

**NBS Special
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480-29**

Survey of Clothing Requirements for Uniformed Law Enforcement Officers



**Law Enforcement
Equipment
Technology**

46758²

**U.S. DEPARTMENT OF
COMMERCE
National Bureau of
Standards**



ACKNOWLEDGMENTS

This report was prepared by the Law Enforcement Standards Laboratory (LESL) of the National Bureau of Standards under the direction of Jared C. Collard, Manager, Selected Systems Program, and Jacob J. Diamond, Chief of LESL. The work was sponsored by the National Institute of Law Enforcement and Criminal Justice, Lester D. Shubin, Standards Program Manager.

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Survey of Clothing Requirements for Uniformed Law Enforcement Officers

prepared by
Welson and Co., Inc.
Hartford, Conn. 06114

and the

Law Enforcement Standards Laboratory
Center for Consumer Product Technology
National Bureau of Standards
Washington, D.C. 20234

prepared for
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Contents

	Page
Foreword -----	iv
1. Introduction -----	1
2. Police Clothing Survey -----	2
2.1. Basis for Selection -----	3
2.2. Criteria for Frequency of Uniform Procurement -----	4
2.3. Uniform Features -----	4
2.4. Desired Improvements -----	5
2.5. Injuries Related to Police Work -----	6
3. Postscript -----	8
Appendix A—Questionnaire -----	9

List of Figures

	Page
Figure 1. Personnel assignments in 21 urban police departments -----	3
Figure 2. Basis for clothing selection -----	3
Figure 3. Basis for clothing requirements—departments which have uniform specifications -----	3
Figure 4. Criteria for uniform procurement -----	4
Figure 5. Frequency of uniform replacement -----	4
Figure 6. Relative importance of uniform features -----	5
Figure 7. Clothing attributes most in need of improvement -----	5
Figure 8. Percentage of personnel exposed to physical hazards -----	6
Figure 9. Frequency of injuries to patrolmen -----	7
Figure 10. Most frequent injuries to patrolmen during all operations -----	7
Figure 11. Most frequent injuries to patrolmen during arrests -----	8

FOREWORD

The Law Enforcement Standards Laboratory (LESL) of the National Bureau of Standards (NBS) furnishes technical support to the National Institute of Law Enforcement and Criminal Justice (NILECJ) program to strengthen law enforcement and criminal justice in the United States. LESL's function is to conduct research that will assist law enforcement and criminal justice agencies in the selection and procurement of quality equipment.

LESL is: (1) Subjecting existing equipment to laboratory testing and evaluation and (2) conducting research leading to the development of several series of documents, including national voluntary equipment standards, user guidelines, state-of-the-art surveys and other reports.

This document is a law enforcement equipment report developed by LESL under the sponsorship of NILECJ. Additional reports as well as other documents are being issued under the LESL program in the areas of protective equipment, communications equipment, security systems, weapons, emergency equipment, investigative aids, vehicles and clothing.

Technical comments and suggestions concerning the subject matter of this report are invited from all interested parties. Comments should be addressed to the Law Enforcement Standards Laboratory, National Bureau of Standards, Washington, D.C. 20234.

Jacob J. Diamond
Chief, Law Enforcement
Standards Laboratory

SURVEY OF CLOTHING REQUIREMENTS FOR UNIFORMED LAW ENFORCEMENT OFFICERS

**Welson and Co., Inc.
Hartford, Conn. 06114**

Questionnaires were sent to 304 police departments to obtain information about the police uniform: the basis for its selection, the frequency of procurement, its most important features, the areas of needed improvements, and injuries relating to police work.

A total of 96 departments (32%) responded to the survey. From this sample, useful data were obtained for use as guidance for police quartermasters and clothing manufacturers in the specification, selection and design of police uniforms. In general, law enforcement officials are primarily concerned with four aspects: appearance, durability, comfort and versatility (the use of the uniform for a variety of functions and weather conditions).

Key words: Clothing survey; law enforcement officer uniforms; police injuries; police uniforms; uniforms.

1. INTRODUCTION

The police uniform has several obvious functions: It must be durable and must identify the wearer as a law enforcement officer; it must be comfortable without hindering mobility; and, it must provide some protection against the environment and, to a lesser extent, against injury.

The purpose of this project was to identify those characteristics of the police uniform which were of major concern to the officer, to correlate those concerns with the duties of the officer and, if possible, to define areas in which clothing improvements are needed.

To accomplish this purpose, a survey (appendix A) was made of over 300 police agencies across the country. The results of the survey are presented below. In addition, a series of interviews were held with uniform manufacturers, police department personnel, and other experts in the clothing field. The information obtained concerning the relationship of desired uniform characteristics to officer function is given in table 1.

In a companion study to obtain data relevant to the sizing of uniforms and other gear, measurements were made of 23 critical body dimensions of approximately 3000 male law enforcement officers. The results of this study were published in December 1976 as Department of Justice report LESP-RPT-0701.00, Anthropometry of Law Enforcement Officers, (Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, Stock No. 027-000-00458-0, price \$3.30).

TABLE 1. Major characteristics desired in clothing

Police Operation	Comfort	Mobility	Identification	Protection	Visibility
GENERAL PATROL					
Investigation of Suspicious Persons/Circumstances	X	X	X		
Making Arrest			X		
Processing, Transferring Prisoner			X		
Surveillance, Stakeout	X				
Property Investigation	X				
Crime Investigation	X				
Disturbance Follow-up	X		X		
Accident Assistance			X		X
Crime Prevention	X		X		
EMERGENCY					
Civil Disorders/Demonstrations/Riots		X		X	
Special Events Control				X	
Arrest of Hostile Fugitive		X		X	
Major Accident Assistance			X		
Fire Fighting Operations		X		X	
TRAFFIC					
Traffic Engineering	X				
Parking Control and Regulation	X				
Direction of Traffic					X
OFFICE					
Records Keeping and Other Administrative Duties	X				
Communications	X				
Complaint Recording and Processing	X				

2. POLICE CLOTHING SURVEY

The police clothing survey reproduced in appendix A consisted of 20 questions and a request for suggestions for the improvement of clothing. The questions covered the following areas:

- The basis for uniform selection;
- The frequency of uniform procurement;
- The most important uniform features;
- The desired uniform improvements; and,
- Injuries related to police work.

The questionnaire was sent to 304 police departments across the country. Ninety-six agencies (32%), consisting of 21 urban and 75 rural departments, responded in time for their responses to be used in this report.

The urban agencies represented departments having 137 or more police personnel, and the rural agencies represented departments of less than 137 personnel. The 21 urban agencies employed a total of 14,779 persons, an average of 704 persons per department. The 75 rural agencies employed 2,261 persons, an average of 30 per department. Figure 1 presents a functional breakdown of the personnel in the 21 urban police agencies. As indicated, almost four out of five police department personnel were uniformed.

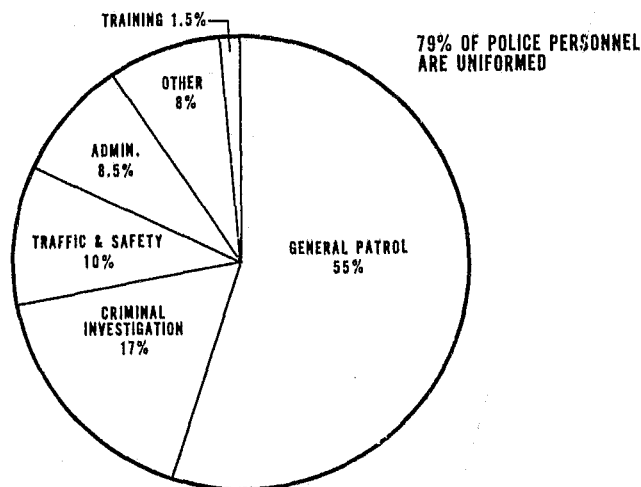


FIGURE 1. Personnel assignments in 21 urban police departments.

2.1. Basis for Selection

Sixty-one percent of the police departments which responded to the survey indicated that they had a departmental specification for clothing selection (fig. 2). Each of these departments had established its own specification, with little or no influence or input from other police departments. Approximately 24 percent of the responding departments used a supplier catalog to select clothing, 8 percent used other means of clothing selection, and 7 percent used all of these methods to select clothing for their department.

Of the departments which had specifications for uniforms, about an equal number reported that they based their clothing requirements on their own performance and test data as reported that they based them on the characteristics of clothing items available from vendors (fig. 3).

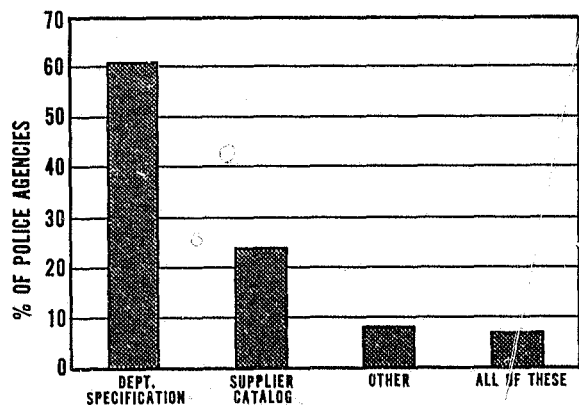


FIGURE 2. Basis for clothing selection.

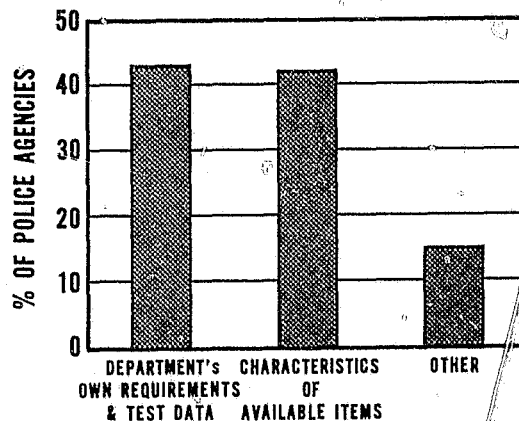


FIGURE 3. Basis for clothing requirements—departments which have uniform specifications.

2.2. Criteria for Frequency of Uniform Procurement.

Responses from the survey (figs. 4 and 5) indicated that the major reason for uniform procurement is replacement due to wear, etc., with budgetary considerations playing an important role in determining when replacement is needed. While the season does affect the timing of a purchase, that is a minor consideration. About half the departments replace uniforms regularly (either semi-annually or annually) and half replace them as needed (fig. 5).

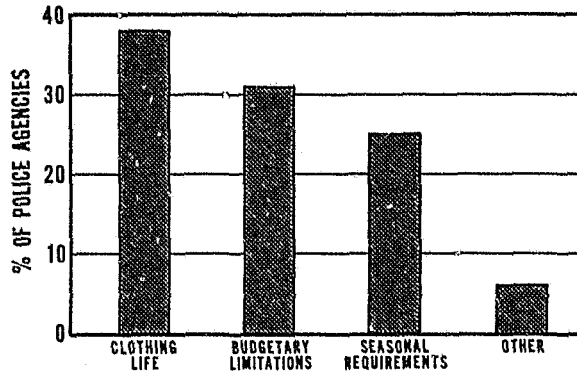


FIGURE 4. *Criteria for uniform procurement.*

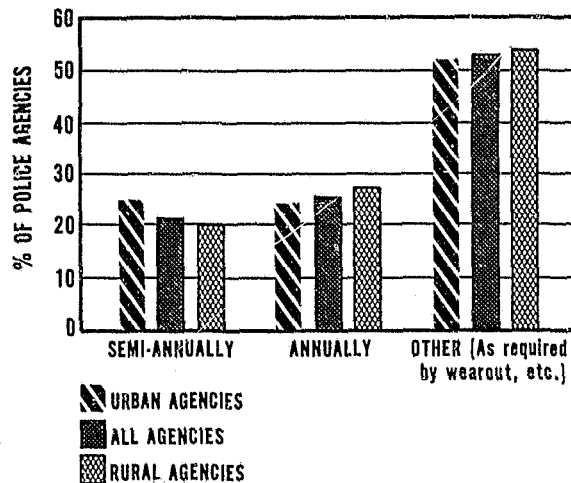


FIGURE 5. *Frequency of uniform replacement.*

2.3. Uniform Features

Figure 6 shows the response of the agencies to a question designed to assess the relative importance to them of several features of the police uniform. They were most interested in recognition and identification as police officers and, secondarily, in protection against the weather. They were less interested in traditional uniform design and in protection against physical attack. Most agencies felt that additional padding, coatings, or metal meshes in garments were not desirable.

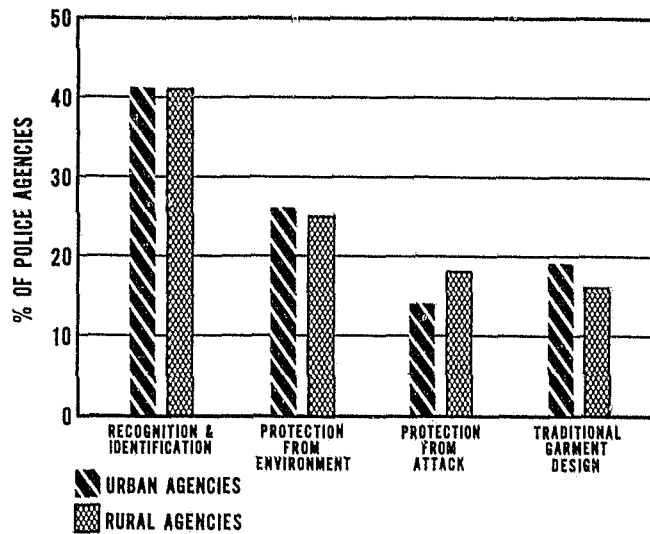


FIGURE 6. *Relative importance of uniform features.*

2.4. Desired Improvements

The clothing improvements most desired by both rural and urban agencies are shown in figure 7; the data have been weighted to reflect first, second, etc., choices. The rural agencies indicated that clothing weight, and tear and penetration resistance needed improvement most; by small margins, the urban agencies rated ventilation, and tear and penetration resistance as most in need of improvement. The interest of both types of agencies in tear and penetration resistance undoubtedly reflected their desire for more durable clothing, since the physical protection aspects were minimized (fig. 6).

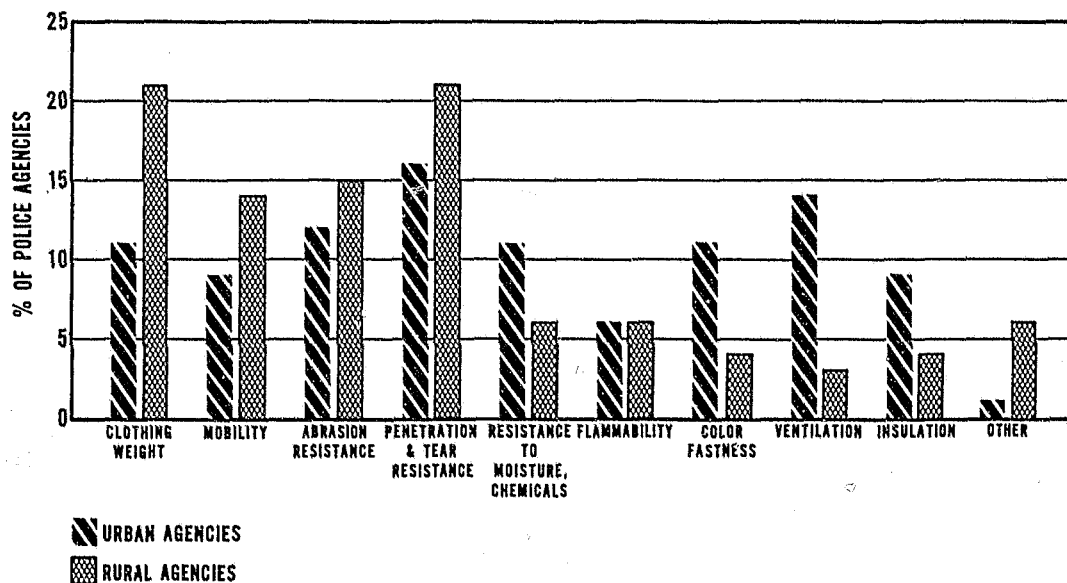


FIGURE 7. *Clothing attributes most in need of improvement.*

Some of the general comments and suggestions received from the respondents to the questionnaire included the following:

- (1) Uniforms should be more contemporary in design (lapels, collars, cuffs, etc.).
- (2) Uniforms should possess improved colorfastness.
- (3) Uniforms should allow for greater mobility, especially in winter garments.
- (4) A more standard clothing specification and/or a standard uniform should be developed.

2.5. Injuries Related to Police Work

The percentages of all police personnel who are exposed to physical hazards are shown in figure 8. In most departments, more than 50 percent of the personnel are so exposed, the preponderant exposure bracket being 50-75 percent.

The frequency of injuries, to patrolmen only, is shown in figure 9. As might be expected, the urban departments, with their higher crime rates, experienced higher injury rates than the rural departments.

The most frequent causes of injuries to patrolmen, during all operations, are shown in figure 10. Sixty percent of the responding agencies reported that injuries to their officers were most frequently caused by physical attacks during arrest operations; in 24 percent of the agencies they were related to environmental causes; and in 11 percent they were due to automobile accidents.

The most frequent causes of injuries to police officers during arresting operations (fig. 11) were falls and physical attacks. Relatively few injuries were suffered directly from the use of weapons.

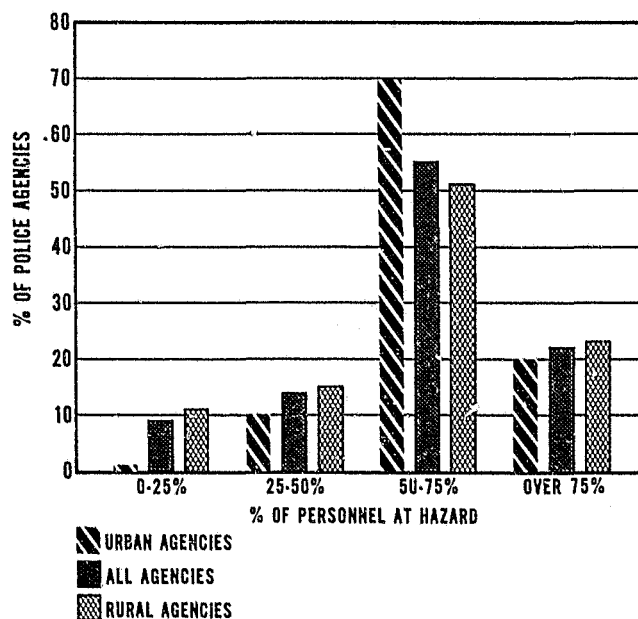


FIGURE 8. Percentage of personnel exposed to physical hazards.

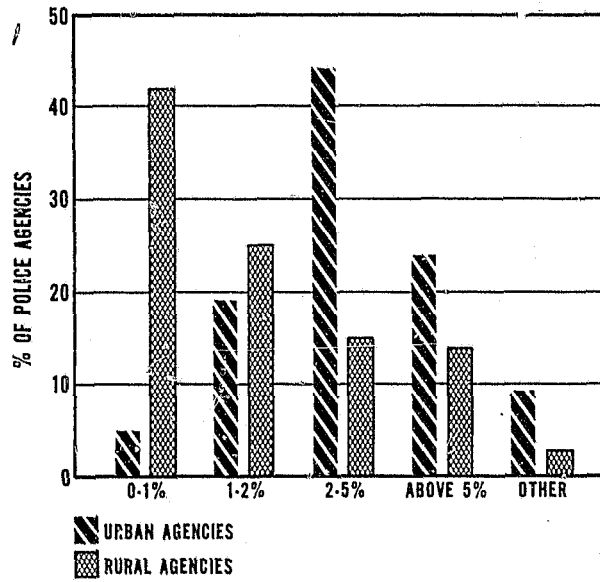


FIGURE 9. *Frequency of injuries to patrolmen.*

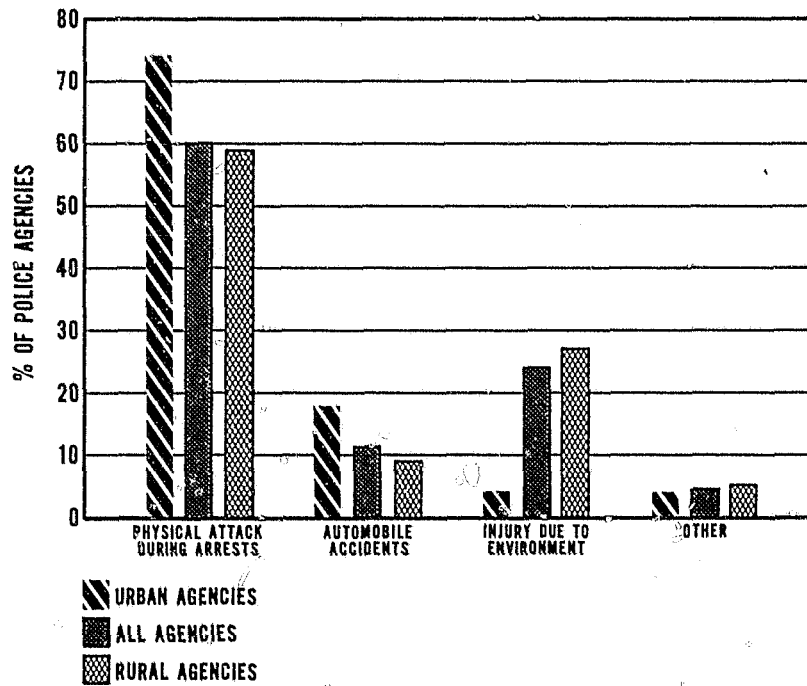


FIGURE 10. *Most frequent injuries to patrolmen during all operations.*

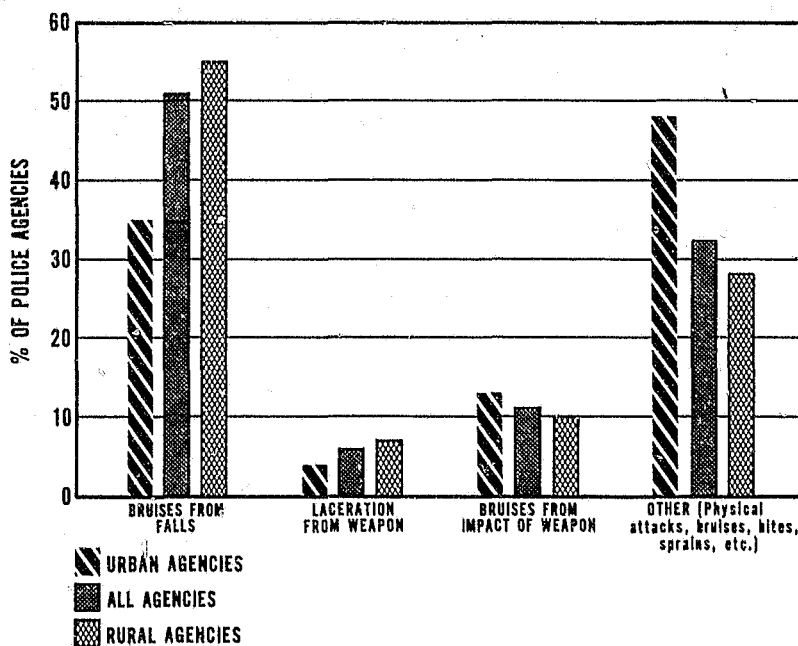


FIGURE 11. *Most frequent injuries to patrolmen during arrests.*

3. POSTSCRIPT

Welson and Company, Inc. has gone out of business, and the original responses and raw data are not available to NBS for further analysis. Nevertheless, useful information was obtained by the survey. The publication of this report is intended to provide the manufacturers of police uniforms with "feedback" from the operating levels of police departments in the hope that it will lead to improved uniform design and construction.

Appendix A—Questionnaire

June 1973

U.S. Department of Commerce
National Bureau of Standards

DETAILED QUESTIONNAIRE: CLOTHING

POLICE EQUIPMENT SURVEY

Sponsored By:

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

Conducted under Contract 3-35831 for the National Bureau
of Standards By:

Welson and Company, Inc.
104 Ledyard Street
Hartford, Conn. 06114

INTRODUCTION: In a recent nationwide survey of police departments, uniforms and clothing have been identified as areas in which improvements could be made. In order to assist police departments to obtain the best clothing and materials available, the Law Enforcement Standards Laboratory will be writing voluntary standards for those items in need of improvement.

PURPOSE OF THIS QUESTIONNAIRE: The purpose of this "detailed" questionnaire is to obtain answers from you, the user, about the uniforms and clothing that your department wears. On the basis of your clothing problems, needs, and applications, future garment and fabric testing requirements will be determined.

GENERAL INSTRUCTIONS:

1. Fill in the questionnaire completely. Even if you do not have 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 may 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 in the stamped addressed envelope supplied. Return all of them to:

Welson & Company, Inc.
104 Ledyard Street
Hartford, Conn. 06114

8. 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 clothing.

PART I: POLICE DEPARTMENT CLOTHING REQUIREMENTS

1. How many persons are employed in your police department? _____
2. What is the approximate breakdown of your department in terms of divisions of duty function and uniform requirements?

<u>Division</u>	<u>Estimated Per cent of Department</u>	<u>What percentage of these divisions require uniforms?</u>
A. General Patrol	_____	_____
B. Traffic & Safety	_____	_____
C. Criminal Investigation	_____	_____
D. Training	_____	_____
E. Administration	_____	_____
F. Other	_____	_____

3. How many different clothing items are presently procured by your department?

_____ Jacket, Summer	_____ Coat, Winter	_____ Gloves
_____ Trousers, Summer	_____ Trousers, Winter	_____ Rainwear
_____ Shirt, Summer	_____ Shirt, Winter	_____ Shoes
_____ Hat, Summer	_____ Hat, Winter	_____ Tie
_____ Other, Please List:		

4. How are these items presently procured?

_____ Department Specification

_____ Supplier Catalog

_____ Other

5. If your items are procured through a department specification, how are the clothing requirements determined?

_____ Based upon available vendor items.
_____ Based upon performance and test data determined by department.
_____ Other

6. How is the frequency of your clothing procurements determined?

_____ Seasonal Clothing Requirements
_____ Clothing Life
_____ Budgetary Limitations
_____ Other

7. How often are uniforms procured for each uniformed patrolman?

_____ Every six months
_____ Annually
_____ Other (please specify)

8. What is the average number of clothing items for each patrolman purchased in the above period?

_____ Jackets
_____ Shirts
_____ Trousers
_____ Other (please specify)

9. How would you rate each of the following features of uniforms in their order of importance to your department?

_____ Recognition and identification of police personnel
_____ Protection from physical attack
_____ Protection from environment (weather)
_____ Traditional garment design

10. In what areas do you feel that clothing could be improved?
Please number the following in the order of importance.

_____ Clothing Weight	_____ Flammability
_____ Clothing Mobility	_____ Color Fastness
_____ Abrasion Resistance	_____ Ventiliation
_____ Penetration and Tear Resistance	_____ Insulation
_____ Compatibility with moisture, chemicals	_____ Other: (please specify)

11. What items are required to be carried by your uniformed policemen?
Please number the most commonly carried item first and least common second.

_____ Pistol, Ammunition	_____ Handcuffs
_____ Hand Radio	_____ Nightstick
_____ Notebook	_____ Other: (please specify)
_____ Flashlight	_____

PART II: POLICE DUTY HAZARDS AND PROTECTION

12. What is the greatest cause of injury to your patrolmen?

- _____ Physical attack during arrest of suspects
- _____ Automobile Accident
- _____ Injury due to environment (falls on ice, etc.)
- _____ Other (please specify)

13. What percent of your department personnel are exposed to potential physical hazards in the normal conduct of duty? (Patrolmen, investigations, etc.)

- _____ 0 - 10%
- _____ 10 - 25%
- _____ 25 - 50%
- _____ 50 - 75%
- _____ Other (please specify)

14. What is the frequency of injury to police patrolmen only during a yearly period?

- _____ 0 - 1%
- _____ 1 - 2%
- _____ 2 - 5%
- _____ Above 5%
- _____ Other (please specify)

15. Of the injuries obtained during arresting operations, what are the most frequent?

- _____ Laceration from weapon
- _____ Bruises from impact of weapon
- _____ Bruises from falls
- _____ Other (please specify)

16. Would padding in strategic areas of a uniform be desirable from a protection standpoint? _____

17. Are injuries sustained while on duty influenced greatly by season?

_____ Greatest number occur during summer

_____ Greatest number occur during winter

_____ No seasonal effect

18. Are there great differences in injury frequency between uniformed and plainclothes personnel?

_____ No, Approximately the same

_____ Yes, (Please explain below)

19. Does your department supply a clothing allowance for the plainclothes personnel? _____

20. Are there restrictions placed upon or requirements specified for the type of clothing worn by plainclothes officers? _____
If so please explain below:

This image shows a single page of white paper with horizontal black ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper appears slightly aged or off-white. There is no handwriting or other markings on the page.

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

Name of Department: _____

Address: _____

Name of person who answered this questionnaire:

Name

Title: _____ Rank: _____

No. of years experience in law enforcement: _____

Telephone Number: _____

Others who helped: 1. _____

Name

Title: _____ Rank: _____

No. of years experience in law enforcement: _____

Telephone Number: _____

2. _____

Name

Title: _____ Rank: _____

No. of years experience in law enforcement: _____

Telephone Number: _____

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