ABOUT THE HANDGUN AND THE "PROBLEM".
(64)

CASE NUMBER 1
(65-67) Caliber $\qquad$
(68) Revolver or Automatic $\qquad$
(69-70) Manufacturer $\qquad$
(71-72) Model $\qquad$
(73) Barrel Length $\qquad$
(74-75) What was the problem?

CASE NUMBER 2
(76-78) Caliber $\qquad$
(79) Revolver or Automatic $\qquad$
(10-11) Manufacturer $\qquad$
(12-13) Model $\qquad$
(14) Barrel Length $\qquad$
(15-16) What was the problem? $\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

CASE NUMBER 3
(17-19) Caliber $\qquad$
(20) Revolver or Automatic $\qquad$
(21-22) Manufacturer $\qquad$
(23-24) Model
(25) Barrel Length $\qquad$
(26-27) What was the problem?
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
6. How about handgun ammunition: Have your officers found any problems with any handgun ammunition that they have used in the last 5 years?

Again, be sure to think of handgur. ammunition that was once used but is not now used, as well as ammunition that is now used. IN THE SPACES BELOW TELL US ABOUT THE AMMUNITION AND THE "PROBLEM".
(28)

## CASE NUMBER 1

(29-31) Caliber $\qquad$
(32-33) Cartridge $\qquad$
(34-35) Bullet Type $\qquad$
(36-38) Bullet Weight $\qquad$
(39-40) Manufacturer $\qquad$
(41-42) What was the problem?

## CASE NUMBER 2

(43-45) Caliber $\qquad$
(46-47) Cartridge $\qquad$
(48-49) Bullet Type $\qquad$
(50-52) Bullet Weight $\qquad$
(53-54) Manufacturer $\qquad$
(55-56) What was the problem?
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$


## CASE NUMBER 3

(57-59) Caliber $\qquad$
(60-61) Cartridge
(62-63) Bullet Type
(64-66) Bullet Weight $\qquad$
(67-68) Manufacturer $\qquad$
(69-70) What was the problem? $\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

A- 10

IDENTIFYING INFORMATION: (All identifying information will be kept confidential)

Name of Department:
Address:
Name of person who answered this questionnaire:

Title: $\qquad$ Rank: $\qquad$
No. of years experience in law enforcement: $\qquad$
Telephone Number:
Others who helped: 1. $\qquad$
Title:
Rank: $\qquad$
No. of years experience in law enforcement: $\qquad$
Telephone Number: $\qquad$

| $2 \cdot \ldots$ |
| :---: | :---: |
| Title $: \quad$ Name |

No. of years experience in law enforcement: $\qquad$ Telephone Number: $\qquad$

NOTES

## APPENDIX B

## DATA TABLES

B. 1 Advice to the Reader
(a) The data presented in the following tables resulted from the responses of a stratified random sample (see Section 1.2) of police departments in response to a specific set of questions (see Appendix A). These data do not, in any way,: reflect objective testing of any of the equipment by the National Bureau of Standards. The reader is cautioned to become familiar with the questionnaire and to evaluate the data in terms of the exact questions asked.
(b) Tables have been numbered after the question number (e.g., the tables for question 6A. would be numbered 6A-1, 6A-2, etc.). The data are usually presented by number of respondents and nearest whole percentage. Because of the statistical limitations imposed by the sample sizes used in this study, the reader is cautioned to be wary of assigning importance to percentage differences of less than $5 \%$ when percentages are based on all respondents, and to percentage differences of less than $10 \%$ when percentages are based on one of the subsample groups; (e.g., a particular Department Type or Region). No statistical tests of significance are reported.
(c) These tables are based on the responding departments from the specific sample selected for this questionnaire. This sample was not proportional to the total population of police departments, and although it is possible to do so, the data in these tables have nct been weighted to allow direct extrapolation to the total population.
(d) In order to extrapolate to the total population from the respondent data presented in this report, use the following procedure: For each Department Type, multiply the percentage of respondents of a particular Department Type giving the answer of interest (See B. 2 Data Tables, Appendix B) by the total number of departments of that Department Type in the population (See Table l.2-2, Section l.2); add those seven subtotals; and divide the total by the total number of police departments in the population (Table 1.2-2). The quotient of this division will be an estimate of the percentage of all U.S. police departments that would choose the answer of interest.

## B. 2 Data Tables

范



departuent


 OTHER TITLE
UNDERSHERIFF
SPECIALIST
TOTAL



$\stackrel{\circ}{2}$




3yIvnnoils
Table i-2

1. HOW MANY OF THE OFFICERS IN YOUP OEPARTMEVT USE ON DUTY. HAADGIINS OF EACH OF
THE FOLLOWING CALIPERS? (EITHER AS THEIR PRIMARY OR THEIR BACKUP WEAPON.).. NUMBERS
TOWNSHIP


|  |  |
| ---: | ---: |
|  |  |
| FIFTY |  |
| LARGEST |  |
| CITIES |  |
| NO. |  |
|  |  |
| 136 | 0 |
| 106540 | 88 |
| 250 | 0 |
| 1111 | 9 |
| 2365 | 2 |
| 15 | 0 |
| 15 | 0 |
| 26 | 0 |
| 29 | 0 |
| 126 | 0 |
| 166 | 0 |
| 0 | 0 |
| 120779 | 99 |


|  |  |
| ---: | ---: | ---: |
|  |  |
| CITY |  |
| (SO OR MORE |  |
| OFFICERS) |  |
|  |  |
| NO. |  |
|  |  |
| 9 | 0 |
| 8409 | 81 |
| 171 | 2 |
| 1620 | 16 |
| 125 | 1 |
| 2 | 0 |
| 19 | 0 |
| 5 | 0 |
| 28 | 0 |
| 1 | 0 |
| 48 | 0 |
| 0 | 0 |
|  |  |
| 10437 | 100 | . $)$

## CALI GER

ALL
DEPARTMENT
TYPES
$\begin{array}{rr}\text { NO. } \\ 159 & 0 \\ 144015 & 80 \\ 2356 & 1 \\ 29984 & 17 \\ 2674 & 1 \\ 138 & 0 \\ 67 & 0 \\ 32 & 0 \\ 103 & 0 \\ 135 & 0 \\ 224 & 0 \\ 4 & 0 \\ 179891 & 99\end{array}$

## .32 AUTOMATIC .38 SPECIAL

WกNgサK WWw 6
つ11Vwolnv $S$
.25
.32 REVOLVER
.380
.41
.44
OTHEH
TOTAL
Table 1-2

1. HOW MANY OF THE OFFICERS IN YOUR DEPARTYENT USE ON DUTY. HANDGUNS OF EACH OF THE FOLLOWING CALIBERS? (EITHER AS THEIR PRIMARY OR THEIR BACKUP WEAPON.)-- Numbers represent numbers of departments with at least one
CALIBER

$\times \quad \cdot \mathrm{ON}$










MEAN
MINIM
MAXIMUM
.357 MAGNUM
-357 MAGNUM
MEAN
MINIMUM
MAXIMUM
.45 AUTOMATIC

- 45 AUTOMATIC
MINIMUM



TOTAL
Table 2 B-2
(NUMBER OF DEPARTMENTS)


DEPARTMENT




| 入 | 2 | $8$ |
| :---: | :---: | :---: |
| $\begin{aligned} & \frac{5}{2} \\ & 0 \\ & \hline \end{aligned}$ | $\stackrel{\circ}{8}$ | ${ }^{m m}$ |
|  | $*$ | $\underset{\infty}{\infty} \sim$ |
| $\stackrel{\omega}{L}$ | $\stackrel{\circ}{7}$ | $\stackrel{0}{9}$ |

[^10]



\[

$$
\begin{array}{rr}
\text { NO. } & \text { \% } \\
1456 & 63 \\
868 & 37 \\
3 & 0 \\
2327 & 100
\end{array}
$$
\]

$$
\begin{gathered}
\text { CITY } \\
\text { (1-9 } \\
\text { OFFICERS) }
\end{gathered}
$$


FIFTY
LARGEST
CITIES
$\stackrel{\square}{2}$
$\dot{2}$ シ~~



CALIBER
.38
.357 MAGNUM
.45
total
2.B. CALIBER BREAKDOWN OF ALL MOST USED GUNS - AUTOMATICS (NUMBER OF GUNS)

Table 2 B-6
2.B. CALIUER BREAKDOWN OF ALL MOST USED GUNS - AUTOMATICS (NMBER OF DEPARTMENTS)
CALIBER
.38
$9.4 M$
.45



* NOOONODO 第

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\dot{\dot{z}} \stackrel{0}{\mathrm{~N}} \mathrm{y}=0=-00 \mathrm{~N}
$$

* $\ln _{\mathcal{F}} 0000000$ ت $\stackrel{\text { 岁 }}{\stackrel{y}{s}}$
$\ddagger$
$\vdots$
0
0

$$
\begin{gathered}
\text { FIFTY } \\
\text { LARGEST } \\
\text { CITIES }
\end{gathered}
$$

Table 2 Dol
2．D．BARREL LENGTHS：（FOR YOUR YOST USED HANDGIJN）HOW MANY HAVE BARPELS OF THE（NUMBER OF GUNS） FOLLOWING LENGTHS？

BARREL LENGTH
LESS THAN 3 INCHES MORE THAN 5 INCHES NO ANSWER
total
Table $2 \mathrm{D}-2$

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=
$$

Table 2 Di


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$$
\begin{aligned}
& \alpha \\
& \sigma \\
& N \\
& N \\
& \sim
\end{aligned}
$$

$$
\begin{gathered}
\text { CITY } \\
(1=9 \\
\text { OFFICERS) }
\end{gathered}
$$

$$
\begin{array}{ll}
001 & 88 S \hbar 91 \\
0 & 56 \\
0 \tau & 2909 T \\
18 & \$ 9 \varepsilon \varepsilon \varepsilon T \\
6 & \angle 90 S T \\
\% & 0
\end{array}
$$



$\stackrel{3}{2}$
M
$\begin{array}{rr}329 & 86 \\ 31 & 5\end{array}$
0
-
-
0

$$
\begin{array}{rr}
\text { COUNTY } \\
& \\
\text { NO. } & \% \\
337 & 14 \\
1887 & 81 \\
114 & 5 \\
n & 0 \\
2338 & 100
\end{array}
$$

$$
013100
$$

CITY
2．D．BARREL LENGTHS：（FOR YOUR MOST USED HANDGUN）HOW MANY HAVE BARRELS OF THE（NUMBER OF DEPARTMENTS） FOLLOWING LENGTHS？
BARREL LENGTH
かMNぺ
STATE





Table 2 D-3

## Table 2 D-4

(NMMBER OF GUNS)

BARREL LENGTHS WHEN YOST USEO HANDGUN IS A . 38 CALIBER
UEPARTMENT TYPE




LESS THAN 3 INCHES
$\begin{aligned} & \text { 3-5 INCHES } \\ & \text { MORE THAN } 5 \text { INCHES }\end{aligned}$
TOTAL


107035100

1154






(NUMBER OF GUNS)
barrel lengths when most used handgun is a . 357 caliber
LESS THAN 3 INCHES
MQRE, THAN 5 INCHES
total
barrel leingth
$\begin{array}{ll} \\ \text { STATE } & \\ \text { N } \\ \\ \text { NO. } & \\ 11 & 0 \\ 10642 & 93 \\ 790 & 7 \\ 11443 & 100\end{array}$


$$
\begin{gathered}
\\
\\
\text { ALL } \\
\text { OEPARTMENT } \\
\text { TYPES } \\
\text { NO. } \\
\\
416 \\
16632 \\
160.4 \\
18652 \\
186 \\
\hline
\end{gathered}
$$

Table 2 D-5
Table 2 D-6

|  |  |  |  |  | DLPARTMENT TYPE |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ALL DEPARTMENT TYPES | STATE |  | COUNTY |  | $\begin{gathered} \text { CITY } \\ \text { (I-9 } \\ \text { OFFICERS) } \end{gathered}$ |  | $\begin{gathered} \text { CITY } \\ \text { (10-49 } \\ \text { OFFICERS) } \end{gathered}$ |  | $\begin{gathered} \text { CIT } \\ 150 \text { OR } \\ \text { OFFIC } \end{gathered}$ | MORE RS) |
| NO. \% | NO. | \% | NO. | \% | NO. | \% | NO. | \% | vo. | \% |
| 21749 | 22 | 47 | 33 | 45 | 44 | 52 | 32 | 36 | 42 | 53 |
| $66 \quad 15$ | 8 | 17 | 6 | 8 | 13 | 15 | 20 | 22 | 10 | 13 |
| 10524 | 8 | 17 | 14 | 19 | 11 | 13 | 25 | 28 | 29 | 37 |
| 286 | 6 | 13 | 4 | 5 | 3 | 4 | 5 | 6 | 4 | 5 |
| 143 | 1 | 2 | 3 | 4 | 0 | 0 | 1 | 1 | 3 | 4 |
| 4510 | 9 | 19 | R | 11 | 4 | 5 | 9 | 10 | 8 | 10 |
| 82 | 2 | 4 | 0 | 0 | 1 | 1 | 3 | 3 | 2 | 3 |
| $\begin{array}{ll}73 & 16\end{array}$ | 3 | 6 | 17 | 23 | 10 | 19 | 16 | 18 | 12 | 15 |
| 10 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 51 | 0 | 0 | 2 | 3 | 2 | 2 | 1 | 1 | 0 | 0 |
| 562126 | 59 | 125 | 88 | 119 | 94 | 111 | 112 | 125 | 110 | 140 |



FIFTY
ARGEST
CITIES







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| $\begin{aligned} & \dot{\alpha} \\ & \stackrel{\alpha}{0} \hat{\alpha} \end{aligned}$ |  |  |
| :---: | :---: | :---: |
|  | $\stackrel{\text { S }}{ }$ |  |

$\square$




$$
\begin{gathered}
\text { Table } 3 \mathrm{~B}-1 \\
3.3 \text {. HOW MA }
\end{gathered}
$$

Table 3 B-2
(NMBER OF DEPARTMENTS)







142100




3.3. HOW MANY (SECOND MOST USED HANOGUNS) ARE REVOLVERS?
HOW MANY(SECOND VOST USED HANDGUNS) ARE AUTOVATICS?

## REVOLVERS AUTOMATICS


GUN TYPE

ARE AIJTOMATIC

33100


$$
\text { Table } 3 \text { B-3 }
$$

(NUMBER OF GUNS)
(NUMBER OF GUNS)

Table 3 B-6
.32
9 MM
.45
.22
.25
.380
TOTAL





UEPARTMEIVT

$\circ$
-
-1
$\qquad$  -
.32
9 MM
.45
.22
.25
.380
TOTAL

$$
\begin{array}{lll}
2 & \dot{N} x 0000 & 0 \\
\sum_{3}^{I} & \dot{O} & -10000
\end{array}
$$




CALIBER
3.8. CALIBER BREAKDOWIV OF ALL SECOND MOST USED GUNS - AUTOMATICS
DEPARTMENT TYPE






Table 3 D-2

Table $3 \mathrm{D}-1$
(NIMBER OF GUNS)


LESS THAN 3 INCHES SヨHJNI G NGMSI ヨYOW

TOTAL
3.D. BARREL LENGTIS: FOR YOUR SECOND MOST IISED HANDGUN, HOW WANY HAVE BARKELS OF
THE FOLLOWING LENGTHS? THE FOLLONING LENGTHS?

BARREL LEINGTH
BARREL LEINGTH




$$
\begin{aligned}
& 15658
\end{aligned}
$$

$$
\begin{aligned}
& 6097100
\end{aligned}
$$

$$
\begin{aligned}
& 14
\end{aligned}
$$

(NMMBER OF DEPARTMENTS)
JEPARTMENT TYPE



$$
\begin{aligned}
& \text { N } \\
& 0 \\
& 0
\end{aligned}
$$

$$
\begin{array}{rr}
\text { CIIY } \\
\text { (I-9 } \\
\text { OFFICERS) } \\
\text { NO. } & \% \\
0 & 19 \\
33 & 77 \\
3 & 7 \\
2 & 5 \\
40 & 108
\end{array}
$$


Table 3 D-5
BARREL LEIGGTHS WHEN SECOVD MOSI USED HANDGJN IS A . 357 CALIRER

$$
\begin{aligned}
& \begin{array}{l}
\text { ALL } \\
\text { DEPARTMENT } \\
\text { TYPES }
\end{array}
\end{aligned}
$$

$\begin{aligned} & \text { 3-S INCHES } \\ & \text { MORE THAN } 5 \text { INCHES }\end{aligned}$
3 -5 INCHES
NO ANSWER
total
Table 3 D-6
barrel length




|  | * |
| :---: | :---: |
| $\underset{\sim}{\omega}$ | $\dot{¢}$ |




|  |  |  |
| :---: | :---: | :---: |
|  |  |  |
|  |  |  |
|  |  |  |




CITY
(S0 OR MORE
OFFICERS)

departmeint


$\stackrel{\sim}{\sim}$
3
3
3 $\dot{\sim}$


* moogomo iomrroomoo s















$$
\begin{aligned}
& \text { TOWNSHIP } \\
& \text { NO. } \\
& 11 \\
& 13 \\
& 3 \\
& 3 \\
& 11 \\
& 27
\end{aligned} 100
$$n

$\underset{z}{2}$ .....
 ..... N
COINTY$\stackrel{\infty}{\infty}$
state○ N-TOUHNMNNNNUHMM

| TOWVSHIP |
| ---: |
| NO． |
| 0 |
| 15 |
| 12 |
| 126 |
| 27 |
| 27 |



6．HUN ABOUT HANDUUV RYYUNITION：HAVE YOUR OFFICERS FOUND ANY
HANDGUN AMMUNITION THAT THEY HAVE USED IN THE LAST 5 YEARS？ RESPONSE

$$
\begin{aligned}
& \text { No. } \%
\end{aligned}
$$

$$
\begin{aligned}
& \begin{array}{l}
\text { CITY } \\
\text { (5U OR VORE } \\
\text { OFFICERS) } \\
\text { 100. } \\
\hline 34 \\
27 \\
18 \\
18 \\
34 \\
79 \\
79
\end{array} 100 \\
& \begin{array}{l}
0 \\
- \\
\hline
\end{array} \\
& \begin{array}{l}
\text { YPE } \\
\text { CITY } \\
\text { (10-49 } \\
\text { FFICERS) } \\
\text { NO. } \\
14 \\
14 \\
45 \\
30 \\
30 \\
\hline 89 \\
89 \\
\hline
\end{array}
\end{aligned}
$$

$$
\begin{aligned}
& 445 \quad 99
\end{aligned}
$$


z－9 әтqе山
 HANDGUN AMMUNITION THAT THEY HAVE USED IN THE LAST 5 YEARS？
PROBLEM
2 00000000000000000
$\stackrel{\sim}{\sim}$
00000000000000000
$0000 c-10000000000$ cooochococoooococ


$\therefore$ CHNCOMNONHDCOOOOO
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$\therefore 000000-1000000000$

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PROBLEMS

Table 6－5
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| 7. AUTHOR(S) <br> S. Bergsman, E. Bunten, P. Klaus |  | 8. Performing Urgan. Report No. NBSIR 73-214 |
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15. SUPPI.EMENTARY NOTES
16. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)

The report outlines the methodology of and summarizes a portion of the data from the LEAA Police Equipment Survey of 1972. One of a series of seven reports resulting from this nationwide mail survey of a stratified random sample of police departments, the present report summarizes the answers of 445 police departments concerning their officers' use of handguns and handgun ammunition: on-duty and off-duty use, types and calibers in use, and problems encountered. The data are presented by all responding departments and by seven department types.
17. KEY WORDS (six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons)

## Ammunition; Handguns: Police; Police Equipment; Standards

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[^0]:    * LEAA POLICE EQUIPMENT SURVEY OF 1972, Volume I: The Need for Standards Priorities for Police Equipment.

[^1]:    * Does not include the 50 Largest Cities.
    ** By Population, U.S. 1970 Census.

[^2]:    * LEAA Police Equipment Survey of 1972. Op. cit,

[^3]:    * Percentages add to more than $100 \%$.
    ** Less than $1 \%$.

[^4]:    $\overline{\text { * See Table }} 1.2-2$, p.4.

[^5]:    * The total numbers of handguns reported in Qs. 2 and 3 were slightly greater than the numbers of officers carrying handguns reported in Q. 1 ( 180,256 and 179,891 , respectively). In addition, there were a few "Third," "Fourth," etc., "Most Used Handguns" that should not have been reported in Qs. 2 and 3. Both of these errors combined, however, represented less than $1 \%$ of all the handguns in the responding departments.

[^6]:    * Most Used Handgun percentages were based on all respondents. Second Most Used Handgun percentages were based on the 259 respondents listing a second handgun.

    Half of the reporting 328 departments in which there were more .38 s in use on duty than any other caliber were using the .38 exclusively for on duty service (reported no Second Most Used Handgun). Only 17\% of the departments in which the .357 was reported as the Most Used on duty gun were using the . 357 exclusively.

[^7]:    * This table was compiled by special tabulation and does not appear in Appendix B.

[^8]:    * Percentages add to more than $100 \%$ since multiple answers were allowed.
    ** Percentages of departments using each other brand were $5 \%$ or less.

[^9]:    * Percentages of departments add to more than $100 \%$ since there could be more than one caliber of handgun in each department.
    ** Less than $1 \%$.

[^10]:    (NUMBER OF GUNS)
    2.B. CALIBER BREAKDOWN OF ALL MOST USED GUNS - REVOLVERS

