Safety and Control in a County Jail: Nonlethal Weapons and the Use of Force

A Report Submitted to the

Maricopa County Sheriff's Office

National Sheriffs' Association

National Institute of Justice

by

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Introduction

Correctional institutions are extremely coercive organizations in which all activities are carried out in an environment of uncertainty. In both jails and prisons, where staff are usually unarmed and always outnumbered by the population of resistant prisoners, the ability of staff to control the prisoners is a matter of central importance. For the most part, staff rely on their legitimate power; that is, prisoners accept that staff have the authority to give reasonable instructions and directions related to their daily activities (Hepburn, 1985). Of all the types of power, legitimate power is capable of gaining compliance by the largest number of prisoners (extensiveness), over the widest scope of prisoner activities (comprehensiveness), and over the greatest amount of time and effort devoted to those activities (intensity).

Coercive power, in contrast, is most effective when it is always available but seldom used. In prisons and jails, coercive power is an ever-present resource which can be mobilized to provide the force necessary to support legitimate power. Lethal force is a rare event which represents the extreme end of the continuum. Lethal weapons are issued routinely only to guard the perimeter and few, if any, officers working within the population are armed with lethal weapons unless they are responding to an internal disturbance. Nonlethal force is a much more prevalent occurrence within jails and prisons where officers routinely rely on direct physical contact with prisoners to maintain control and security. For the most part, this use of force involves only some form of "hard" or "soft" "hands on" contact with the prisoners, but such nonlethal weapons as a stun device or chemical spray are becoming more prevalent within jails and prisons (see Henry, 1994).

Reported Incidence of the Use of Force in Corrections

We know that deadly force is rarely used and that nonlethal force is frequently used, but there are few studies which provide actual or estimated national frequencies. Each institution keeps its own records of the "use of force" incidents which occur, but totaling these incidents across institutions or making comparisons between institutions is difficult, if not impossible, due to institutional

differences in the definition of what constitutes "force," in the policies which specify when such incidents should be reported, and in the type and completeness of any such reports.

In 1993, the American Correctional Association conducted a national sample survey of the use of force in 325 prison facilities, representing 49 state correctional systems and the Federal Bureau of Prisons (Henry, 1994; Henry et al., 1994). The number of incidents during the previous twelve months ranged from zero in 17 facilities to 200 or more in 8 facilities (with a high of 652 in one facility). Most facilities fell between these extremes, however, with somewhere between 7 and 90 incidents reported. Overall, there were a reported mean of 70 and median of 34 incidents per facility. In general, the incidence of the use of force is greater within larger facilities and within maximum security facilities.

Lethal force is most likely to be used against escaping inmates and to control group disturbances, whereas nonlethal force is most likely to occur when officers become involved in fights between inmates or when an inmate refuses to comply with lawful orders (see Senese, 1994; Henry, 1994). Most incidents of nonlethal force are spontaneous, use only "hands on" force, occur in housing units, and involve only one inmate. Although lethal force is designed to have deadly consequences, nonlethal force rarely results in injuries to either officer or inmate. Most inmate injuries and nearly all officer injuries from nonlethal force are minor abrasions or scrapes.

The Use and Effectiveness of Nonlethal Weapons

Both the American Correctional Association's 1993 national survey of 325 state and federal prisons and the 1993 survey by the Institute for Law and Justice of 154 jails and 62 prisons reach quite similar findings with regard to the availability of nonlethal weapons in correctional facilities. These reports indicate that nonlethal weapons are present in most facilities, although prisons are more likely than jails to have nonlethal weapons. Chemical irritants and batons (or some type of impact weapon) were available for use in nearly all the prisons studied, but in only about half of the jails. Low-lethal projectile guns were available in nearly half the prisons and less than 20 percent of the jails, and a stun device was available in approximately one third of both the prisons and the jails.

"Available," however, does not mean that all officers routinely are equipped with these weapons. Instead, these weapons are more likely to be stored in a central arsenal or distributed only to certain, perhaps supervisory, staff. As a result, many jails and prisons report that the weapons were not used during the preceding year. Even in those facilities in which these weapons had been used at least once during the past year, only the chemical irritants were used an average of ten or more times. Asked to rate the effectiveness of these nonlethal weapons, prison and jail administrators surveyed rated the low-lethal projectile gun as most effective, but all the weapons were thought to be effective. Compared to batons and other nonlethal weapons, low-lethal projectile guns, chemical irritants and stun devices were viewed by jail and prison administrators as the most effective in both subduing inmates and assuring officer safety. Among the chemical irritants, oleoresin capsicum (also referred to as pepper spray) is considered the most effective alternative to the use of "hands on" techniques, batons, and other conventional force (Onnen, 1993; *Corrections Forum,* 1995).

Maricopa County Jails Adopt Nonlethal Weapons

Nonlethal weapons were introduced into the six jails and Intake center operated by the Maricopa County Sheriff's Office in 1994. Funded by the Science and Technology Division of the National Institute of Justice, the National Sheriffs' Association supplied the Sheriff's Office with enough handheld stun devices and oleoresin capsicum spray canisters to arm every officer working within any one of these jail facilities. The National Sheriffs' Association also funded the requisite module of preservice and in-service training for each officer prior to the distribution of the weapons.

From the beginning, the Sheriff and his top administrative and command staff were very favorably disposed to the plan to make both the stun device and the pepper spray available to all detention officers as a means to increase control and reduce injuries in the jails. The February 1994 issue of Roundup, the Maricopa County Sheriff's Employee Newsletter, contained an open letter from Sheriff Arpaio (see Appendix A). Entitled "Non-Lethal Weapons: The Beginning," the one-page article opens with the statement that "The Maricopa County Sheriff's Office is all but abandoning physical force as the primary way to restrain unruly prisoners and instead will rely on non-lethal pepper sprays and stun devices that promise reduced injuries to both lawmen and criminals." After announcing that pepper spray and stun devices were being supplied by the National Sheriffs' Association and would be distributed to all detention officers over the next year, the Sheriff subsequently noted that "when suspects or jail inmates refuse to respond peacefully to lawful instructions, the pepper spray or stun device certainly is more efficient and humane than heavy physical force."

Only one commander voiced strong opposition to the presence and use of the weapons in the jails. Other commanders shared two somewhat different concerns. First, they asked whether the weapons should be made available to all officers or to only the supervisors? At issue was the fear that officers may be disarmed by inmates and that the weapons then would be used against offic ers. Also at issue, and perhaps of greater concern, was the prospect of misuse or abuse by an officer. Second, they resisted the use of pepper spray in the confined and poorly ventilated jail facilities for fear that its use would contaminate other areas of the jail. These issues were addressed in the course of several meetings, and the decision was made to introduce both nonlethal weapons in all facilities and to provide them to all detention officers and supervisors.

Training in Nonlethal Weapon Use by Facility

Beginning in early 1994, supervisors below the rank of Captain were trained and then armed with the nonlethal weapons. The training requirements necessitated that the supervisory staff were trained one jail at a time, resulting in somewhat different dates at which each jail went "on line" with the new weapons. Once all supervisory staff in all facilities had been trained, line officers began to receive the same training program. Again, all detention officers in one facility were trained and equipped with the weapons before the officers in the next facility began their training, a process which resulted in staggered dates at which the entire facility went "on line."

Characteristics of these facilities, and the dates at which the supervisors and the line officers completed their training, are presented in Table 1. The In-Tents facility is a compound comprised entirely of inmates residing in large military tents and is located within the perimeter fence surrounding Estrella jail. Due to the nature of the In-Tents facility, all officers assigned to this facility

already were trained and armed with both nonlethal weapons when the study was initiated in January 1994. Given the proximity to In-Tents, the supervisors at Estrella also had already received and had been using both the stun device and the pepper spray. By June 1994 all supervisors at the other facilities had been trained and armed with the nonlethal weapons; by April 1995 the detention officers at all facilities had been trained and armed with these same weapons.

Table 1. Description of Maricopa County Detention Facilities

	Facility						
	Estrella	In Tents	1st Ave.	Towers	Durango	Madison	Intake
Legal Status of Prisoners	Mixed	Sentenced	Sentenced	Pretrial	Post-Convicted Pre-Sentenced	Pretrial & Sentenced	Booking
Security Level	Max/Med	Minimum	Maximum	Medium	Minimum	Max/Med	Maximum
Inmate Population Size							
January 1, 1994	550	550	300	680	700	1,527	121
January 1, 1996	551	833	387	904	1,082	1,427	106
Detention Officers Assigned							
January 1, 1994	86	49	38	92	94	274	99
January 1, 1996	89	57	47	95	102	271	89
Date Nonlethal Weapons Implemented							
Supervisors	12/93	12/93	2/94	3/94	6/94	6/94	4/94
Detention Officers	4/95	12/93	2/95	3/95	3/95	2/95	1/95

Use of Force Policy and Review

During the introduction of the nonlethal weapons into the jail facilities, the Maricopa County Sheriff's Office Policy and Procedure manual was amended to address the use of nonlethal weapons within the jails. In addition to general statements regarding training and the approved method for the use of nonlethal weapons, Policy GJ-1, "Use of Force and Authorized Weapons," specifies that "after appropriate warning and display, oleoresin capsicum spray or a stun device may be used as a preferred alternative to hands-on force, since hands-on force often results in officer or suspect injury..." (see paragraph 5A of the Policy, contained in Appendix A). Consistent with policy, the training module stressed that nonlethal weapons were to be used as an intermediate step in the continuum of force and that nonlethal weapons were to be used, if possible, before making "hands-on" contact with inmates. Whenever the inmate failed to cooperate with direct orders or commands by the officer, and if the officer was presented with a choice, then the prescribed course of action was (1) to first repeat the command while threatening to use the nonlethal weapon, and, if that is repeated without success, (2) to use the nonlethal weapon, and then, only if needed, (3) to rely on the use of "hands-on" physical force against the inmate.

This policy was designed to reduce physical contact with the inmate, thereby reducing the possibility than the inmate and/or officer might be injured in a scuffle or fight in an environment of

steel furniture bolted to concrete walls and floors. Yet, by April 1995, the policy was amended somewhat. Too many detention officers reportedly viewed the use of force continuum as mandat ing that they use the nonlethal weapons before using hands-on tactics. Any indecision in critical situations was considered to be a potential detriment to the safety of the officer and others, so the policy was reworded to indicate that nonlethal weapons and hands-on tactics were equivalent responses on the continuum of force scale. The continuum of force was redesigned (see Figure A1, page 66) to indicate that officers could elect to use the nonlethal weapons or hands-on tactics in response to the same situation.

In August 1995 the Maricopa County Sheriff's Office received notice that the Civil Rights Division of the U.S. Department of Justice would soon initiate an investigation to determine whether the conditions at the Maricopa County Jails violated inmates' constitutional rights, specifically with regard to allegations of excessive force and denial of adequate medical care. External experts visited the jails in October 1995, and soon thereafter the use of force policy was modified again. Nonlethal weapons were elevated on the continuum of force and placed just above the use of "hands on" tactics.

Another change which occurred in October 1995, also in response to the investigation, was the formation of the Use of Force Review Committee. Chaired by the Assistant Custody Bureau Commander and comprised of the Commanders of each of the facilities, this committee was designed to meet weekly to review all reports of the use of force within all detention facilities and direct investigations into questionable reports. The notification and subsequent investigation into claims of excessive use of force occurred during the final five months of the two-year evaluation study.

Evaluation of the Effectiveness of Nonlethal Weapons

The National Institute of Justice also provided funds to the National Sheriffs' Association to conduct an independent evaluation of the effectiveness of nonlethal weapons within the Maricopa County jail facilities. Sheriff Joe Arpaio and his administrative staff were apprized of the evaluation strategy and they responded throughout the evaluation with great openness and cooperation to the evaluation's needs for a variety of data. In his one-page letter published in Roundup in February 1994 to announce the introduction of nonlethal weapons to the jails, for instance, the Sheriff also stated that an evaluation will be conducted by researchers from Arizona State University, that data collection forms will be constructed, and that he had directed supervisors to make certain that these forms are completed accurately.

Types of Data Used in the Evaluation

One source of evaluative data is the Altercation reporting form, referred to in the Sheriff's open letter to all employees. The evaluation team, working with the Sheriff's Office, designed this one-page (front and back) incident reporting form for recording information on all incidents in which force was used or threatened by an officer against an inmate. This form then was formally adopted by the Sheriff's Office as the official "Altercation Form" to be completed by the principal officer involved in the incident and verified by the supervisor. A copy of this form is included in Appendix A.

The Altercation Reporting Form was introduced in January 1994. It was adopted slowly for the first two months in the jail facilities and, indeed, it was not used at all at Intake, so it is unlikely

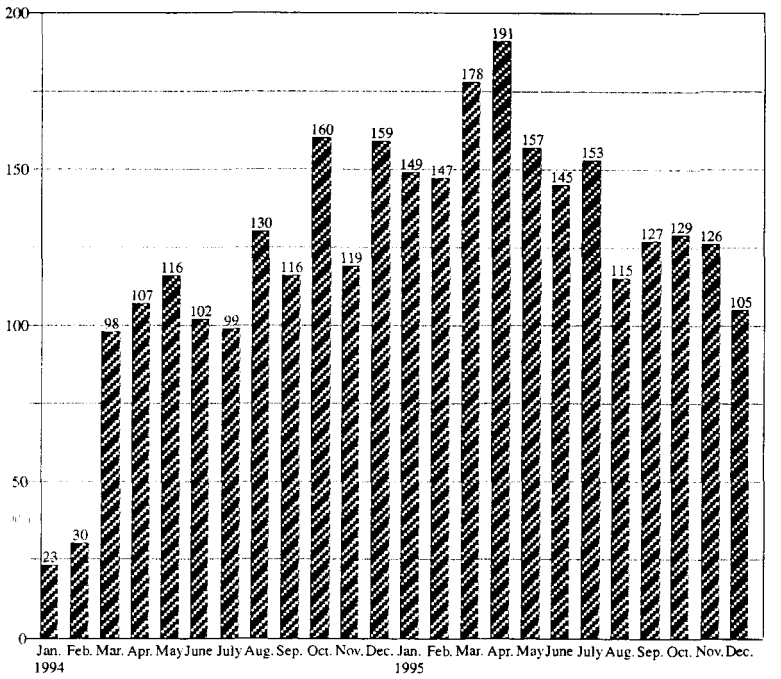


Figure 1. Frequency of Incidents in Which Force Was Used, by Month, for All Facilities

that the reports submitted during those first few months account for all of the incidents in which force was used. By March 1994, however, the Altercation Form had become routinely accepted as another bureaucratic piece of paper to be completed following use of force incidents, and the number of reports submitted appears to be a very good representation of the incidents which occurred. A good representation, that is, at least until the federal investigation began in August 1995 and the Use of Force Review Committee was formed in October 1995. The sudden decrease in reported altercations in August 1995 suggests that these events affected either (1) the number of incidents in which force was used or threatened or (2) the likelihood that an Altercation form would be completed following a use-of-force incident, or (3) both.

During the 24 months between January 1, 1994 and December 31, 1995, there were a total of 3,037 reported incidents in which force was used or threatened. Of these, 28 occurred in a small holding jail located in the southeast part of the county; because the number of cases is so small and because the jail was closed during much of the observation period, those cases are excluded from this analysis. Another two cases were reported from the Psychiatric Unit; due to the small number of these cases from a very atypical part of the detention facility, these cases also were excluded from this analysis. Finally, 12 incidents involving security transport are excluded from the analysis. The study, then, is based on a total of 2,995 incidents in which force was used or threatened: 1,808 incidents were reported from Intake and 1,187 incidents were reported from the six jail facilities. A breakdown by facility is presented in Table 2.

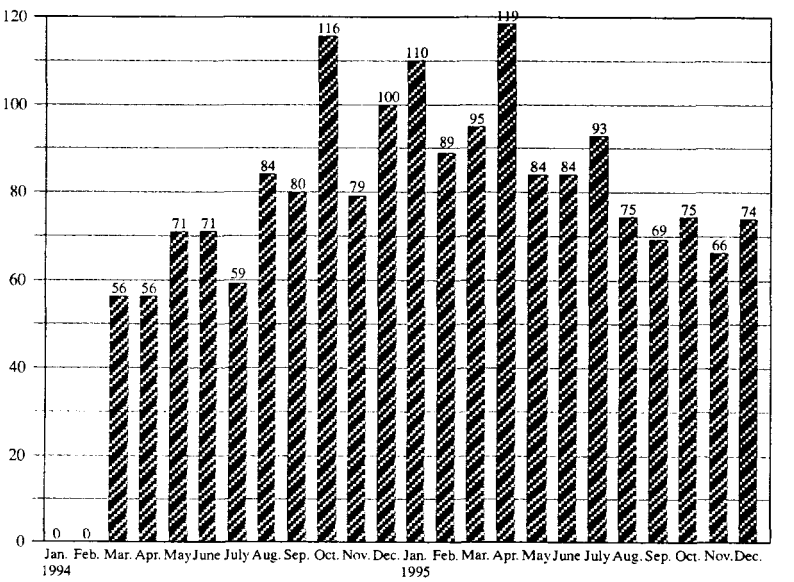


Figure 2. Frequency of Incidents in Which Force Was Used, by Month, for Intake Only

A second source of evaluative data is an anonymous survey of all detention officers and supervisors conducted at three times during the evaluation period. The first

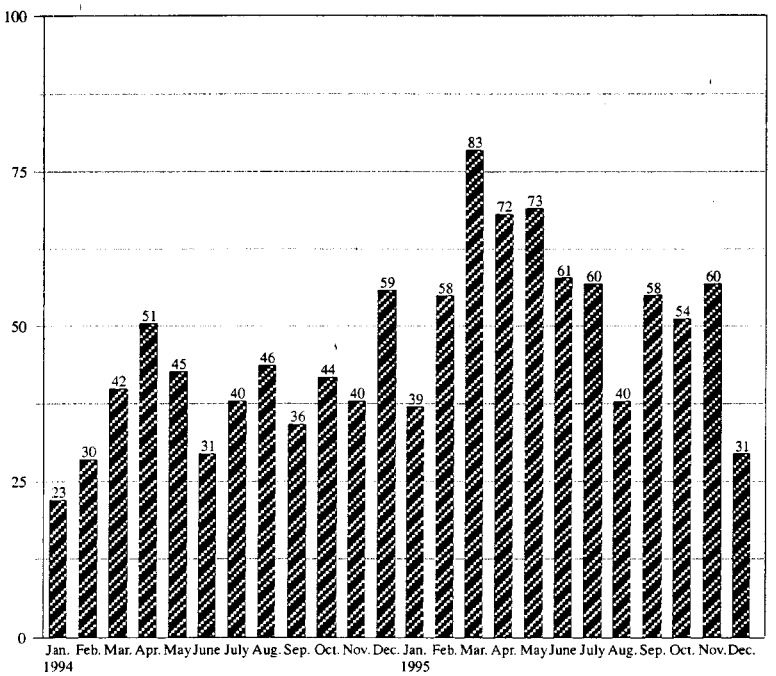


Figure 3. Frequency of Incidents in Which Force Was Used, by Month, for Jails Only

survey occurred in January 1994 to provide a baseline of officer knowledge and attitudes before the nonlethal weapons were introduced. The second survey was conducted in January 1995 to provide interim information at a time when only the supervisors had been trained in, and were using, the nonlethal weapons. The final survey was delayed as long as possible to allow all detention officers and supervisors to gain as much experience and familiarity with the nonlethal weapons as possible and to distance our survey from the ongoing investigation by the U.S. Department of Justice. This third survey was conducted in July 1996.

Each survey was conducted with the assistance of the Sheriff's Office. The questionnaire and an explanatory cover letter were placed in unmarked envelops to assure anonymity and were distributed to, and collected from, each detention officer and supervisor by the Shift Commander. The response rate, or the percentage of officers surveyed who returned a useable questionnaire, was 71.6 percent, 75.0 percent, and 79.9 percent in the 1994, 1995 and 1996 surveys, respectively. The distribution of respondents by

Table 2. Data Sources Used in the Evaluation

	Facility							
	Estrella	In Tents	1st Ave.	Towers	Durango	Madison	Intake	TOTAL
Survey Sample								
January 1994	86	39	32	78	93	134	77	539[a]
January 1995	73	48	32	81	50	216	73	573[b]
January 1996	84	66	38	67	80	208	67	610[c]
Interview Sample	29	33	9	36	13	41	0	161
Reported Altercations								
Number of Incidents	184	227	29	256	122	369	1,808	2,995
Number of Inmates Involved	230	242	33	315	135	415	1,880	3,250

[a]A total of 661 useable surveys were returned in 1994, including 103 surveys from Security Transport and 19 surveys from the Psychiatric Unit. Overall, 71.6 percent of all surveyed officers returned a useable survey.

[b]A total of 651 useable surveys were returned in 1995, including 14 from the Psychiatric Unit and 64 from Security Transport. Overall, 75.0 percent of all surveyed officers returned a useable survey.

[c]A total of 617 useable surveys were returned in 1996, including 7 from the Psychiatric Unit. Overall, 79.9 percent of all officers surveyed returned a useable survey.

detention facility is presented in Table 2, and a description of the socioeconomic characteristics of the responding officers is presented in Appendix B, Table 1.

A third source of evaluative data is an interview conducted with a sample of officers shortly after the reported incidents. As is evident in Table 2, a total of 161 interviews were conducted with officers working in the jail facilities (but not at Intake) between October 1 and December 31, 1995. Although the federal investigation was ongoing, only one officer refused our request for an interview. The officers interviewed were very cooperative and forthcoming, due largely to the fact that this research project and its staff had already established its independence and credibility over the previous eighteen months. These interviews were designed to obtain more detailed information than was available on the Altercation Form about the incident, the officer's decision regarding the use of nonlethal weapons, and the observed effectiveness of the weapons when used.

Finally, the evaluation relies on existing institutional records to observe changes over time in the number and type of disciplinary infractions by inmates and in the number and type of grievances filed by inmates against officers.

Defining Use of Force

The focus of this research is on those incidents in which force is used by detention officers or supervisors against inmates. For evaluation purposes, the analysis focuses on three types of force: pepper spray, stun device and the conventional hands-on tactics. There also are three levels of force; each type of force may be displayed, threatened or applied. The evaluation presumes that more than one type of force may be used in any incident and that the level of force used may vary across types of force used. For example, it is possible in any one incident of the use of force that both a stun device was threatened and hands-on tactics were applied, or that both the stun device and hands-on tactics were applied.

In the analysis which follows, "use of force" does not refer solely to those incidents in which force was actually applied to the inmate. Instead, the term *"use of force" refers to any incident in which one or more types of force (i.e., stun device, pepper spray, or hands-on tactics) were employed at one or more levels (i.e., displayed, threatened, applied).*

A Final Note on the Evaluation: What It Is Not

The focus of the evaluation is on use of force incidents and the effectiveness of nonlethal weapons as an alternative to traditional hands-on tactics in these situations. The analysis examines the weapons' usefulness and effectiveness in custody facilities and their impact on measures of control and safety. This evaluation examines reported incidents in which force was used, but the evaluation does not attempt to address questions pertaining to whether the use of force in any particular situation is appropriate or inappropriate. Neither the evaluators nor the evaluation data are sufficiently informed to permit an assessment of whether the use of force conforms to the established policies and guidelines. Instead, we focus our analysis on whether the use of nonlethal weapons achieved the desired outcomes of more effectively controlling inmates while also reducing injuries to officers and inmates.

Chapter 2

The Adoption of Nonlethal Weapons

Nonlethal weapons were not readily accepted by either the supervisory officers or the detention officers. Similar to the concerns raised by their Commanders, many officers felt that nonlethal weapons had limited utility; officers preferred the established practice of "soft" or "hard" hands-on tactics. These early concerns among officers diminished with training and with experience in using the nonlethal weapons, however, and the weapons became widely accepted by the end of the two-year study. The process by which the nonlethal weapons were adopted by officers and supervisors throughout the six jails and Intake is illustrated by the changing nature of support for and use of the nonlethal weapons over the study period.

Resistance to Change

Survey results indicate that, at the beginning, detention officers and their supervisors had serious reservations about bringing nonlethal weapons into the detention facilities. In response to the first survey, in January 1994, the officers expressed strong doubts that there was a need or a use for these weapons in their custody facility. At this time, few officers except those working the In-Tents facility had been trained and equipped with the weapons. There was a marked change in the officers' expressed opinions regarding the weapons' usefulness in their facilities the following year, however, especially among those who had been trained already. By 1996, when all officers had been trained with the weapons and had been armed with the weapons for at least a year, there was a consensus among officers that the weapons play a useful role in their facilities.

Initial Resistance to Nonlethal Weapons

The survey results presented in Tables 3, 4 and 5 document this shift in attitudes among the officers surveyed. In January 1994, only 16 percent of the officers had been trained in the use of pepper spray, and only about nine percent carried it while on duty. Similarly, only 18 percent of the officers had received training in the use of the stun device, and fewer than nine percent were armed with it. While 70 percent or more of the officers surveyed believed that the availability of nonlethal weapons would affect the amount of inmate misconduct, make inmates easier to control and reduce injuries to both inmates and officers, it is noteworthy that 41 percent of these officers felt that the stun device

Table 3. Trained or Untrained Officer Attitudes Toward Nonlethal Weapons, Prior to and After Introduction

	1994	1995		1995		1996
	Before Introduction of Nonlethal Weapons N=661	Officers Not Yet Trained With Pepper Spray N=154	Officers Already Trained With Pepper Spray N=487	Officers Not Yet Trained With Stun Device N=159	Officers Already Trained With Stun Device N=470	After Introduction of Nonlethal Weapons N=610
% Agree, Pepper Spray Needed:						
a) Rarely or Never	61.0	66.4	51.1	n/a	n/a	46.0
b) Frequently or Always	39.0	33.5	48.8	n/a	n/a	54.0
% Agree, Stun Device Needed:						
a) Rarely or Never	41.0	n/a	n/a	66.0	51.1	42.7
b) Frequently or Always	59.0	n/a	n/a	34.0	48.8	57.3
% Agree, Nonlethal Weapon Will:						
a) affect inmate misconduct	69.7	64.9	78.2	65.4	78.4	67.1
b) make inmates easier to control	77.4	74.3	87.7	76.5	87.4	81.8
c) reduce injury to officers	83.1	76.5	88.1	76.0	88.1	85.3
d) reduce injury to inmates	74.5	70.1	81.4	69.3	81.8	85.2

was rarely or seldom needed and that fully 61 percent stated that the pepper spray was rarely or seldom needed. This level of receptivity did vary across the facilities, however, as illustrated in Table 4.

When asked to list what they foresee as the advantages and disadvantages of nonlethal weapons, the officers provided a range of responses which is summarized in Table 5. Some (15.7 and 4.8 percent, respectively) indicated they knew of no advantages to the use of pepper spray or the stun device. In general, those officers finding advantages mentioned a reduction in injuries and a more effective means of control. Some officers also indicated they knew of no disadvantages to the availability of the pepper spray (8.0 percent) or the stun device (18.3 percent), but other officers reported some concerns. One of the most frequently reported concerns was that the weapons would be taken away from the officer and used by an inmate against an officer; relatedly, there was a large concern, especially with pepper spray, that officers would be affected by its use. A concern with contaminating other areas and other inmates also was stated by many officers. Finally, it is interesting to note that there was some concern that the pepper spray (14.1 percent) and the stun (17.7 percent) may be misused by officers.

Growing Acceptance of Nonlethal Weapons

By the time of the second survey, in January 1995, more than half the officers had been trained and equipped with the weapons and all of the officers had been able to observe the use of these weapons within their facilities. Specifically, all officers at In-Tents, Intake and Madison had completed their

Table 4. Officer Attitudes to Nonlethal Weapons, by Facility, 1994, 1995, 1996

	Estrella			First Avenue			Towers			Durango			Madison			Tents			Intake		
	1994 N=86	1995 N=73	1996 N=84	1994 N=32	1995 N=32	1996 N=38	1994 N=78	1995 N=81	1996 N=67	1994 N=93	1995 N=50	1996 N=80	1994 N=134	1995 N=216	1996 N=208	1994 N=39	1995 N=48	1996 N=66	1994 N=77	1995 N=73	1996 N=67
% now carry pepper spray	12.8	13.9	100.0	0.0	21.9	100.0	1.3	10.1	100.0	0.0	14.0	100.0	0.7	93.5	100.0	89.8	95.8	100.0	1.3	91.8	100.0
% now carry stun	12.8	13.9	100.0	0.0	34.4	100.0	0.0	10.1	100.0	0.0	20.0	100.0	0.0	95.3	100.0	87.2	95.8	100.0	1.3	84.9	100.0
% trained to use pepper spray	17.3	26.3	100.0	6.5	96.8	100.0	13.3	36.7	100.0	6.2	25.5	100.0	7.0	97.7	100.0	97.4	98.0	100.0	6.6	98.6	100.0
% trained to use stun device	17.6	28.8	100.0	9.4	96.9	100.0	12.0	34.6	100.0	3.3	33.4	100.0	18.0	98.6	100.0	92.1	95.8	100.0	9.8	97.7	100.0
% who have used stun or spray	8.1	8.2	36.1	0.0	9.4	30.6	3.9	16.0	38.5	6.5	12.2	27.5	3.7	14.4	42.5	30.8	66.7	72.7	3.9	37.5	61.5
% agree nonlethal weapon will:																					
a) affect amount of inmate misconduct	71.1	78.1	68.7	77.4	75.0	72.2	70.1	71.4	51.5	66.3	62.5	72.2	70.8	73.0	67.2	92.3	95.7	86.2	54.2	78.9	52.3
b) make inmates easier to control	79.5	83.1	81.9	90.3	87.1	85.7	73.7	79.5	80.0	74.4	79.2	83.8	75.4	81.1	81.0	100.0	95.8	92.1	68.1	91.4	71.6
c) reduce injuries to officers	88.9	87.7	86.6	87.5	83.9	76.5	87.0	80.5	81.8	84.3	73.5	89.9	78.5	84.4	86.9	97.4	93.8	93.8	69.4	90.1	72.3
d) reduce injuries to inmates	87.5	83.1	88.8	79.3	79.3	82.4	72.0	71.1	80.3	70.5	59.6	89.7	69.8	75.4	86.1	94.9	93.8	98.4	62.5	88.4	66.2
% agree pepperspray needed:																					
a) Rarely or seldom	53.0	47.2	58.0	64.5	90.7	67.6	72.9	75.0	52.3	58.1	63.3	48.8	66.7	42.0	41.7	12.4	6.3	20.0	76.8	91.3	49.2
b) Frequently or always	47.0	52.7	42.0	35.5	9.4	32.3	27.1	25.0	47.7	41.9	36.8	51.3	33.3	58.0	58.4	87.6	93.8	80.0	23.2	8.7	50.7
% agree stun device needed:																					
a) Rarely or seldom	54.7	42.3	62.2	61.3	71.9	65.7	66.2	51.3	43.6	55.1	51.0	53.2	42.3	27.5	36.4	7.7	8.4	24.6	60.3	7.0	30.3
b) Frequently or always	45.3	57.7	37.8	38.7	28.2	34.3	33.8	48.7	56.5	44.9	49.0	46.8	53.7	72.5	63.6	92.3	91.7	75.4	39.7	93.1	69.7

training while the other four jails were in the process of training and arming their officers. The results of the second survey of officers indicate a growing acceptance of the nonlethal weapons (see, especially, the differences at both Intake and Madison as reported in Table 4). The findings presented in Tables 4 and 5 illustrate that, compared to those responding in 1994, the officers surveyed in 1995 were more likely to agree with the statement that these weapons were frequently or always needed. Moreover, the results of the 1995 survey indicate the importance of the nonlethal weapons training. Those who had been trained and equipped, compared to those who had not yet been trained and equipped, believed there was a greater need for the weapons. They also were more likely to agree that the weapons would affect the amount of inmate misconduct, make it easier to control inmates, and reduce injury to inmates and officers.

When asked to list any advantages and any disadvantages to the use of nonlethal weapons, those who had been trained and equipped were more likely than the other officers to see advantages to the weapons and less likely to see disadvantages to the weapons. Trained and equipped officers

Table 5. Perceived Advantages and Disadvantages of Nonlethal Weapons for Untrained and Trained Officers

	1994—Before Introduction of Nonlethal Weapons		1995—Pepperspray		1995—Stun Device	
Advantages of Nonlethal Weapons:	Pepper Spray N=661	Stun Device N=661	Officers Not Yet Trained with Pepper Spray N=154	Officers Already Trained Pepper Spray N=487	Officers Not Yet Trained with Stun Device N=159	Officers Already Trained with Stun Device N=470
None	15.7	4.8	21.4	14.2	8.8	1.7
Unknown/don't know	7.6	8.2	2.6	1.4	3.8	1.9
Little/few			1.3	0.6	1.9	1.1
Reduce harm to inmates	8.2	11.2	1.9	7.2	4.4	9.6
Reduce harm to officers	12.7	19.2	5.2	9.9	6.9	13.6
Deterrent effect	16.6	24.7	7.1	13.3	10.1	23.2
Effective for control	24.2	29.0	20.1	22.8	26.4	31.5
Effective with groups	8.0		5.8	9.7		
Avoids physical contact	15.1		6.5	15.2		
Faster/better control	9.5	11.3	7.1	7.2	11.3	12.8
Effective one-on-one		4.4			1.3	2.3
Effective in contact situation		3.6			1.3	1.1
Effective in closed quarters		2.7			1.9	0.9
No contamination						0.9
Other	6.5	8.6	2.6	4.1	1.3	4.7
No response provided	12.3	13.8	30.0	18.3	33.3	18.9
Disadvantages of Nonlethal Weapons:						
None	8.0	18.3	7.1	7.6	22.0	30.0
Unknown/don't know	5.7	9.8	1.9	1.8	3.6	2.8
Abuse by officer			1.9	0.2	2.5	2.1
Misuse by officer	14.1	17.7	6.5	5.3	10.1	8.9
Harmful to some inmates	0.8	0.8			0.6	0.2
Ineffective with some inmates	1.1	1.8		1.4	5.0	7.0
Use against officer	19.4	25.7	4.5	8.2	9.4	12.1
Affect other officers	31.3	4.5	32.5	34.7	1.9	2.6
Affect other inmates	12.0	0.8	16.2	14.6	1.3	0.4
Contaminates area	19.8		15.6	31.4		
Useless in physical contact				0.2		
Accessibility to officers	3.5	4.8	1.3	1.2	2.5	1.9
Decontamination			0.6	2.9		
Legality/lawsuits		2.0				0.4
Requires close physical contact		2.9			4.4	11.7
Requires some distance from inmate	2.9					
Other	8.5	7.5	4.5	2.7	5.0	5.3
No response provided	13.0	16.2	33.1	18.5	37.7	23.0

Table 6. Officer Attitudes to Nonlethal Weapons, by Prior Use, 1996

	Officers who have used nonlethal weapons		Officers who have *not* used nonlethal weapons	
	%	N[a]=271	%	N[a]=340
% agree pepper spray needed:				
a) rarely or never	31.0	83	51.0	169
b) frequently or always	69.0	185	48.9	162
% agree stun device needed:				
a) rarely or never	37.7	100	52.3	173
b) frequently or always	62.3	165	47.7	158
% agree nonlethal weapon will:				
a) affect inmate misconduct	71.7	194	63.9	217
b) make inmates easier to control	84.9	230	79.2	269
c) reduce injuries to officers	85.3	231	85.0	289
d) reduce injuries to inmates	87.9	238	83.1	283

[a]Actual number of cases may vary slightly due to missing data.

were more likely to see pepper spray as having a deterrent effect, as causing less harm than hands-on force to inmates and officers, as being effective with groups, and as a means of avoiding physical contact with inmates. For the stun device, the perceived advantages were less harm to officers and inmates and a deterrent effect. The major disadvantages of the pepper spray are seen by officers to be that it contaminates the area and may affect other officers. The major disadvantages of the stun are a fear that it may be taken from and used against the officer and that it requires close physical contact with the inmate.

The Acceptance of Nonlethal Weapons

Familiarity with Nonlethal Weapons

By July 1996, when officers were surveyed for the third time, all the officers had been trained and equipped with the weapons for more than twelve months. As reported in Tables 3 and 4, 43.9 percent of the surveyed officers report they had, by this time, used one or both of the nonlethal weapons (double the 20.7 percent who reportedly had used the weapons when surveyed eighteen months earlier). This increased familiarity with the weapons did not diminish the officers' stated support for the weapons as a means to control inmates or reduce injuries to both inmates and officers. Interestingly, there is a decrease in the officers' belief that the availability of these weapons will affect the amount of inmate conduct; perhaps this is a realization that the weapons are better able to control situations which may arise than to prevent the situation from arising in the first place.

This third survey also reveals little change in the officers' belief that the weapons are needed in the facilities, again suggesting that, at least for about half of the officers, their experiences lead them to find some utility in having these weapons available. In fact, when the responses to these questions by the 271 officers who have used the nonlethal weapon are compared to the responses

from the 340 officers who have not, as presented in Table 6, it is apparent that those who have used the weapons have significantly more favorable attitudes about their utility within detention facilities. Forty-nine percent of the officers who have not used nonlethal weapons, compared to 69 percent of the officers who have used nonlethal weapons, believe pepper spray is "frequently or always" needed. Similarly, the stun device is reported to be frequently or always needed by 48 percent of the officers who had not used the weapons previously and 62 percent of the officers who had used nonlethal weapons.

Nonlethal Weapon Use as a Measure of Acceptance

In addition to the survey responses obtained from officers, another measure of the acceptance of the nonlethal weapons is the extent to which officers use them. As the officers are trained and equipped with the weapons, officer acceptance of the weapons should be reflected in an increased frequency of nonlethal weapons use over time. The frequency with which nonlethal weapons were used during the two-year evaluation period is illustrated in Figure 4.

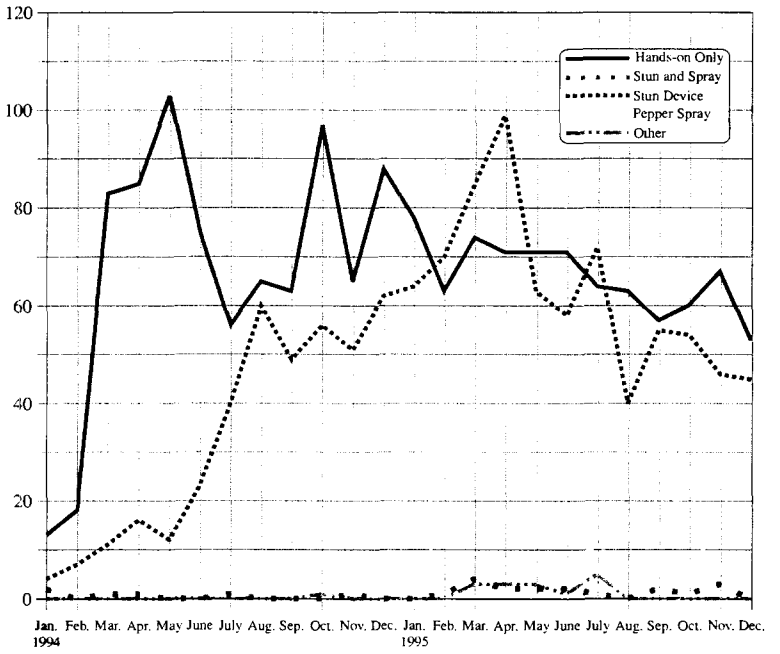


Figure 4. Frequency of Use of Force, by Type, by Month, for All Facilities

These data reveal that hands-on tactics were the dominant type of force used in January 1994 and nearly every month thereafter. Use of the stun device began slowly during the first five months, but then increased rather dramatically after June 1994. By February 1995, the stun device was being used more often then hands-on tactics; by August 1995, however, when the U.S. Department of Justice investigation began, the number of uses of the stun device had decreased substantially and was again second in frequency to hands-on tactics. Pepper spray was adopted more slowly than the stun device, but its use also peaked in May 1995 and then dropped off substantially.

Similar analyses are presented in Figures 5 and 6, which represent the frequencies with which each type of force was used in Intake and in Jail Facilities, respectively. The pepper spray was used very rarely at Intake (against only four inmates during the two-year observation period). However, the stun device was readily adopted in Intake and became a type of force used nearly as often as hands-on tactics—at least until August 1995. At the jail facilities, the stun device was adopted more quickly than the pepper spray, but both were used as often as hands-on tactics by April 1995—when all officers in all facilities had been trained and equipped with the nonlethal weapons. The distribution of type of force used by month is reported separately for each jail facility in Figures 1 through 6 in Appendix B.

In sum, the patterns of nonlethal weapon use depicted in Figures 4 through 6 indicate that the weapons were widely adopted and used. The observed pattern of a gradual increase in the frequency of their use coincides with the timetable by which officers were trained and equipped with these weapons over the first fifteen months of the evaluation period. Although the total frequency of use varied by facility (see Figures 1–6, Appendix B), it is evident that the officers accepted and used nonlethal weapons nearly as often as hands-on tactics.

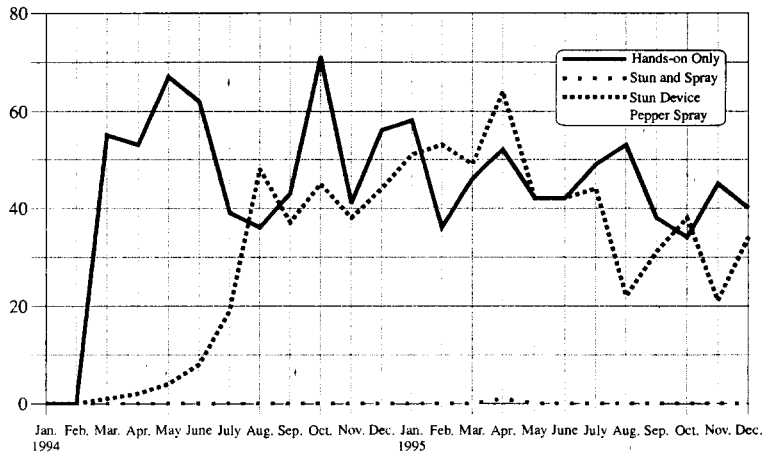


Figure 5. Frequency of Use of Force, by Type, by Month, for Intake Only

Further, it appears that the increased use of nonlethal weapons coincided with a decrease in the use of hands-on tactics, suggesting that the weapons often were a substitute for, rather than merely a supplement to, hands-on tactics. This finding is explored further by an analysis of the change over time in the proportion of all cases which involved each type of force. As presented in Figure 7, hands-on tactics accounted for more than 75 percent of all incidents of force until July 1994, at which point hands-on tactics represented only about 50 percent of all types of force used; by February 1995, hands-on tactics began to dip again and represented only 40 percent of all incidents until August 1995, when hands-on again moved up to account for about 50 percent of all use of force incidents during each of the remaining months.

This decrease over time in the use of hands-on tactics is explained by the increase over time in the use of the stun device and, to a much lesser extent, the pepper spray. By July 1994, 40 percent of all incidents involved a stun device, and this proportion of stun device use slowly peaked at 51.8 percent in April 1995 before immediately returning to the low 40 percent range again. Pepper spray was more slowly adopted, reaching its peak in May 1995 when its 17 uses accounted for 11 percent of all use of force incidents that month. After that, pepper spray was used to resolve between 6 and 10 percent of the altercations arising per month.

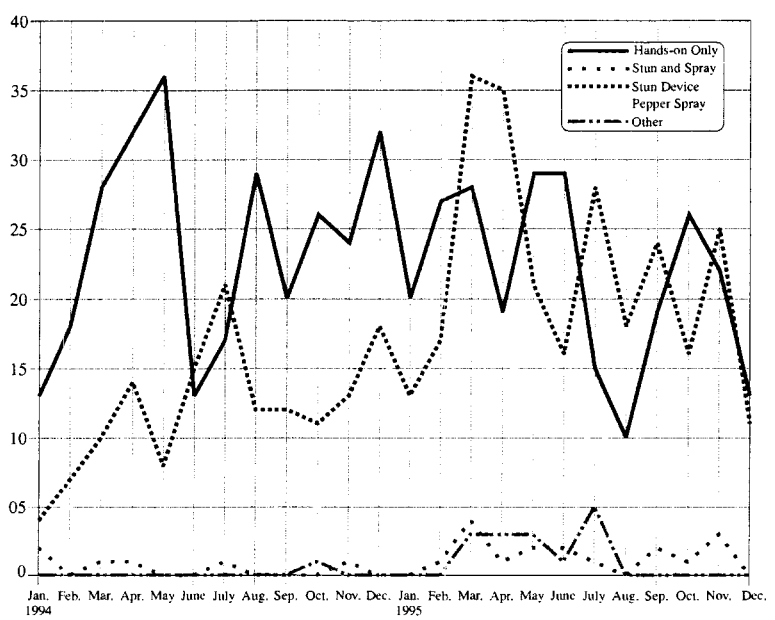


Figure 6. Frequency of Use of Force, by Type, by Month, for Jails Only

In Figures 8 and 9, which provide the analyses separately for Intake and for Jail Facilities, respectively, different patterns are evident. At Intake, pepper spray was a negligible factor and the stun device was quickly adopted. By July 1994, the stun device was used in one-third of all altercations. The next month, it was used in 57.1

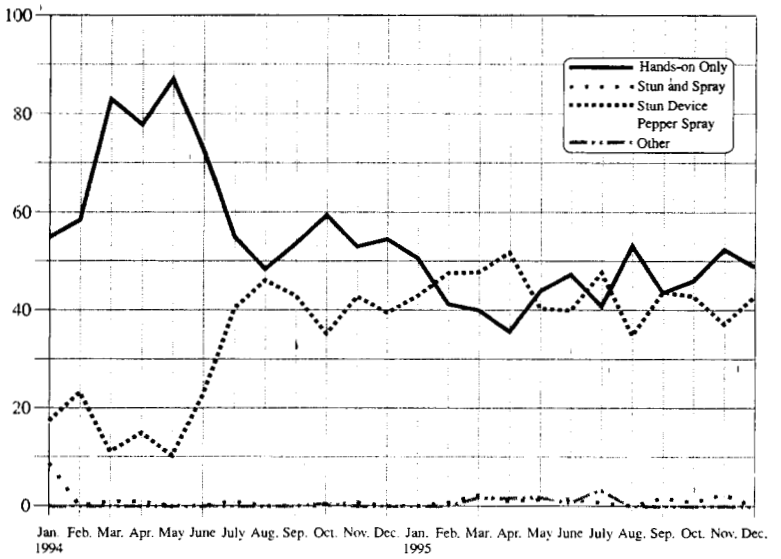


Figure 7. Percentage of Use of Force, by Type, by Month, for All Facilities

percent of the altercations which occurred. The stun device was used in about 40 to 45 percent of all altercations at Intake between September 1994 and February 1995, after which it was used in about 50 percent of all altercations until August 1995.

A different pattern emerges from Figure 9, where the staggered calendar by which the officers at the six jails were trained and equipped should be reflected in a slow and steady reliance on the nonlethal weapons. The stun device was adopted rather quickly, and it was used in nearly half of all altercations in jail facilities in June and July 1994 before declining in proportional usage for the remainder of the 24-month period. The officers' use of the pepper spray increased slowly throughout the first year—perhaps due to the early concerns about its use within confined jail facilities—but was the type of force used in more than 15 percent of all altercations by the end of the first year. In the second year, the proportionate use of pepper spray continued to increase, reaching a high point in August 1995 when it was used in 30 percent of all jail altercations.

The data summarized in Figures 4 through 9 suggest that the nonlethal weapons, especially the stun device, were readily adopted by the officers within both the Intake facility and the jail facilities. Although the stun device often was used in conjunction with hands-on tactics, it is evident from these data that the stun and the pepper spray were used often. That is, the stun device became a supplement to hands-on tactics, and both the stun device and the pepper spray became a substitute for "hands-on only" tactics. The frequency with which these weapons were used, and the degree to which their use accounted for an increased proportion of the way altercations were resolved, indicates that the nonlethal weapons were widely adopted.

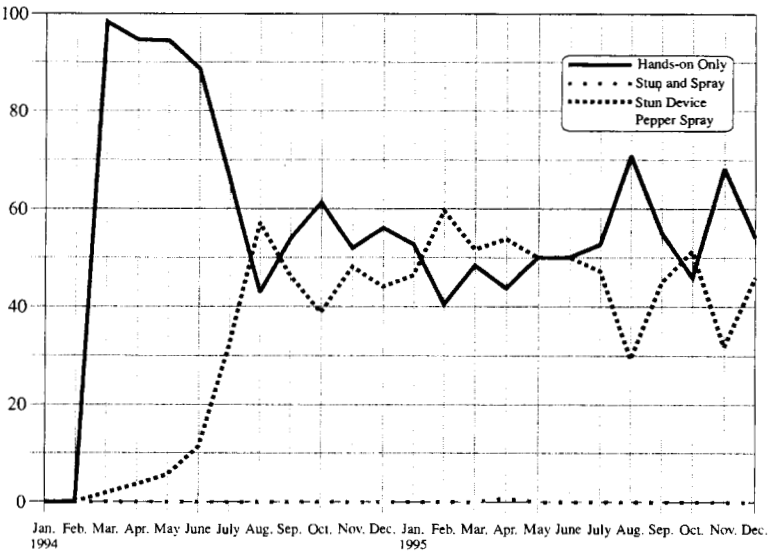


Figure 8. Percentage of Use of Force, by Type, by Month, for Intake Only

Command Staff Support for Nonlethal Weapons

As indicated above, Commanders at each of the facilities raised initial concerns regarding the use of nonlethal weapons. Many felt that such weapons were not needed in their facilities. They also believed that such weapons might be misused by officers or used by inmates against officers. Finally, there was a concern that the use of pepper spray would contaminate a much wider area of the enclosed jail facilities.

Follow-up interviews conducted with each Commander in July 1996 raised these initial observations and sought the Commanders' current opinions in light of their experiences with the nonlethal weapons during the past two and a half years. All of the Commanders strongly supported the presence and use of both nonlethal weapons by detention officers. Pepper foam, rather than spray, was preferred in Intake, where most inmates are confined in large holding cells, and in certain locations within jail facilities (such as the property room or the medical facility), but pepper spray or foam was unanimously endorsed, as was the stun device.

During the previous 30 months, there had been only one reported case in which a nonlethal weapon was taken by an inmate from an officer and used against that officer. In this instance, the officer was carrying the cannister of pepper spray inside the waistband, rather than on the belt as appropriate, and the backup officers, who were wearing masks, easily overpowered the inmate. During this same period, there was one episode of pepper spray contamination; its use in a hallway within the Madison Street Jail resulted in a contamination of an adjacent section of the jail. Finally, there were few reported instances in which a nonlethal weapon was misused or was used to abuse an inmate, and disciplinary action was taken against the officer in each known case. These events tended to occur early, in part a reflection of the novelty of the weapons at that time.

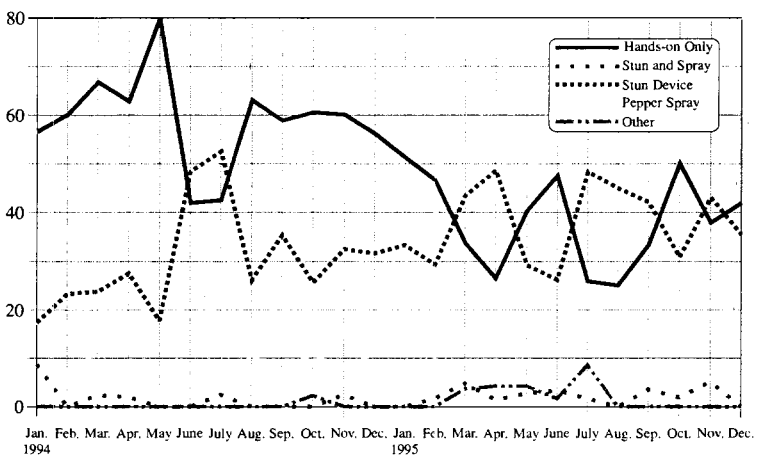


Figure 9. Percentage of Use of Force, by Type, by Month, for Jails Only

These same Commanders reflected on the wisdom of distributing the nonlethal weapons to all officers. In January 1994, they voiced a strong preference that the weapons be distributed to only supervisory officers. In July 1996, these same Commanders stated that they were very satisfied with the many outcomes produced by the widespread presence of nonlethal weapons and that they now believe all detention officers, not solely supervisors, should be trained and equipped with the nonlethal weapons. As one Commander stated: "Detention Officers are on the front line. If they need nonlethal weapons, they should have them. Supervisors aren't around when needed, and its over by the time they arrive. It would be a big morale problem if nonlethal weapons were taken away now."

Summary of Findings

When first introduced into the detention facilities, nonlethal weapons received only limited support among command staff, supervisors and detention officers. Although there was agreement that the nonlethal weapons would reduce injuries and make inmates easier to control, there was little agreement that such devices were needed. Command staff were concerned about the misuse of the weapons, especially if distributed to all detention officers, and the possibility that the discharge of pepper spray within the facilities would affect officers and inmate bystanders and would contaminate other areas of the facility. Similar concerns were voiced by the officers, who also feared that the weapons would be taken from officers and used by inmates against officers.

With training and experience in the use of the nonlethal weapons, commanders, supervisors and detention officers increasingly supported the use of both the stun device and the pepper spray within the jail and Intake facilities. The acceptance of these nonlethal weapons is apparent in various forms. One is the strong endorsement of both weapons by officers responding to the final survey. More than a year after all officers had been trained and equipped with both the spray device and the pepper spray, more than half the surveyed officers indicated that the nonlethal weapons were needed and more than eighty percent agreed that the nonlethal weapons reduce injuries to officers and inmates and make inmates easier to control. A second indicator of acceptance is the finding that the weapons were increasingly used by officers during the observation period. There was a steady increase over time in both the monthly frequency of nonlethal weapon use and the proportion of all incidents in which nonlethal weapons were used rather than hands-on tactics. Finally, interviews with commanders at the end of the study period revealed unanimous support for retaining both weapons, for both supervisors and detention officers, in all jail facilities.

Chapter 3

Nonlethal Weapons and the Use of Force

This chapter describes the characteristics of those incidents in which force was used. Further, it examines both the type of force and the level of force used in these situations. Finally, it presents an analysis of the relationship between the type of situation in which force was used and the type and level of force that was used in those situations.

Characteristics of Use of Force Incidents

During the two-year period of study, there were a total of 2,995 reported incidents in which a detention officer or supervisor used force against an inmate. About 10 percent of these incidents involved more than one inmate, so force was used against a total of 3,250 inmates. Figures 10 through 12 and Table 7 provide descriptive information regarding the characteristics of the original incident to which the officer or supervisor responded with the use of force.

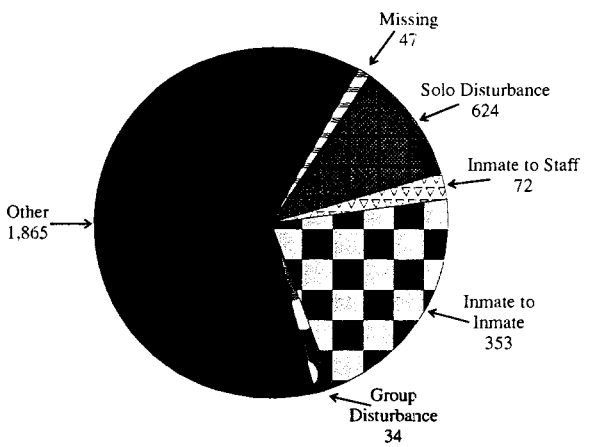


Figure 10. Type of Incidents in Which Force Was Used, by Frequency, for All Facilities

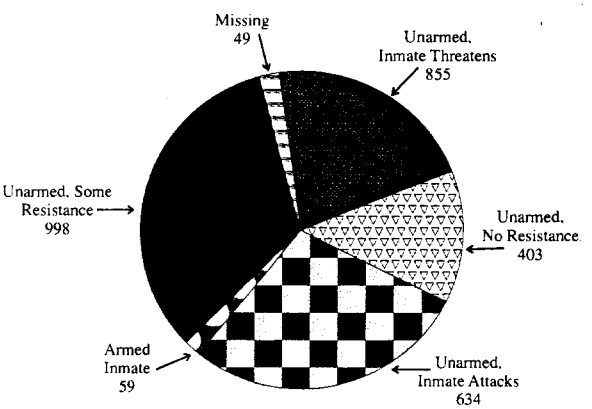


Figure 11. Level of Resistance in Use of Force Incidents, by Frequency, for All Facilities

The Nature of the Incidents that Precede the Use of Force

Slightly more than three of every five reported incidents involved an inmate-to-officer confrontation, and this was consistent across locations. Solo inmate disturbances were much more likely to occur at Intake than among the jails, but inmate-to-inmate confrontations were much more likely to occur among the jails than at Intake. There were very few group disturbances reported during this period.

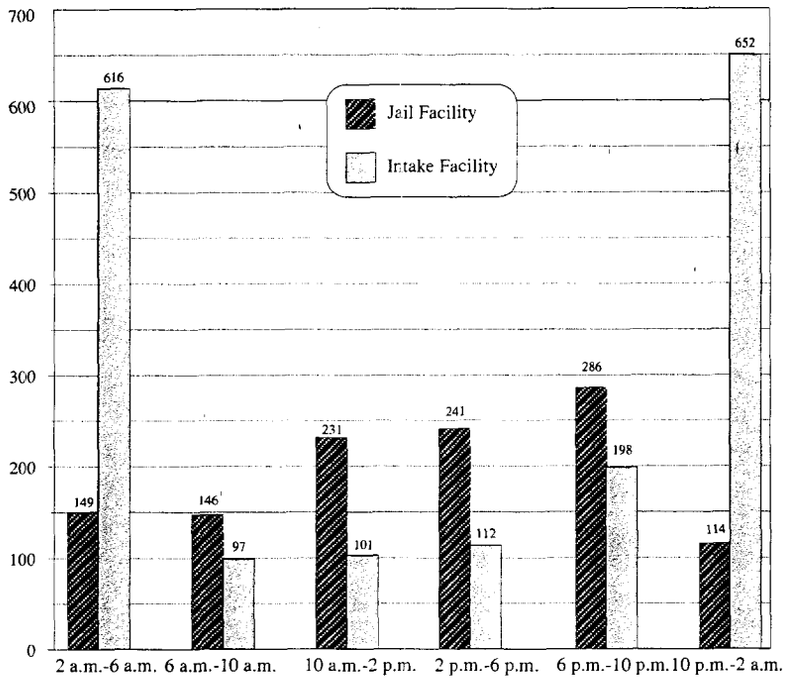


Figure 12. Distribution of Use of Force Incidents, by Time, at Jail Facilities and at Intake

Most of the incidents (78 percent) involved an inmate's refusal to comply with direct commands by an officer. Shouting or yelling occurred in 45 percent of all incidents, and even fewer incidents involved shoving or pushing (25 percent) or hitting/kicking/wrestling (35 percent). Weapon use was extremely rare.

It is very unlikely that the officer was harmed during the original incident. Only 6.1 percent of the officers reportedly were injured, and only about half of them sought and received any form of medical attention. Inmates were somewhat more likely to have sustained an injury in the original incident, and to have received medical treatment for that injury. Indeed, nearly one-fourth of the incidents involved some reported injury to an inmate, with nearly half of those inmates receiving medical attention.

Finally, it is apparent in Table 7 that the officers who responded to the initial incident encountered some form of unarmed resistance. Whereas fewer than 15 percent indicate that the inmate offered no resistance to the officer's presence, more than 20 percent report they were actually attacked by the inmate.

Type and Level of Force Used in Response to Reported Incidents

Table 8 provides a summary of the type and level of force used in controlling the 3,250 inmates reported to be involved in these 2,995 incidents. Pepper spray was used 247 times, which represents only 7.6 percent of all occasions in which force was used. The stun device was used much more often, with 1,163 uses during the two years. The stun device was somewhat more likely to be used in incidents in Intake (39.8 percent) than in jails (31.6 percent). Pepper spray (or foam) was rarely used in Intake. In jails, the stun device was used nearly twice as often as the pepper spray (31.6 percent vs. 17.4 percent, respectively). The use of both stun and spray occurred just 29 times, and all but one of those occasions occurred in the jails.

Table 7. Characteristics of Altercation Incidents

	Total (N=2,995)		Intake (N=1,808)		Jails (N=1,187)	
	N	%	N	%	N	%
Type of Incident						
Solo inmate disturbance	624	20.8	447	24.7	177	14.9
Inmate to inmate	353	11.8	161	8.9	192	16.2
Inmate to staff	1,865	62.3	1,122	62.1	743	62.6
Group disturbance	34	1.1	7	0.4	27	2.3
Other	72	2.4	39	2.3	31	2.7
Missing	47	1.6	31	1.7	16	1.3
Number of Inmates Involved in Incident						
One	2,700	90.2	1,719	95.1	981	82.6
Two	258	8.6	82	4.5	176	14.8
Three or more	37	1.0	7	0.5	10	2.7
Severity of Incident[a]						
Refusing to comply	2,320	77.5	1,416	78.3	904	76.2
Shouting or yelling	1,338	44.7	789	43.6	549	46.3
Shoving or pushing	736	24.6	445	24.6	291	24.5
Hitting/kicking/wrestling	1,056	35.3	599	33.1	457	38.5
Hit/slash/stab with weapon	33	1.1	18	1.0	15	1.3
Other	451	15.1	264	14.6	187	15.8
Location of Incident						
Cell	662	22.1	372	20.6	290	24.4
Hallway	467	15.6	319	17.6	148	12.5
Dayroom	438	14.6	0	0.0	432	36.4
Booking area	793	26.5	757	41.9	36	3.0
Other indoor area	528	17.6	346	19.1	182	15.3
Other outdoor area	95	3.5	0	0.0	89	8.3
Missing	2	0.1	2	0.1	0	0.0
Harm to Officer						
No visible injury	2,481	93.9	1,743	96.4	1,069	90.1
Complaint of pain	31	1.1	17	0.9	17	1.4
Minor injury, no first aid	62	2.1	25	1.4	37	3.1
First aid at medical facility	59	2.0	15	0.8	44	3.7
Treated by outside doctor/hospital	28	0.9	8	0.4	20	1.7
Harm to Inmate						
No visible injury	2,275	75.9	1,445	79.9	830	70.0
Complaint of pain	220	7.3	119	6.6	101	8.5
Minor injury, no first aid	219	7.3	144	8.0	75	6.3
First aid at medical facility	245	8.2	83	4.6	162	13.6
Treated by outside doctor/hospital	36	1.2	17	0.9	19	1.6
Level of Resistance to Staff						
Unarmed, no resistance	403	13.5	192	10.6	211	17.8
Unarmed, some resistance	998	33.3	640	35.4	358	30.2
Unarmed, threatened staff	855	28.5	535	29.6	320	27.0
Unarmed, attacked staff	634	21.2	397	22.0	237	20.0
Armed attack	59	1.9	15	0.8	44	3.7
Other	5	0.2	3	0.2	3	0.3
Missing	40	1.3	26	1.4	14	1.2

[a]Categories may not be mutually exclusive.

Table 8. Type and Level of Force Used

	Total		Intake		Jails	
	N	%	N	%	N	%
Type of Force Used						
Pepper Spray	247	7.6	7	0.4	236	17.4
Stun Device	1,163	35.8	749	39.8	432	31.6
Stun and Spray	29	0.9	1	0.1	28	2.1
Hands-on Only	1,742	53.6	1,115	59.3	627	45.8
Other/None	44	1.3	6	0.3	38	2.7
Missing	7	0.2	2	0.1	5	0.4
	3,250	100.0	1,880	100.0	1,370	100.0
How Pepper Spray Applied						
Display	57	20.7	0	0.0	57	21.2
Threaten	71	25.8	2	33.3	69	25.6
Use	147	53.5	4	66.7	143	53.2
	275	100.0	6	100.0	269	100.0
How Stun Device Applied						
Display	198	16.4	109	14.5	89	19.6
Threaten	127	10.5	17	0.2	110	24.2
Use	881	73.1	626	83.3	255	56.2
	1,206	100.0	752	100.0	454	100.0
Appropriate for Pepper Spray						
Yes	438	13.5	24	1.3	414	30.2
No	2,744	84.4	1,833	97.5	911	66.5
Not Applicable	18	0.6	2	0.1	16	1.2
Missing	50	1.5	21	1.1	29	2.1
	3,250	100.0	1,880	100.0	1,370	100.0
Appropriate for Stun Device						
Yes	1,690	52.0	932	49.6	758	55.3
No	1,489	45.8	927	49.3	562	41.0
Not Applicable	17	0.5	2	0.1	15	1.1
Missing	54	1.7	19	1.0	35	2.6
	3,250	100.0	1,880	100.0	1,370	100.0

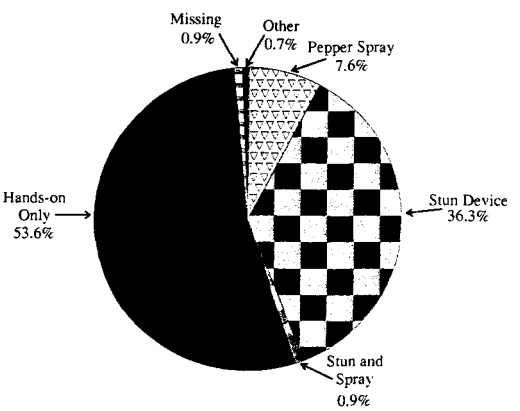


Figure 13. Distribution of Use of Force Incidents, in Percent, by Type of Force Used

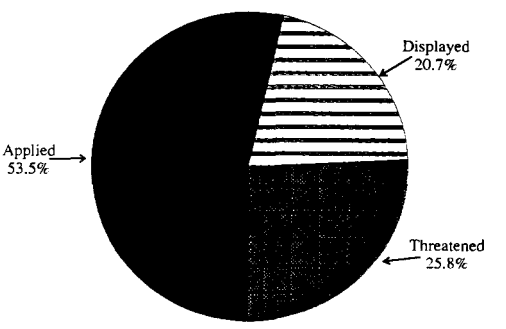


Figure 14. How Pepper Spray Was Used, by Percentage, for All Facilities

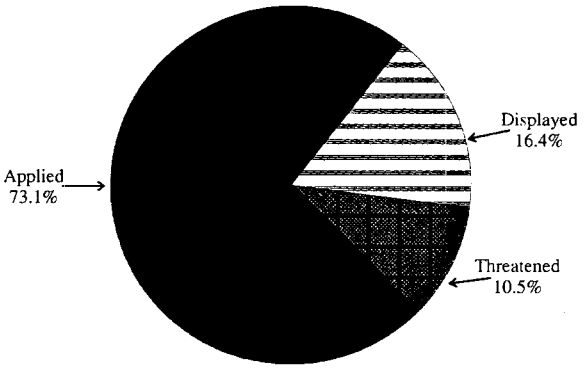


Figure 15. How Stun Device Was Used, by Percentage, for All Facilities

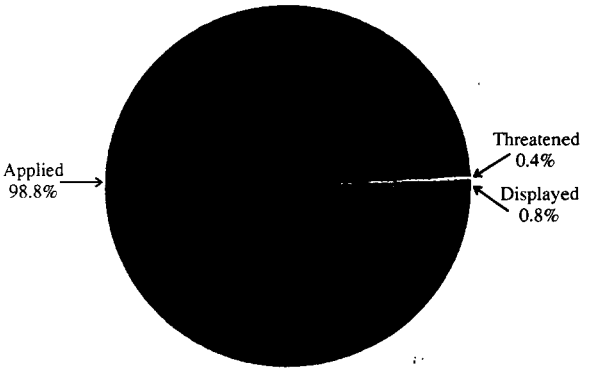


Figure 16. How Hands-on Tactics Were Used, by Percentage, for All Facilities

In those situations in which a nonlethal weapon was used, the weapon was more likely to be actually used, or applied, rather than simply displayed or threatened. In slightly over half of the uses of pepper spray and nearly three-fourths of the uses of the stun device, the weapon was actually applied to the inmate. Yet, it also is clear from Table 8 that the display or threat of the weapon frequently served as an effective means to terminate the situation. Of the 275 reported instances in which an officer used pepper spray, it was only necessary to display or threaten its use in about 45 percent of the cases (see Figure 14). The stun device was less likely to be displayed or threatened than applied, especially in Intake, but its display or threatened use was sufficient to resolve the situation in about one-quarter of all the situations in which it was used (see Figure 15). Not surprisingly, hands-on tactics were virtually never displayed or threatened (see Figure 16). The frequency with which the stun device and the pepper spray were displayed, threatened, and applied for each jail facility is presented in Figures 7 and 8 in Appendix B.

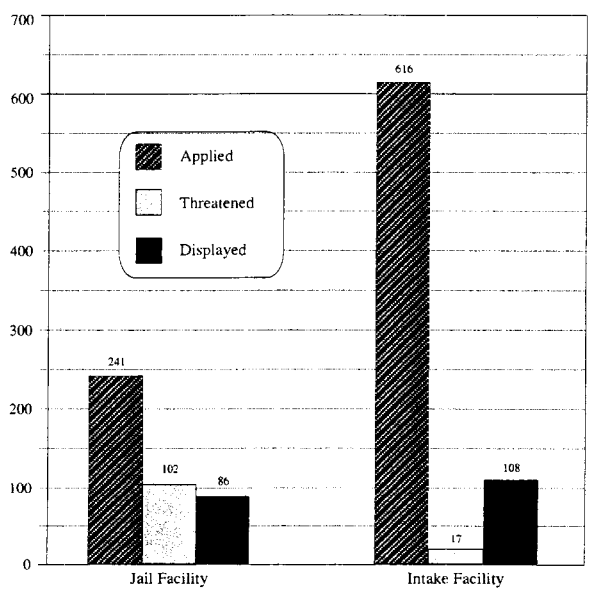


Figure 17. How Stun Device Was Used, by Type of Facility

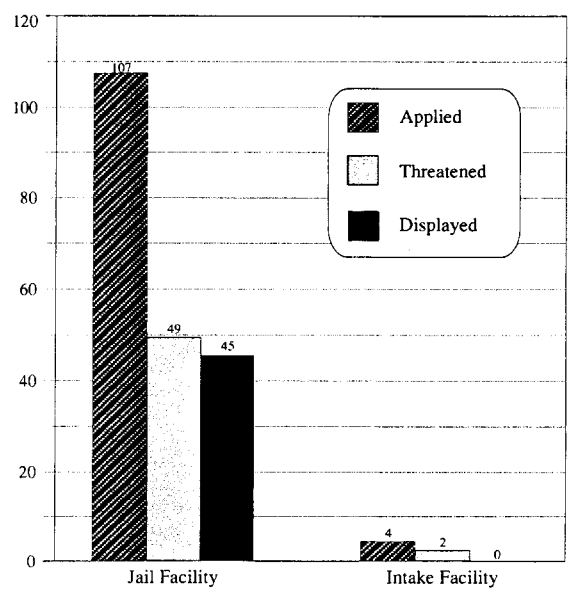


Figure 18. How Pepper Spray Was Used, by Type of Facility

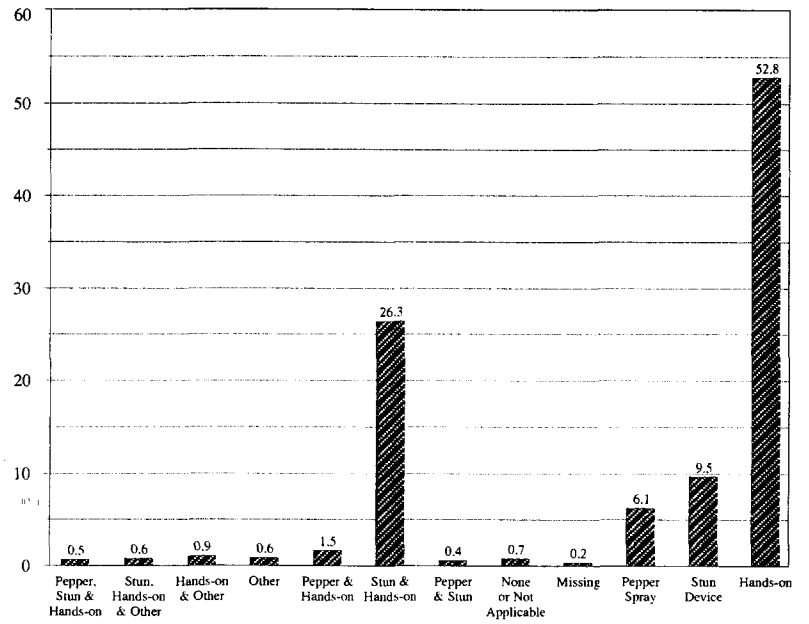


Figure 19. Distribution of Force Incidents, by Types of Force Used, for All Facilities, in Percent of Total

The use of only a hands-on tactic occurred in slightly over half of the total number of incidents, and a "hands-on only" response was somewhat more likely to be used in Intake than in jails. Of course, hands-on tactics often accompany the use of a nonlethal weapon. In fact, more than 75 percent of all reports of the use of a stun device, 20 percent of all reports of the use of pepper spray, and 59 percent of all reports of the use of both the stun device and the pepper spray also involved the use of hands-on tactics, as indicated in Figures 19 and 20.

Finally, the data summarized in Table 8 indicate that officers reported that the conditions of the situation were appropriate for the use of nonlethal weapons more often than these weapons actually were used. Whereas the pepper spray was used in a total of 8.5 percent of all situations with inmates, the reporting officers indicate that 13.5 percent of the situations were appropriate for the use of pepper spray. Similarly, the stun device was used in a total of 36.7 percent of the situations, yet a total of 52.0 percent of the situations were reported to be appropriate for its use.

The degree to which the nonlethal weapons were displayed or threatened rather than applied to resolve an altercation also can be examined monthly, as presented in Figures 21 and 22. The stun device, as illustrated in Figure 21, was consistently more likely to be applied than displayed and/or threatened. However, there is a trend in these data which indicates that, over time, the stun was increasingly more likely to be displayed or threatened than actually applied to the inmate. In July 1994, only 14 percent of all uses of the stun were either a display or a threat to use the stun, and the

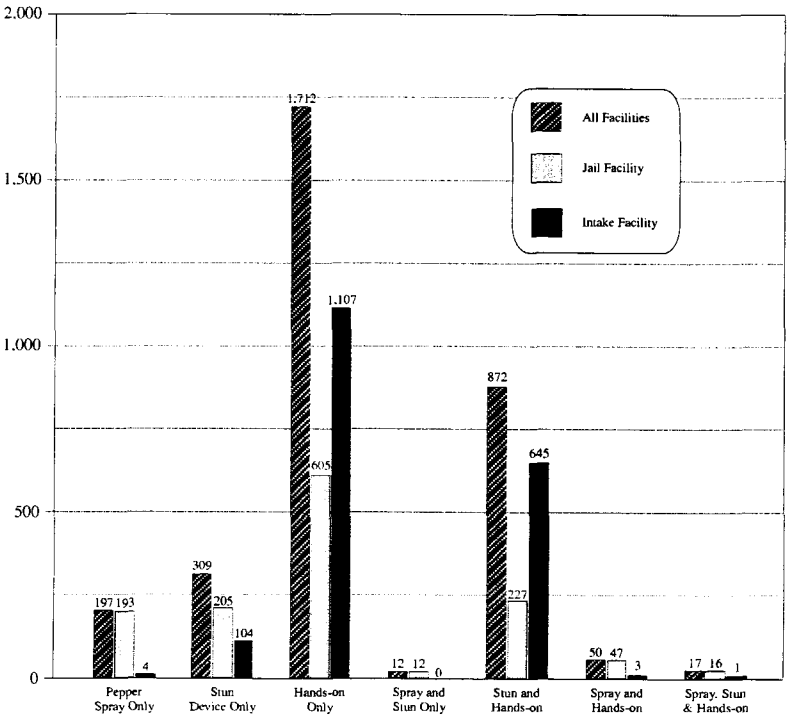


Figure 20. Frequency of Force Types Used, by Location

remaining 86 percent of all uses of the stun involved its actual application to the inmate. By June 1995, 29 percent of all uses of the stun were either a display or a threat; the other 71 percent of the times the stun was actually applied.

Similarly, Figure 22 illustrates the degree to which the display or threatened use of pepper spray, rather than its application, became an increasingly more prevalent means of resolving the altercation. By May 1995, pepper spray was more likely to be either displayed or threatened than to be applied against an inmate. The finding that pepper spray was applied in less than half of all cases in which it was employed during the final months of the study suggests that the mere threat of its use was an effective means to terminate altercations.

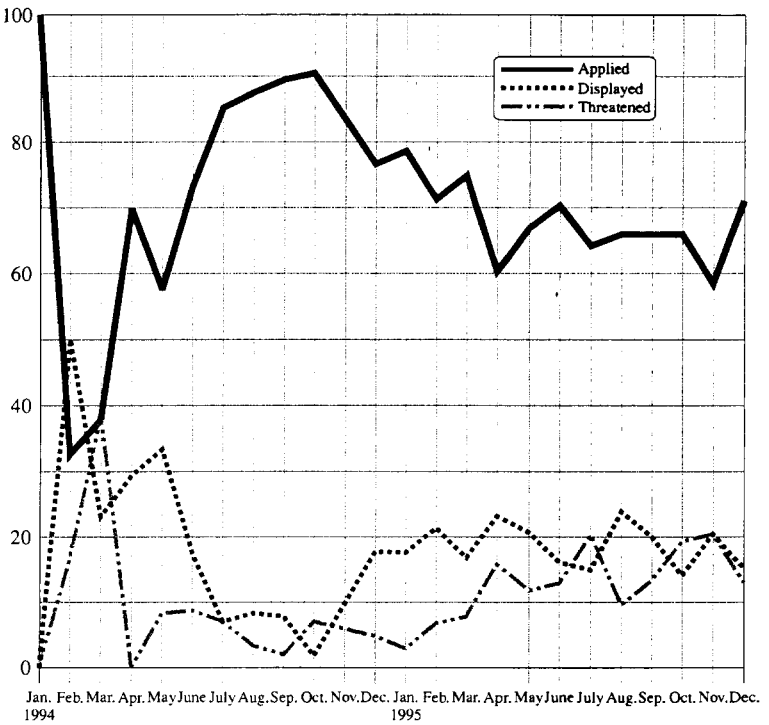


Figure 21. How Stun Device Was Used, by Month, as Proportion of All Uses of Stun Device

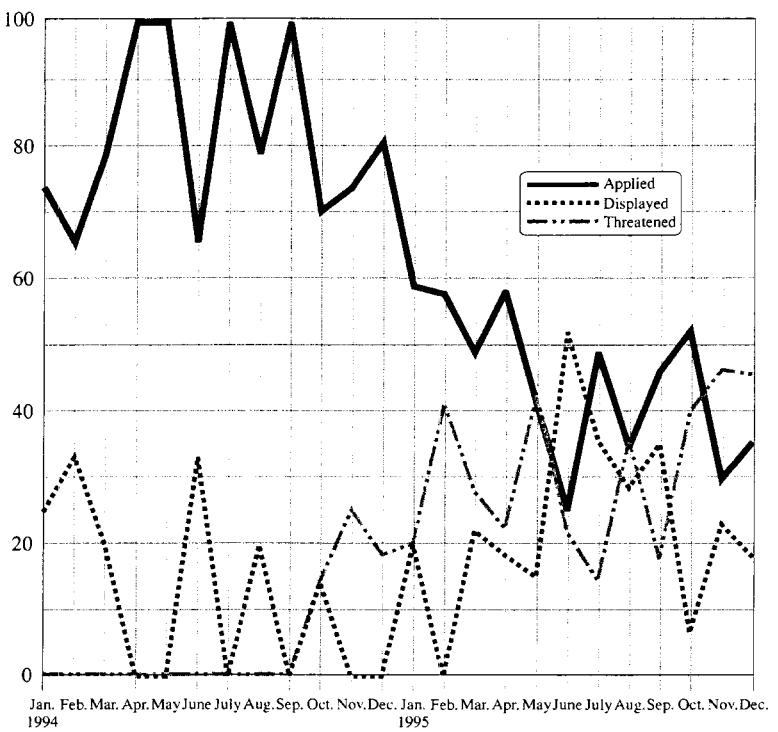


Figure 22. How Pepper Spray Was Used, by Month, as Proportion of All Uses of Pepper Spray

Altercation Characteristics and Nonlethal Weapon Use

The type of force used varied somewhat by the characteristics of the incident to which the officers were responding. For example, pepper spray was used in 25 percent of the 59 instances of armed inmate resistance, nearly 13 percent of the instances in which there was no inmate resistance, and only 5 percent, or less, of the incidents in which the inmate threatened or attacked the officer. In comparison, the stun device was used in over half of the 632 incidents in which the inmate attacked the officer.

Table 9 also indicates that the pepper spray was used in nearly half of the 33 group disturbances to

Table 9. Type of Force by Characteristics of the Incident

	Type of Force Used										Row Totals
	Pepper Spray		Stun Device		Stun & Spray		Hands-on Only		Other		
	Row %	N	Row %	N	Row %	N	Row %	N	Row %	N	
Type of Incident											
Solo inmate disturbance	3.8%	24	35.7%	223	1.0%	6	58.8%	367	0.6%	4	100%
Inmate to inmate	14.1%	49	26.4%	92	0.9%	3	57.5%	200	1.1%	4	100%
Inmate to staff	4.7%	88	42.8%	795	0.8%	15	51.4%	954	0.3%	5	100%
Group disturbance	48.5%	16	24.2%	8	0.0%	0	27.3%	9	0.0%	0	100%
Other	6.9%	5	19.4%	14	1.4%	1	68.1%	49	4.2%	3	100%
Level of Resistance by Inmate											
No resistance	12.6%	50	18.9%	75	0.3%	1	65.2%	258	3.0%	12	100%
Some resistance	5.5%	55	37.3%	371	0.6%	6	56.3%	560	0.3%	3	100%
Threaten staff	5.0%	43	38.3%	326	1.1%	9	55.5%	473	0.1%	1	100%
Attack staff	2.1%	13	53.5%	338	0.9%	6	43.5%	275	0.0%	0	100%
Inmate armed	25.4%	15	44.1%	26	3.4%	2	27.1%	16	0.0%	0	100%

occur and in about 15 percent of the 348 inmate-to-inmate disturbances, but in fewer than 5 percent of either the 624 solo inmate disturbances or the 1,857 inmate-to-staff disturbances. In contrast, it also is evident from Table 9 that the stun device was used in less than a quarter of the group disturbances and the inmate-to-inmate disturbances, over a third of the solo inmate disturbances, and over 40 percent of the inmate-to-staff disturbances.

The manner in which each nonlethal weapon was used in these incidents is depicted in Figures 23 and 24. When used, pepper spray was more likely to be displayed or threatened rather than actually discharged in solo inmate disturbances; it also was displayed or threatened nearly as often as discharged in response to each of the other types of situations. The stun device, on the other hand, was actually applied much more than it was displayed or threatened in each of the three most common types of situation.

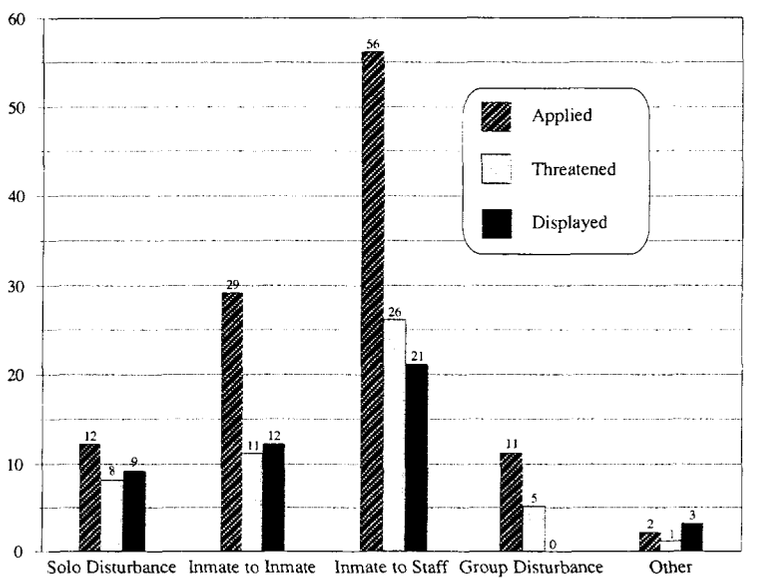


Figure 23. How Pepper Spray Was Used, for All Facilities, by Type of Incident

Table 10 contains information similar to that reported in Table 8, but the data reported in Table 10 pertain to only those incidents in which force was actually applied (not simply displayed or threatened) against an inmate. Because there are noted differences between jails and Intake in the use of the stun device and the hands-on tactics, the findings are reported separately for these two locations. The pepper spray was applied almost exclusively in jails, so there is no need for a separate analysis for Intake incidents of pepper spray use in Table 10.

Table 10. Characteristics of Incidents in Which Force Was Used, by Type of Force and Location

	Pepper Spray		Stun Device				Hands-on			
			Intake		Jails		Intake		Jails	
	N	%	N	%	N	%	N	%	N	%
Number of Inmates Involved										
One	71	49.7	593	95.2	216	84.7	1,566	91.6	658	78.1
Two	58	40.6	26	4.2	39	15.3	136	7.9	164	19.5
Three or more	14	9.7	4	0.6	0	0.0	8	0.5	20	2.4
Number of Officers Involved										
One	85	58.2	54	8.6	104	40.9	123	7.2	404	48.1
Two	37	25.3	96	15.3	54	21.3	608	35.7	196	23.9
Three	22	15.1	405	64.7	76	29.9	800	46.9	189	22.5
Four or more	2	1.4	71	11.3	20	7.9	174	10.2	50	6.0
Inmate Impaired at Time										
Yes	3	1.8	132	26.0	15	7.5	303	27.3	31	5.7
No	138	83.6	58	11.4	135	67.8	130	11.7	408	74.6
Don't know	24	14.6	317	62.5	49	24.6	677	61.0	108	19.7
Force Used by										
Officer	108	73.5	265	42.3	141	55.3	1,157	67.7	636	75.5
Supervisor	27	18.4	24	3.8	47	18.4	27	1.6	52	6.2
Both	12	8.2	337	53.8	67	26.3	526	30.8	154	18.3
Appropriate for Pepper Spray										
Yes	145	98.6	10	1.6	45	17.9	20	1.2	159	19.3
No	2	1.4	608	98.4	206	82.1	1,677	98.8	666	80.7
Appropriate for Stun Device										
Yes	51	36.2	617	99.2	253	99.2	813	47.9	456	55.4
No	90	63.8	5	0.8	2	0.8	883	52.1	367	44.6

First, it is evident in these findings that incidents involving pepper spray application are much more likely than those involving the application of the stun device or hands-on tactics to involve more than one inmate and to be used by only one officer. Intake is especially unlikely to involve only one officer in either the use of the stun device or the use of hands-on tactics—obviously a result of the large number of officers working within so small a physical space. Similarly, incidents which occur at Intake are more likely to involve the supervisor than incidents which occur within the jails. Intake also is more likely to report that the inmates are impaired at the time of the incident: 399 due to alcohol, 120 due to illegal drugs, 57 due to both alcohol and drugs, and 47 due to mental or emotional stress.

Table 10 also reports that while nearly one-third of the incidents in which pepper spray was applied were considered by the reporting officer to be appropriate for the use of the stun device, few of the incidents in which a stun device was applied were reported to be appropriate for pepper spray use. Intake officers, in fact, rarely reported any incident as appropriate for the spray or foam, but jail officers indicate that pepper spray would have been an appropriate response in nearly 18 percent of the stun use incidents. Nonlethal weapons also were considered to be appropriate for many of

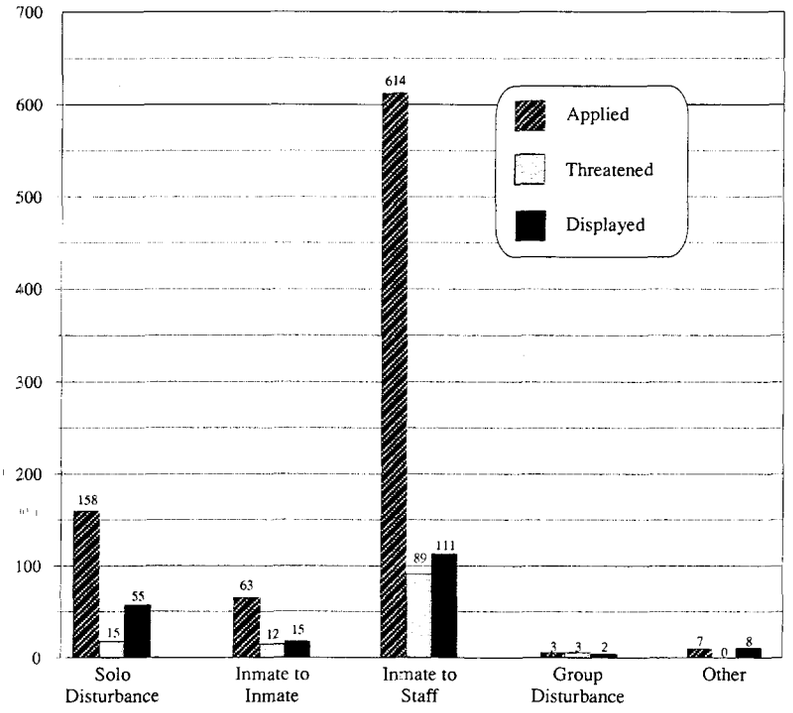


Figure 24. How Stun Device Was Used, for All Facilities, by Type of Incident

the situations in which hands-on tactics were used: the stun device would have been appropriate for nearly half (47.9 percent) of all hands-on uses at Intake and more than half (55.4 percent) of all hands-on uses within jails; the pepper spray would have been appropriate for 19.3 percent of all hands-on uses within the jails but for only 1.2 percent of the hands-on uses at Intake.

Summary of Findings

Pepper spray was not used in Intake. In jails, it was used in about 17 percent of all reported incidents, which represent about half of all incidents in which officers indicated that pepper spray would have been appropriate. Pepper spray seldom was used in conjunction with the stun device or with hands-on tactics. When used, it was almost as likely to be displayed or threatened as it was to be actually discharged. In fact, there is an observed decrease over the two-year period of observation in the likelihood that the use of pepper spray resulted in an actual discharge and an increase in the likelihood that the use involved only a threat or display. The large number of incidents which involved only a threat or display of the pepper spray suggests that it was effective at gaining control over the inmate and terminating the incident without the need to apply any type of force.

The stun device was reported to be appropriate for more than half of all incidents, and it was used in more than a third of all incidents in both Intake and jail facilities. The stun device rarely was used in conjunction with the pepper spray, but it often was used with hands-on tactics: more than 75 percent of all reported uses of the stun device also involved the use of hands-on tactics. When used, the stun device was displayed or threatened in about 25 percent of the incidents and actually applied to the inmate in the other 75 percent of all incidents. After an initial increase, there was a steady decline in the proportion of uses in which the stun device was actually discharged against an inmate and a concomitant increase in the proportion of uses which involved only a display or threat of the stun device. By the end of the study period, nearly 40 percent of all incidents in which the stun device was used involved only a display or threat of the weapon. The display or threat of the stun device, then, often serves as a deterrent to further misconduct.

In summary, both the pepper spray and the stun device appear to have widespread use within the jails, but only the stun device was used in Intake. When used, both nonlethal weapons were likely to be considered "effective." The pepper spray was more likely to be used when intervening in inmate-to-inmate disturbances and in solo inmate disturbances which do not threaten the officer. Its display or threat was effective at terminating the conflict in nearly half of all the incidents in

which it was used; in the other half, the discharge of the spray terminated the incident. Seldom did officers use hands-on tactics or the stun device in support of the pepper spray. The stun device also was effective when merely displayed or threatened, but it was much more likely to be used—and used in conjunction with hands-on tactics. Since the stun device was more likely to be used in incidents in which the officer is threatened or attacked by the inmate, the stun often serves as a complement to hands-on tactics. Interviews indicate that often the officer involved in the hands-on tactics with the inmate is unable to reach for his or her own stun device and the stun is actually applied by responding backup officers.

Chapter 4

The Impact of Nonlethal Weapons

Introduction

Nonlethal weapons were introduced into the Maricopa County jails with the belief that their use would be an effective means of control which would reduce injuries to both officers and inmates. Using data collected from the altercation forms, the officer surveys, the officer interviews and institutional records from the Sheriff's office, this chapter examines the utility of nonlethal weapons in detention facilities.

Nonlethal Weapons as a Means to Control Inmates

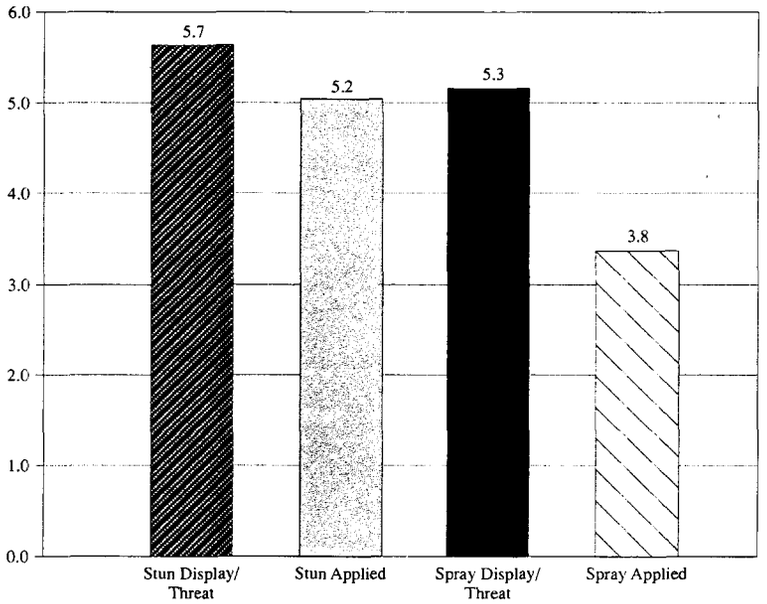
Since the time when nonlethal weapons were first introduced into the detention facilities, support for them was based on an untested argument that they would be an effective alternative to the traditional use of hands-on tactics. Although the placement of nonlethal weapons on the continuum of force, relative to hands-on tactics, was altered during the two-year period under study, nonlethal weapons always were considered as a means to effectively control inmates. Effective control of inmates is assessed from many sources, but each indication suggests that both the pepper spray and the stun device tend to be effective means of controlling inmates.

Officers' General Attitudes About Nonlethal Weapons

The three surveys of officers indicate that officers and supervisors alike support the availability and use of nonlethal weapons in detention facilities. As already discussed in reference to Table 3, more than half the officers responding to the third survey in 1996 stated that the pepper spray and the stun device were frequently or always needed in their facility, more than two-thirds report that these weapons affect inmate misconduct, and four-fifths of the officers indicate that the presence of the weapons make inmates easier to control. This is a rather strong endorsement of the presence of nonlethal weapons, especially in light of the fact that the pepper spray or foam was virtually never actually used within Intake.

Further, the data presented in Table 3 and Table 6 indicate that familiarity with the nonlethal weapons substantially increases the officer's support for the weapons. In Table 3, those officers who had been trained and equipped with the weapons in 1994 were much more favorably disposed to them than were the officers who had not yet been trained and equipped. In Table 6, those officers who had used the nonlethal weapons by July 1996 were more likely than those officers who had not used the weapons to believe that the weapons affect inmate misconduct and make inmates easier to control. Not surprisingly, then, officers who had used the weapons were more likely than officers who had not used the weapons to report that the weapons were frequently or always needed within their facility.

The 1996 survey also asked each officer to indicate, on a scale from 1 to 10, the effectiveness of the pepper spray when displayed or threatened, the effectiveness of the pepper spray when actually applied, the effectiveness of the stun device when displayed or threatened and the effectiveness of the stun device when actually applied. The results, which are summarized in Figure 25, indicate a belief that the display or threat of the stun or the pepper spray is as effective as the application of the stun; each option is viewed as significantly more effective than the application of the pepper spray, however.

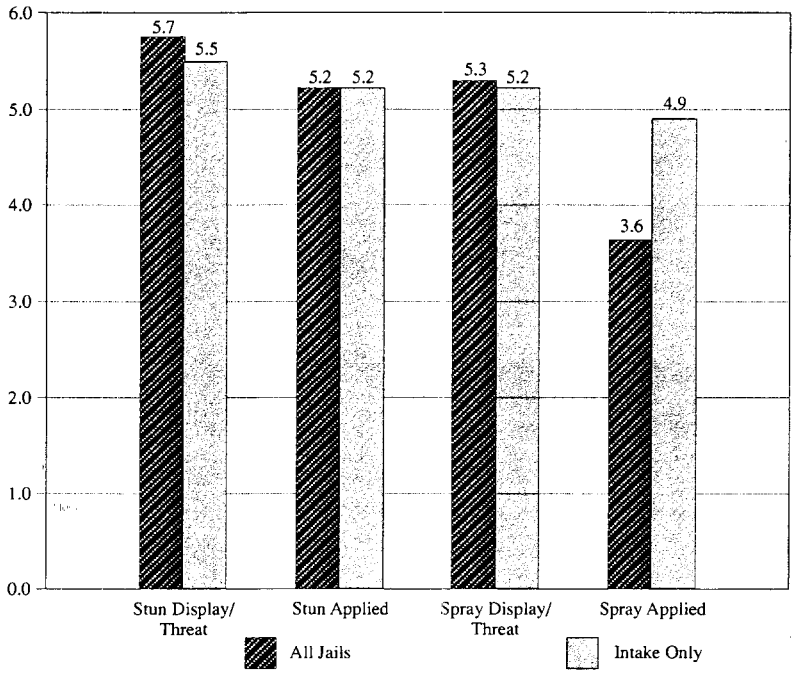


Based on 617 officers surveyed in 1996, who rated effectiveness on a scale of 1 (lowest) to 10 (highest). The mean effectiveness of the spray applied is significantly ($p<.05$) lower than the mean effectiveness of the others.

Figure 25. Mean Level of Reported Effectiveness of Nonlethal Weapons, by Level of Use

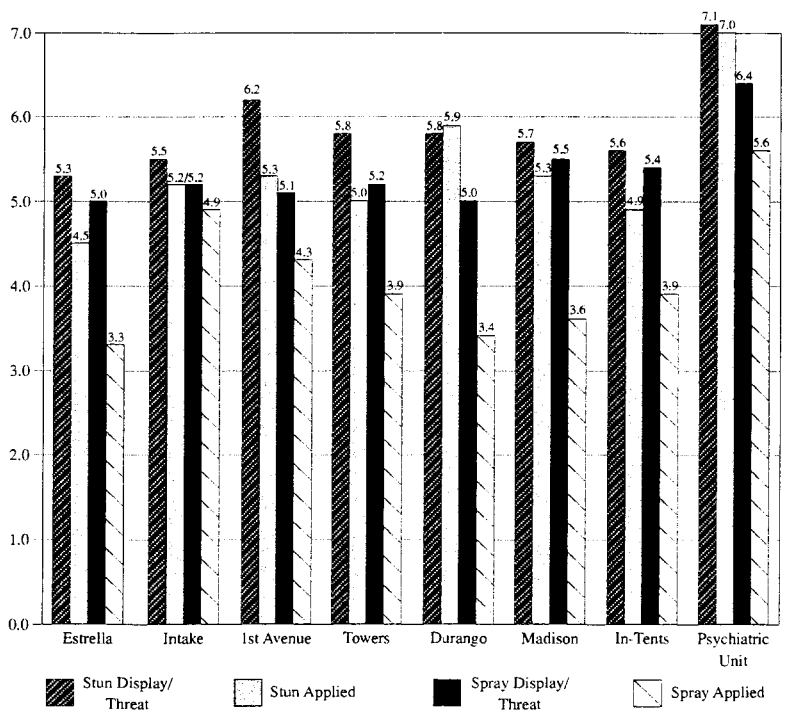
Further analyses indicate that the only statistically significant ($t=-2.31$, $p=.02$) difference which occurs between Intake and Jails is that pepper spray application is seen as being less effective by officers working within Jails than by officers working within Intake (see Figures 26 and 27). This finding is not easily explained, unless to suggest that, whereas Intake officers are responding on the basis of training experiences and storied instances, Jail officers have a lower opinion of the spray because they have more experience with discharging the pepper spray under a variety of circumstances. Although the differences are not statistically significant (ANOVA, $p>.05$), the weapons are rated the most effective by officers within the psychiatric unit and 1st Avenue jail facilities—where they were used the least.

In comparing the ratings by detention officers and supervisors, two significant differences emerge (Figure 28). While supervisors and officers do not differ in their estimation of the effectiveness of the display or threat of the two weapons, supervisors assign a higher level of effectiveness to the application of the pepper spray ($t=-1.96$, $p=.05$) and the stun device ($t=-2.43$, $p=.02$). Similar comparisons of the perceived effectiveness of the nonlethal weapons found no



Based on 617 officers surveyed in 1996, who rated effectiveness on a scale of 1 (lowest) to 10 (highest). The mean effectiveness of the spray applied is significantly ($p<.05$) lower among surveyed officers working in jail facilities than among intake officers.

Figure 26. Mean Level of Reported Effectiveness of Nonlethal Weapons, by Level of Use, by Location



Based on 617 officers surveyed in 1996, who rated effectiveness on a scale of 1 (lowest) to 10 (highest). Observed differences between facilities are not statistically significant.

Figure 27. Mean Level of Reported Effectiveness of Nonlethal Weapons, by Level of Use, by Facility

differences by length of employment with the Sheriff's Office, by education or by whether or not the officer had previously used the weapons (see Appendix B, Figures 9–13).

Reported Effectiveness at Control in Specific Altercations

The Altercation Forms provide another means of assessing the nonlethal weapons' usefulness in controlling inmates. Each time force was displayed, threatened or actually applied, the reporting officer was asked to indicate how well the force employed controlled the inmate. As already reported in Table 8, some measure of the ability of these weapons to control inmates is found in the frequency with which the altercation was resolved without the actual application of force. In 46 percent of the times in which pepper spray was used, the altercation was resolved and the inmate(s) were controlled merely by the display or threat of its use; for the stun device, it's display or threatened use was an effective end to the altercation in 27 percent of the occasions on which it was employed. These findings suggest that the mere presence of the weapons has been an effective means of control.

Table 11 reports the officers' descriptions of how the pepper spray and stun device were applied and the officers' assessments of the effectiveness of the weapons when applied. Two questions on the Altercation form were

designed to measure effective inmate control. First, officers who used either nonlethal weapon were asked "Was the inmate incapacitated to the point of no resistance?" The data in Table 11 and Figure 29 indicate that officers report an incapacitated inmate in 73.6 percent of all pepper spray applications, 63.1 percent of all stun device applications at Intake, and 42.0 percent of all stun device applications within jails.

Second, officers who used any type of force were asked to rate its effectiveness as being total, partial, little or none. Consistent with the reports of incapacitation, the highest reported effectiveness is for the use of the pepper spray and the use of the stun device at Intake. The level of effectiveness for the stun device is reportedly much less within the jail facilities, with 22.6 percent of the reports indicating that the stun device had little or no effect on the inmate. Hands-on tactics is reported to

Table 11. Application and Effectiveness of Nonlethal Weapons

			Stun Device				Hands-on			
	Pepper Spray		Intake		Jail		Intake		Jail	
	N	%	N	%	N	%	N	%	N	%
Distance Sprayed										
2 feet or less	32	22.1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3-5 feet	65	44.8	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
6-9 feet	37	25.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
10 feet or more	11	7.6	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Number of Applications										
One	103	7.0	320	52.9	134	53.8	n/a	n/a	n/a	n/a
Two	28	19.1	181	29.9	67	26.9	n/a	n/a	n/a	n/a
Three	12	8.1	64	10.6	28	11.2	n/a	n/a	n/a	n/a
Four/five	4	2.7	28	4.6	19	7.6	n/a	n/a	n/a	n/a
Six or more	0	0.0	12	2.0	1	0.4	n/a	n/a	n/a	n/a
Application Point[a]										
Trunk	28	15.8	566	81.6	216	75.0	n/a	n/a	n/a	n/a
Arms	10	5.7	54	7.8	35	12.2	n/a	n/a	n/a	n/a
Legs	10	5.7	63	9.1	25	8.7	n/a	n/a	n/a	n/a
Face	127	71.8	1	0.1	3	1.0	n/a	n/a	n/a	n/a
Other	2	1.1	10	1.4	9	3.1	n/a	n/a	n/a	n/a
Inmate Incapacitated										
Yes	106	73.6	374	63.1	105	42.0	n/a	n/a	n/a	n/a
No	38	26.4	219	36.9	145	58.0	n/a	n/a	n/a	n/a
Effectiveness[b]										
Total	114	78.1	437	72.0	127	52.3	1,568	93.9	701	86.3
Partial	26	17.8	113	18.6	61	25.1	91	5.4	87	10.7
Little	5	3.4	32	5.3	26	10.7	8	0.5	18	2.2
None	1	0.7	24	4.0	29	11.9	3	0.2	6	0.7

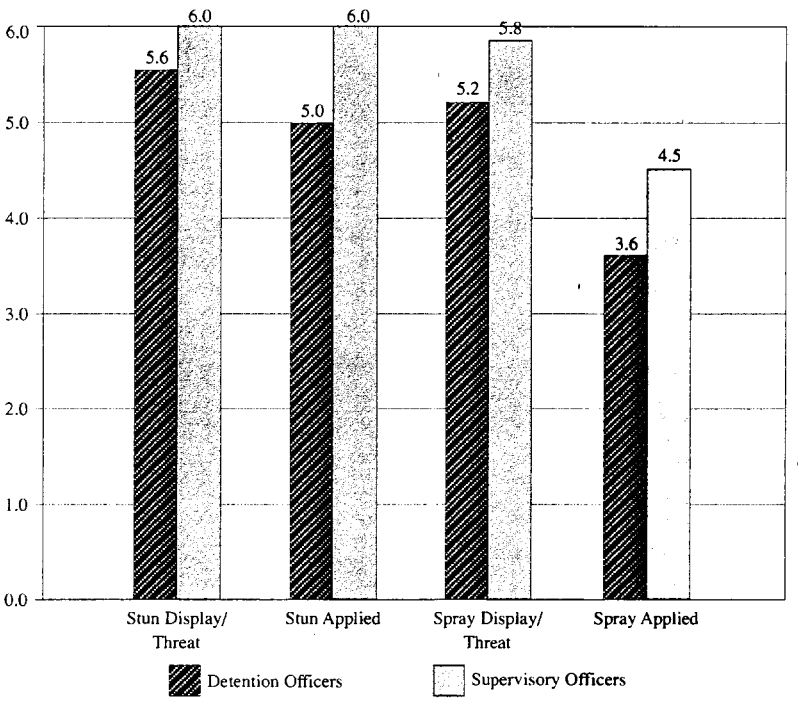
[a]Column frequencies allow for the fact that the nonlethal weapon may have been applied to more than one part of the body.

[b]Row totals sum to more than the reported total frequency of cases becuase officers reported the effectiveness for each type of force used, and the application of two or more types of force produced effectiveness assessments for each type of force applied.

be highly effective, perhaps because the use of hands-on tactics continues until totally effective control is established.

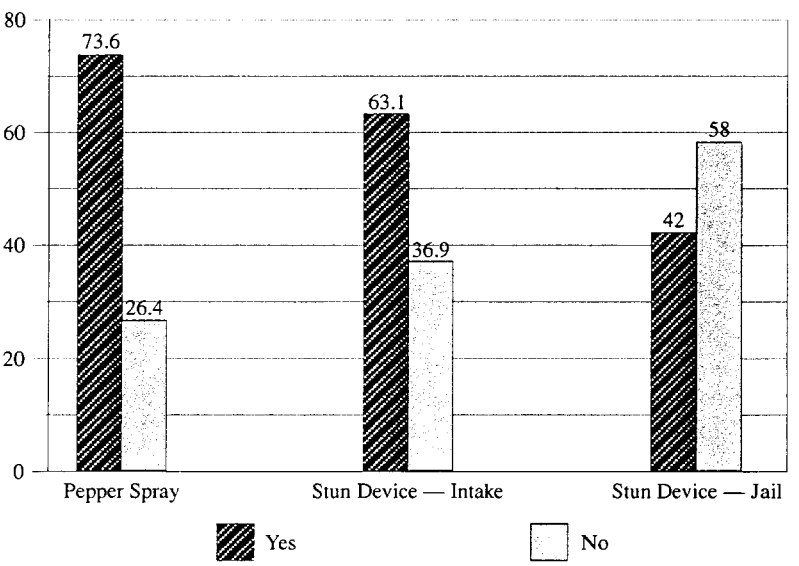
Tables 12 and 13 present the reported effectiveness and incapacitation ability of the application of the pepper spray and stun, respectively, by selected characteristics of the altercation. Due to the fact that most altercations report total effectiveness in Table 11, this analysis has dichotomized effectiveness into two categories: total effectiveness versus less than total effectiveness. The data reported in Table 12 indicate that the effectiveness and incapacitation ability of pepper spray is not related to whether or not it was applied to the face. Also, it is reported to be equally effective when applied from varying distances; its ability to incapacitate the inmate is substantially reduced when applied from 10 or more feet, however. There were no reported differences in effectiveness and incapacitation by either inmate gender or inmate body frame (small, medium, large), so these data are not reported in Table 12.

Pepper spray was more likely to be reported as totally effective and as able to incapacitate when applied only once, but that may be a result of the fact that second and third applications followed initial applications which were not totally effective or incapacitating. Similarly, the higher likelihood of total effectiveness when only one officer was involved, and the higher likelihood



Based on 92 supervisors and 525 detention officers surveyed in 1996, who rated effectiveness on a scale of 1 (lowest) to 10 (highest). The application of pepper spray and the application of the stun device are rated significantly more ($p<.05$) effective by supervisors than by detention officers.

Figure 28. Mean Level of Reported Effectiveness of Nonlethal Weapons, by Level of Use, by Officer Rank



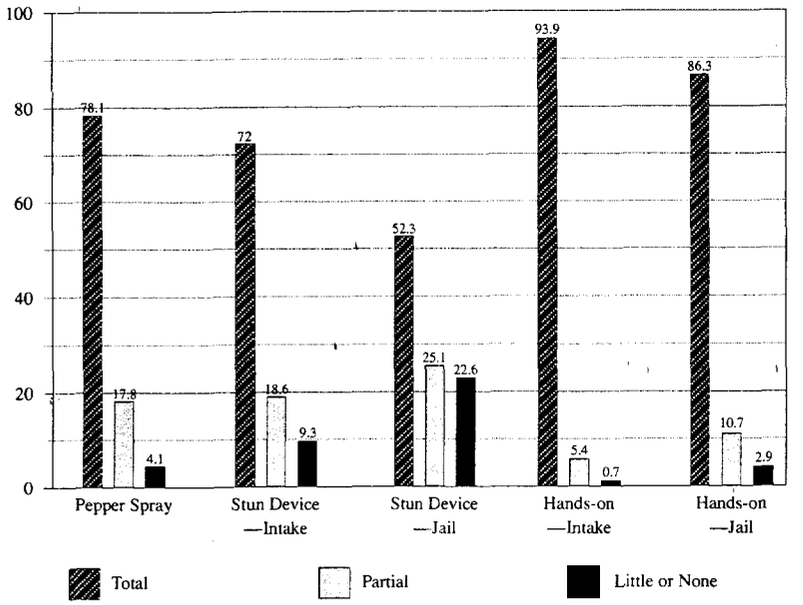
Officer responses to question about the application of the nonlethal weapon in the altercation: "Was the inmate incapacitated to the point of no resistance?"

Figure 29. Incapacitation by Nonlethal Weapon, by Location, in Percent

Table 12. Effectiveness and Incapacitation Ability of Pepper Spray Applications, by Characteristics of the Altercation

	Effectiveness				Incapacitation			
	Total		Partial-to-None		Yes		No	
Pepper Spray	N	%	N	%	N	%	N	%
Applied to Face								
Yes	99	78.0	28	22.0	90	73.8	32	26.2
No	14	82.4	3	17.6	14	77.8	4	22.4
Number of Applications								
One	88	85.4	15	14.6	80	81.6	18	18.4
Two	17	60.7	11	39.3	19	67.9	9	32.1
Three or more	9	60.0	6	40.0	5	31.3	11	68.7
Distance Sprayed								
2 feet or less	26	81.3	6	18.7	23	74.2	8	25.8
3–5 feet	48	73.8	17	26.2	48	75.0	16	25.0
6–9 feet	29	80.6	7	19.4	27	79.4	7	20.6
10 feet or more	9	81.8	2	18.2	5	45.5	6	54.5
Number of Inmates Involved								
One	52	73.2	19	26.8	50	73.5	18	26.5
Two	48	82.8	10	17.2	41	73.2	15	26.8
Three or more	14	82.4	3	17.6	13	72.2	5	27.8
Number of Officers Involved								
One	73	86.9	11	13.1	65	80.2	16	19.8
Two	27	73.0	10	27.0	28	77.8	8	22.2
Three or more	13	52.0	12	48.0	10	41.7	14	58.3
Resistance to Staff								
None	37	94.9	2	5.1	31	86.1	5	13.9
Some	29	74.4	10	25.6	28	71.8	11	28.2
Threaten	23	71.9	9	28.1	23	76.7	7	23.3
Attack	10	62.5	6	37.5	9	56.3	7	43.8
Armed	12	85.7	2	14.3	9	64.3	5	35.7
Type of Incident								
Solo inmate disturbance	7	58.3	5	41.7	9	75.0	3	25.0
Inmate to inmate	50	90.9	5	9.1	44	80.0	11	20.0
Inmate to staff	43	70.5	18	29.5	38	62.3	23	37.7
Group disturbance	12	80.0	3	20.0	11	68.8	5	31.3

of incapacitation when one or two officers were involved, probably is due to the fact that other officers became involved when the pepper spray did not achieve the desired control. It is noteworthy, also, that the pepper spray was more likely to be totally effective when applied to incidents which involved inmate-to-inmate altercations or group disturbances and in incidents in which the inmate was armed.

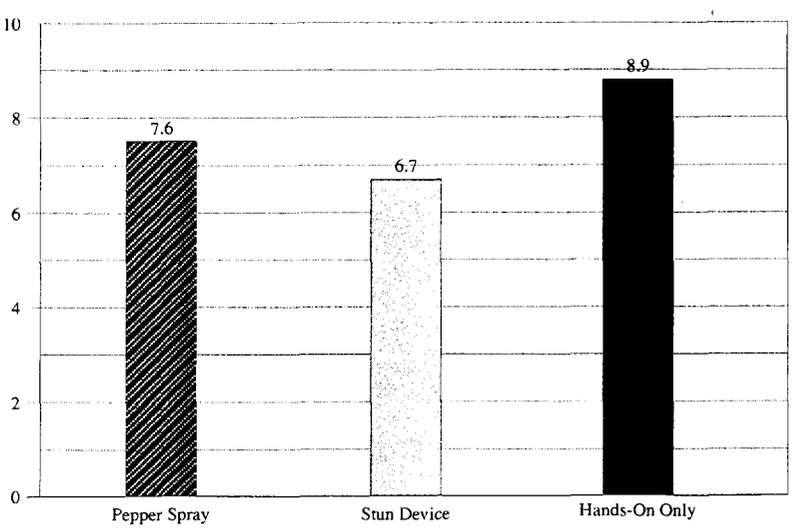


Officer responses to question asking to report the effectiveness of the force applied in the altercation.

Figure 30. Effectiveness of the Application of Nonlethal Weapons, by Location

Fewer differences in effectiveness or incapacitation are noted for the stun device in Table 13. In terms of both incapacitation and effectiveness, the application of the stun device achieves similar results regardless of (1) the point of application to the body, (2) the level of resistance to staff, or (3) the type of incident. Nor is there a difference in effectiveness or incapacitation by inmate gender or body frame. As with the pepper spray, there is an observed difference in both reported effectiveness and incapacitation ability by number of applications and by number of officers involved, which is again attributed to the fact that early failure to achieve control results in increased efforts at control.

One noticeable difference in effectiveness and incapacitation for the stun device arises when the inmate is impaired. The presence of an impairment is recorded as "unknown" in the majority of all cases, and there is no test or expert available at the time to verify the presence or absence of an impairment, or its nature, so these results must be viewed with caution. In fact, it is possible that the causal order is reversed: rather than the presence of an impairment explaining the difficulty in exerting control over the inmate, it may be that the difficulty in exerting control over the inmate was a factor in the officer's decision that the inmate was impaired. Yet, we are guided by the fact that most cases of impaired inmates occurred in Intake and the fact that severe alcohol and drug impairments are rather easy to observe. These data suggest that the stun device was more likely to be totally effective and to incapacitate the inmate when the inmate was not impaired than impaired; among those who were impaired, the stun device was more useful with alcohol-induced impairments than with impairments due to illegal drugs or emotional problems.



Based on interviews with 161 officers who had recently used one or more of each type of force.

Figure 31. Effectiveness of Types of Force, as Reported by Interviewed Officers

Finally, effectiveness of nonlethal weapons to control inmates can be evaluated on the basis of

Table 13. Effectiveness and Incapacitation Ability of Stun Device Applications, by Characteristics of the Altercation

	Effectiveness				Incapacitation			
	Total		Partial-to-None		Yes		No	
Stun Device	N	%	N	%	N	%	N	%
Applied to Trunk								
Yes	503	66.4	254	33.6	436	57.4	323	42.6
No	45	65.2	24	34.8	36	49.3	37	50.7
Number of Applications								
One	316	72.5	120	27.5	273	61.9	168	38.1
Two	150	63.3	87	36.7	130	53.9	111	46.1
Three or More	80	53.7	69	46.3	69	44.8	85	55.2
Number of Inmates Involved								
One	512	65.6	269	34.4	440	56.7	336	43.3
Two	48	75.0	16	25.0	36	57.1	27	42.9
Three or More	4	100.0	0	0.0	3	75.0	1	25.0
Number of Officers Involved								
One	90	60.0	60	40.0	75	49.3	73	50.7
Two	93	64.6	51	35.4	82	55.8	63	44.2
Three or More	381	68.8	173	31.2	322	58.7	227	41.3
Resistance to Staff								
None	30	78.9	8	21.1	26	68.4	12	31.6
Some	166	67.2	77	32.8	135	55.1	110	44.9
Threaten	153	68.0	72	32.0	129	59.4	88	40.6
Attack	196	63.0	115	37.0	173	55.4	139	44.6
Armed	11	61.1	7	38.9	9	45.0	11	55.0
Type of Incident								
Solo Inmate Disturbance	100	65.8	52	34.2	86	56.9	65	43.1
Inmate to Inmate	60	73.2	22	26.8	48	60.8	31	39.2
Inmate to Staff	391	65.8	203	34.2	332	56.2	259	43.8
Group Disturbance	2	66.7	1	33.3	3	75.0	1	25.0
Inmate Impaired								
Yes	77	53.5	67	46.5	64	45.1	78	54.9
No	123	66.1	63	33.9	91	49.2	94	50.8
Unknown	239	67.7	113	32.1	211	61.3	133	38.7
1) Alcohol	73	81.1	20	18.9	64	67.4	31	32.6
2) Drug	24	45.3	29	54.7	16	30.2	37	69.8
3) Alcohol and Drug	7	46.7	8	53.3	7	46.7	8	53.3
4) Mental	8	30.8	18	69.2	8	30.8	18	69.2

reports from those officers interviewed shortly after they had used force in an altercation. Among the questions were three of relevance to the effectiveness of nonlethal weapons. First, when asked which type of force they considered to give them more authority, officers chose nonlethal weapons (63.7 percent) over hands-on tactics (36.3 percent). Second, officers overwhelmingly indicated that inmates are more afraid of the nonlethal weapons (92.5 percent) than of the use of hands-on tactics (7.5 percent). Third, officers were asked to evaluate the effectiveness of the type of force used in the altercation about which they were being interviewed. That is, effectiveness of each type of force was assessed by only those officers whose most recent altercation involved that type of force (although they may have used other types of force in other altercations). Despite the fact that these officers had just used the nonlethal weapons, and somewhat contrary to their answers to the first two questions, these officers rated hands-on tactics as more effective than either pepper spray or stun device, as illustrated in Figure 31.

Nonlethal Weapons and Injuries to Inmates and Officers

The surveys of officers reported in Tables 3 and 6 indicate that officers generally believe the presence and use of nonlethal weapons reduces injuries to inmates and officers. The 1996 survey, for instance, revealed that about 85 percent of all officers believed that nonlethal weapons reduce injuries to both inmates and officers. It is hard to document that the introduction of the weapons has brought about a change in either the number or the severity of injuries to inmates because there is no way to control for the wide variations which occur between altercations.

Further, among those altercations which used a nonlethal weapon without injury to inmate or officer, there is no way of knowing just how much injury, if any, would have occurred if the weapons had not been used. Thus, we can not offer conclusive evidence that the nonlethal weapons reduced injuries. Similarly, we can not discern, for those altercations involving nonlethal weapons and injury to inmate or officer, whether or not inmate and officer would have avoided injury if the weapons had not been used. What we can do is to examine the conditions under which injuries occurred. Data summarized in Tables 14 and 15 shed some light on this discussion.

According to the information provided on the Altercation Form, there were a total of 507 inmates and 304 officers or supervisors who sustained some level of injury as a result of an altercation in which force was applied against an inmate. Pepper spray use had the lowest likelihood of injury to the inmate (8.8 percent). The proportion of inmates injured by the stun device is more than double the proportion injured by the pepper spray, and the proportion of inmates injured as a result of hands-on tactics falls somewhere between the figures for the two nonlethal weapons. The increased likelihood of inmate injury as the incident moves from pepper spray application to hands-on only application to stun device application may be due to two interrelated aspects of the altercation: hands-on and stun device uses are more likely than pepper spray to involve a single inmate and two or more officers in physical contact with one another, and stun device use frequently is in conjunction with hands-on tactics.

Injuries to officers also vary by the type of force applied. The lowest proportion of injuries to officers occurs with the application of hands-on tactics at Intake—probably a function of the increased number of officers available to control the inmate. Among officers working at jail facilities, the lowest level of injury occurs when the pepper spray is applied (4.8 percent), followed by the application of hands-on tactics (12.9 percent) and then the stun device (20.9 percent). Once again,

Table 14. Injury Reports, by Type of Force Applied

	Pepper Spray		Stun Device				Hands-on			
			Intake		Jails		Intake		Jails	
	N	%	N	%	N	%	N	%	N	%
Injury to Inmate										
Yes	13	8.8	109	17.5	51	20.3	95	9.1	79	14.5
No	134	91.2	515	82.5	200	79.7	961	90.9	477	85.5
Injury to Officer/Supervisor										
Yes	7	4.8	51	8.2	53	20.9	22	2.1	73	12.9
No	140	95.2	573	91.8	201	79.1	1,037	97.9	485	87.1
When Inmate Injured										
No medical aid	8	50.0	19	27.5	24	47.0	25	59.5	40	52.6
Treat by staff only	6	37.5	45	65.2	21	42.9	12	28.6	24	31.6
Transport to hospital	0	0.0	3	4.3	1	2.0	4	9.5	9	11.8
Treat and transport	2	12.5	2	2.9	3	6.1	1	2.4	3	3.9

the application of the stun device generally is accompanied by hands-on tactics, so the higher probability of injury to both inmates and officers when the stun device is used may well be attributed to a higher level of conflict between officers and inmates.

A breakdown of the presence or absence of injury to inmates and officers by type(s) of force applied in presented in Table 15. As suspected, inmate injury is much more likely to occur when both hands-on tactics and the stun device are applied than when either are applied without the other. At Intake, injuries to inmates occurred in 9 percent of the altercations in which hands-on only was used, 11.1 percent of the altercations in which the stun device only was applied, and 18.6 percent of the altercations in which both the stun device and the hands-on tactics were applied. Similarly, the likelihood of injury to inmates involved in altercations within the jail facilities increased from 7.0 percent when pepper spray alone was applied, to 11.2 percent when the stun alone was applied, to 14.2 percent when hands-on tactics alone were applied, and to 25.9 percent when both the stun device and the hands-on tactics were applied.

Table 15 also suggests that the likelihood of injury to officers varies by the type(s) of force applied. At Intake, only 2.1 percent of all altercations involving only hands-on tactics result in officer injuries, compared to 6.1 percent of all stun device applications and 8.6 percent of all applications of both stun device and hands-on tactics. For officers working in the jail facilities, the lowest probability of injury occurs among those altercations involving the application of only pepper spray (1.9 percent of 114 reported altercations). The probability of injury to an officer is about the same when either the stun device alone is used (11.6 percent) or hands-on tactics only (13.1 percent) are used. The probability of injury to officers increases substantially, however, with the use of both hands-on tactics and a nonlethal weapon (23.8 percent if pepper spray and 29.0 percent if stun device).

The data reported in Tables 14 and 15, in summary, indicate that injury to officer and to inmate is more likely in Jail Facilities than at Intake, most probably due to the higher number of officers who are available to respond immediately to any altercation and quickly gain control over inmates. These data also reveal that, for both inmates and officers, at both Intake and Jail Facilities, the

Table 15. Injury to Inmates and Officers, by Type of Force Applied, by Location

	Intake				Jails			
	Yes		No		Yes		No	
Type of Force Used	N	%	N	%	N	%	N	%
Injury to Inmate								
Hands-on only	95	9.0	961	91.0	79	14.2	477	85.8
Hands and stun	100	18.6	438	83.4	35	25.9	100	74.1
Hands and spray	1	50.0	1	50.0	4	19.0	17	81.0
Spray and stun	0	0.0	0	0.0	1	9.1	10	90.9
Stun only	9	11.1	72	88.9	11	11.6	84	88.4
Spray Only	0	0.0	1	100.0	8	7.0	106	93.0
Injury to Officer								
Hands-on only	22	2.1	1,051	97.9	73	13.1	485	86.9
Hands and stun	46	8.6	491	93.4	40	29.0	98	71.0
Hands and spray	0	0.0	2	100.0	5	23.8	16	72.2
Spray and stun	0	0.0	0	0.0	1	9.1	10	90.9
Stun only	5	6.1	77	93.9	11	11.6	84	88.4
Spray Only	0	0.0	1	100.0	2	1.8	112	98.2

likelihood of injury is lowest with the application of the pepper spray (due to physical distance and the nature of the incident), is higher with the application of either the stun device or hands-on tactics, and is highest with the application of hands-on tactics in combination with either nonlethal weapon.

Nonlethal Weapons and the Jail Environment

Institutional Climate and Workplace Concerns

One measure of the jail environment is to refer to the institutional climate or the social environment of the workplace for its employees. Because officers and supervisors work daily in a coercive organization structured around a conflict between the keepers and the kept, it is reasonable to expect that anything which impacts on this patterned conflict may affect the broader social climate in which they work. Does the availability of nonlethal weapons affect officer attitudes toward certain aspects of their job?

Six components of the facility's institutional climate were measured during the surveys of officers in 1994, 1995 and 1996. Using Likert scales (see Appendix B, Table 2), these items measured the officers' fear of being attacked by inmates, authority over inmates, job stress, job satisfaction, commitment to the Maricopa County Sheriff's Office and support received from the Maricopa County Sheriff's Office. Since the surveys did not identify individual officers, changes over time among individuals can not be studied. Instead, the analysis looks at the degree of change over time overall, as represented by the arithmetic mean for each survey.

The findings are presented in Table 16; analysis of variance was used, with Tukey's test, to identify statistically significant differences in the mean scores across the three years studied. Perhaps

most interesting of these findings is that there was no observed change over time in either of the two factors which would appear to be most affected by the introduction of nonlethal weapons—fear of attack or authority over inmates. Nor does it appear that the level of support by MCSO was believed to have improved; in fact, it significantly decreased between 1994 and 1995 and then significantly increased between 1995 and 1996. Overall, however, MCSO support for the officers decreases between 1994 and 1996. This decrease not withstanding, there is an increase by 1996 in the officers' commitment to MCSO. Finally, there is a significant decrease over time in the level of job stress and a significant increase over time in the level of job satisfaction.

Table 16. Officer Attitudes to the Institutional Climate, by Year Surveyed

	1994 (N=661)		1995 (N=651)		1996 (N=617)	
Measure of Institutional Climate	Mean	SD	Mean	SD	Mean	SD
Fear of attack	12.13	3.16	12.48	3.20	12.24	3.17
Job stress	14.08^{ab}	3.04	10.28^{a}	3.18	9.87^{b}	3.07
Support by MCSO	13.83^{ab}	3.66	9.30^{ac}	3.63	10.18^{bc}	3.87
Commitment to MCSO	16.26^{a}	2.34	16.18^{b}	4.34	17.30^{ab}	4.37
Job satisfaction	8.60^{ab}	2.85	14.22^{ac}	3.54	14.93^{bc}	3.33
Officers' authority	9.18	2.90	8.92	2.55	8.93	2.42

** a,b,c are symbols to indicate that the differences between these means are statistically significant at $p \leq 0.05$.

Change, or the absence of change, in the institutional climate of these detention facilities may be due to a number of factors. Certainly there were many forces operating during the thirty months between the 1994 and the 1996 surveys, and it is not possible to assert that the introduction and use of nonlethal weapons accounts for all or any part of the changes observed. Indeed, the failure to observe a change in officers' expressed fear of attack or authority over inmates suggests that the weapons had no effect on the officers. Yet, the fact remains that three of these measures of social climate changed in a direction consistent with expectations: there was an increased commitment to the Sheriff's Office, reduced job-related stress, and increased job satisfaction.

Nonlethal Weapons and Disciplinary Actions

As already noted in Tables 3 and 6, more than two-thirds of all officers surveyed stated a belief that the presence of nonlethal weapons would affect inmate misconduct. Furthermore, those officers who were more familiar with the weapons were substantially more likely than those yet to be trained (in 1995) or to use them (in 1996) to believe that the weapons would reduce inmate misconduct within the facility. Finally, it also has been noted already that this is one area about which the officers' attitudes did not improve over time—perhaps because they did not observe any change in the actual amount of misconduct which occurred.

Table 17 offers another look at the affect of nonlethal weapons on inmate misconduct. Institutional records for all disciplinary action reports were available for the period between January 1994 (when the nonlethal weapons were introduced) and August 1996 (one month following the final officer survey). Unfortunately, records for preceding years were not available to serve as baseline data prior to nonlethal weapons.

Table 17. Disciplinary Action Reports, Actual Numbers, by Year, for Jails, Intake, and Total

	Jails except Intake				Intake				All			
	1994	1995	1996	Total	1994	1995	1996	Total	1994	1995	1996	Total
Refusal to obey order	450	489	348	1,287	0	1	0	1	450	490	348	1,288
Failure to stand count	25	36	57	118	0	0	0	0	25	36	57	118
Unauthorized area	71	124	317	512	0	0	0	0	71	124	317	512
Insolence towards staff	133	121	96	350	0	0	0	0	133	121	96	350
Assault on employee/staff	102	154	150	406	0	2	1	3	102	156	151	409

Only five categories of disciplinary action report are examined, each selected because it represents the kind of behavior vis-à-vis officers or institutional rules which are most likely to be affected by the presence of nonlethal weapons. The five categories are: refusal to obey an order, failure to stand count, being in an unauthorized area, insolence toward staff and assaulting staff. The frequency of occurrence for each type of action is reported by year and location in Table 17 and by month in Figure 32.

Of the 2,677 disciplinary action reports for these five categories which occurred in this 32-month period, only four occurred at Intake. The analysis, therefore, addresses changes only within the jail facilities. First, there is a substantial increase in the number of disciplinary reports for being in an unauthorized area. In fact, this increase is so dramatic (from 71 in 1994 to 317 in the first eight months of 1996) that it suggests a change in policy and/or enforcement during this time. The frequency distribution presented in Figure 32 indicates that fewer than 10 reports per month were filed until January 1996 when the frequency increased nearly 300 percent. Whether or not there was a change in policy or enforcement in January 1996 it is clear from these data that there was no decrease in disciplinaries for unauthorized area during the 24 months during which the nonlethal weapons were being introduced.

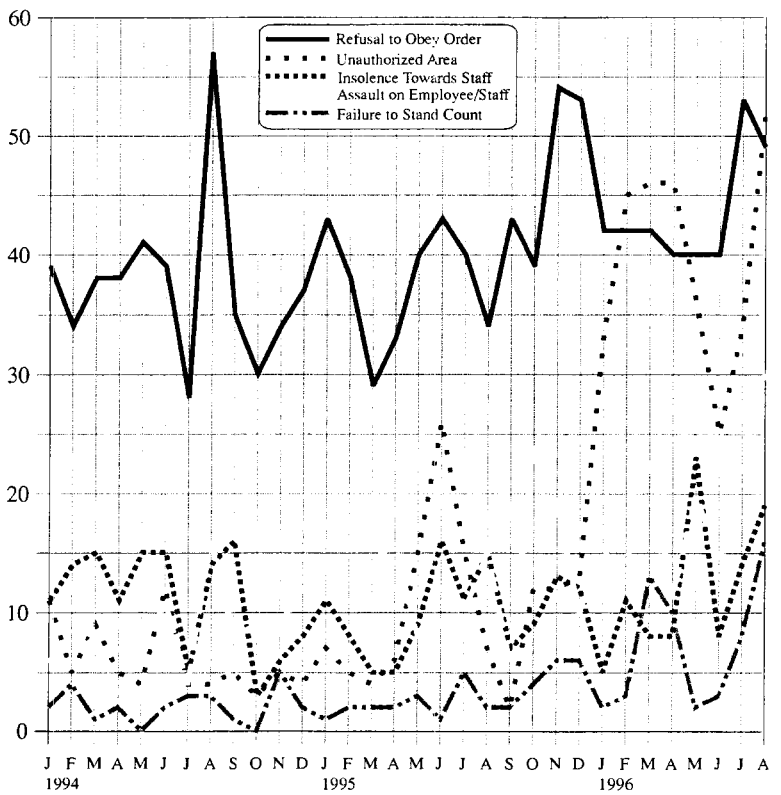


Figure 32. Disciplinary Action Reports, Actual Numbers, by Month, for Jails

There also is a noticeable increase in the disciplinary action reports for failure to stand count, for refusal to obey an order and for assault on a staff member. The number of reports for failure to stand count is not large, but it more than doubles over time as it increases from 25 in 1994 to 36 in

1995 to 57 in the first eight months of 1996. Refusal to obey an order increases slightly over time as it moves from a frequency of 40 or fewer monthly before mid-1995 to a frequency of 40 or more thereafter. Assault on staff reports increase also, from 102 in 1994 to 156 in 1995 and 151 in the first eight months of 1996. Clearly, these increases are contrary to any suggestion that the presence of nonlethal weapons is reducing inmate misconduct.

Only disciplinary action reports for insolence toward staff show any decrease over time that may be related to the introduction of nonlethal weapons. These reports decrease during the summer of 1994 and remain low for nearly a year before increasing again in the fall of 1995. Because the frequency of these reports was already low in 1994, however, there is little room for significant decreases over time and any decrease of the magnitude observed can not be attributed to the arrival of nonlethal weapons.

Nonlethal Weapons and Inmate Grievances Against Officers

The possible affect of nonlethal weapons on inmate grievances against officers is examined with data presented in Table 18 and Figure 33. This analysis uses only grievances filed against officers for excessive force against an inmate, for verbal threats against an inmate, and for inappropriate conduct toward an inmate—which are the three categories most likely to be affected by the introduction of nonlethal weapons. The analysis examines the frequency with which grievances in each of these categories were filed during the period March 1993 (beyond which data were not available) and August 1996. A total of 3,415 grievances were filed during this time, but only one grievance was filed from Intake. Consequently, the analysis refers almost entirely to Jail Facilities.

The frequency of inmate grievances against officers for misconduct began to decline in June 1994, remained at a new low until January 1995, and then increased, approaching its previous level by May 1995. This decrease-then-increase pattern is inconsistent with what might be expected if nonlethal weapons were an aide to the officers' ability to control inmates. On the other hand, there also is no sign that the introduction of weapons increased the frequency of officer misconduct against inmates.

After May 1995, there is a steady and dramatic decrease over the next 12 months in grievances against officer conduct. This decrease could be a positive effect due to the presence of nonlethal weapons, to the federal investigation which began in August 1995, or to some other factors.

Grievances due to verbal threats by officers against inmates are rather rare occurrences throughout the period (with only one grievance during the first eight months of 1996), so there is little room for a substantial decrease that might be attributed to the positive effects of nonlethal weapons. On the other hand, there is no increase observed either, meaning that the introduction of nonlethal weapons does not appear to have "caused" an increase in verbal threats against inmates.

Table 18. Grievance Reports, Actual Numbers, by Year, for Jails, Intake, and Total

	Jails except Intake					Intake					All				
Grievance	1993	1994	1995	1996	Total	1993	1994	1995	1996	Total	1993	1994	1995	1996	Total
Excessive Force	82	151	116	8	357	0	0	0	0	0	82	151	116	8	357
Verbal Threats	34	52	60	1	147	0	0	0	0	0	34	52	60	1	147
Conduct of Officers	1,000	910	872	128	2,910	0	0	1	0	1	1,000	910	873	128	2,911

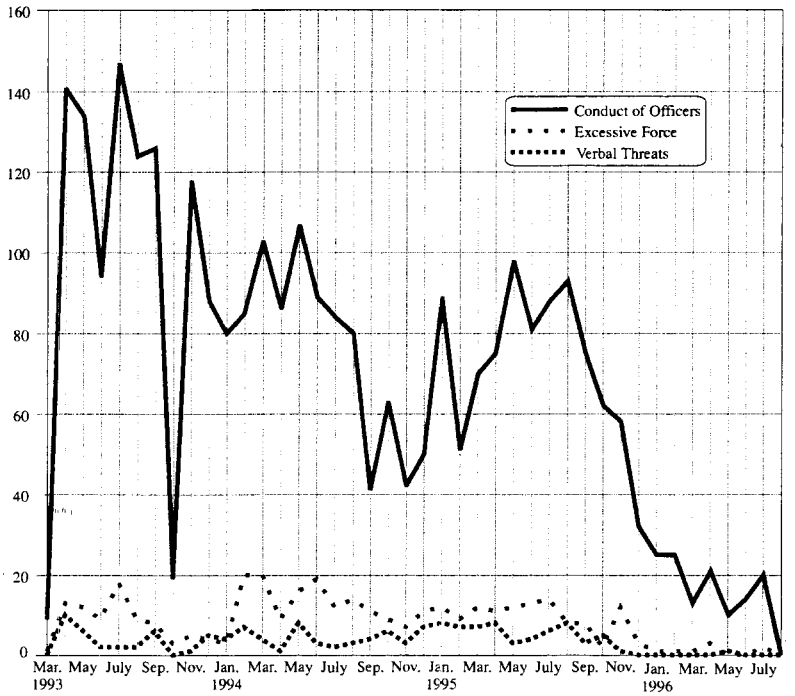


Figure 33. Grievance Reports, Actual Numbers, by Month, for Jails

Excessive force grievances also fail to show any substantial change during the period observed. Always less than 20 grievances per month, the highest frequencies occurred between February and August 1994—during the time when nonlethal weapons were being made available to only supervisors. After that, the frequency of grievances per month is unremarkable, at least until December 1995 when the frequency remains almost zero. The low-but-steady number of inmate grievances for excessive force during this time has two implications. First, the frequency is so low that it would be hard for the introduction of nonlethal weapons (or any other innovation) to demonstrate that it decreased inmate grievances in this area. Second, the fact that it does not rise substantially, especially when the weapons were being introduced to detention officers, can be viewed as an indication that the officers did not use, or abuse, the weapons excessively.

Summary of Findings

Several indicators suggest that both the stun device and the pepper spray are effective means of controlling inmates and reducing injuries to inmates and officers. First, surveyed officers rate the display, threat or application of the stun device and the display or threat of the pepper spray as equally effective, but they view the discharge of the pepper spray as significantly less effective. This is contracted, however, by the Altercation forms, on which officers indicate that the application of pepper spray is more likely to incapacitate the inmate and more likely to be totally effective than is the application of the stun device.

When applied, the pepper spray is equally effective regardless of whether or not it is applied to the face and whether it is applied once or more than once. It is equally effective when applied from distances of two to nine feet, but its ability to incapacitate diminishes sharply when applied from a distance of more than ten feet. The lowest level of injuries to inmates and to officers are reported following incidents in which pepper spray is used.

When applied, the stun device is equally effective regardless of whether or not it is applied directly to the torso, but it is somewhat more effective when applied to inmates who are not impaired by alcohol, illicit drugs, or emotional problems. Injuries to inmates and to officers occur in nearly 20 percent of all incidents in which the stun device is used, but in only about 10 percent of all incidents in which only the stun device is used. There are fewer injuries to inmates and officers at

Intake than at jail facilities, which is probably due to the ability of several officers to gain immediate control over an inmate. The finding that stun device incidents have a greater frequency of injury than those incidents which involved only hands-on tactics reflects the fact that the stun device is often used in combination with hands-on tactics; that is, that the level of physical resistance to the officer is greater and the use of both the stun device and the hands-on tactics represents a high level of force being used than when either the stun device or the hands-on tactics are used alone.

The introduction and use of nonlethal weapons produced few measurable effects on the jail environment. As measures of the institutional climate of the jails and Intake facility, job satisfaction did increase over time, job stress did decrease over time, and the officers' commitment to the Sheriffs' Office did increase over time. However, the officers' feeling that they had the support of the Sheriffs' Office decreased over time and there was no change observed in either the officers' level of fear of being attacked by inmates or the officers' perceived level of authority over inmates.

The effect of the introduction of nonlethal weapons on inmate misconduct is examined by looking for changes over time in the frequency of disciplinary action reports for inmate refusal to obey an order, failure to stand count, being in an unauthorized area, insolence toward staff and assault on staff. No changes are noted during the observation period. Nor are there observed changes during this period in the number of inmate grievances filed against officers for excessive force, verbal threats, or conduct. These findings suggest that the use of the nonlethal weapons did not affect inmate misconduct. They also indicate that the use of nonlethal weapons neither increased nor decreased the level of grievances filed against officers.

Chapter 5

Summary and Conclusions

Nonlethal weapons are available in most American prisons and jails, but typically these weapons are rarely used. In some cases, the weapons are retained in the facility's arsenal and are used only in response to group disorder and riots. In other cases, nonlethal weapons are distributed to only a few officers who perform specialized functions, such as to members of the cell-extraction team or to supervisory officers. Compared to these other prisons and jails, the Maricopa County Sheriff's Office is unique in that it has trained and armed all its detention officers with nonlethal weapons. A handheld stun device and a spray cannister of oleoresin capsicum, widely known as pepper spray, were adopted because it was believed that their presence and use within the jails would increase the officers' safety within the jails, improve the officers' ability to control noncompliant inmates, and, when inmates must be restrained by force, reduce the likelihood of injuries to both inmates and officers.

In 1994, the Maricopa County Sheriff's Office began the process of training and equipping all its detention officers with nonlethal weapons. Funded by the National Institute of Justice, the National Sheriffs' Association supplied the Sheriff's Office with enough stun devices and pepper spray canisters to arm the nearly 900 officers working within the Intake Center and each of the six jails operated by the Sheriff's Office. The need to train each supervisory officer in each facility before training each detention officer in each facility resulted in a staggered implementation among the seven facilities over a 16-month period. During this time, the departmental policy regarding the use of force was modified to reflect changes in the placement of these nonlethal weapons on the continuum of force—first as a preferred alternative to, and a lower level of force than, hands-on contact with inmates, and later as equivalent to hands-on contact.

Also funded by the National Institute of Justice and the National Sheriffs' Association, this study uses official records, confidential interviews with officers, and anonymous surveys of officers to examine the adoption and use of nonlethal weapons within the seven facilities between January 1994 and July 1996. These data provide information on the number and nature of the use of force incidents that occur and on the effectiveness of nonlethal weapons as an alternative to traditional hands-on tactics in these situations. The analysis of these data examines the weapons' usefulness and effectiveness in custody facilities and their impact on measures of control and physical safety. In analyzing these data and in reaching our conclusions, we have been very careful to "factor in" the confounding effects created when, in August 1995, the U.S. Department of Justice initiated an investigation into allegations that conditions at the Maricopa County jails violated inmates' consti-

tutional rights, specifically with regard to excessive force by officers and denial of adequate medical care.

The focus of this research is on those incidents in which force is used by detention officers or supervisors against inmates. For evaluation purposes, the analysis focuses on three types of force: pepper spray, stun device and the conventional hands-on tactics. There are three levels of force that may be used inasmuch as each type of force may be displayed, threatened, or applied. More than one type of force may be used in any single incident, and the level of force used may vary for each type of force used. Therefore, "use of force" refers to any incident in which one or more types of force (i.e., pepper spray, stun device or hands-on tactics) were employed at one or more levels (i.e., displayed, threatened or applied).

Information regarding use-of-force incidents was obtained from the Maricopa County Sheriff's Office official Altercation Form, which is a two-page reporting form completed by the principal officer involved in the incident and reviewed by the supervisory officer. In 1994 and 1995, there were a total of 2,995 reported incidents in which force was threatened or applied against a total of 3,250 inmates. Of these, 1,808 altercations were reported from the Intake Center, and the number occurring among the six jail facilities varied from a low of 29 at the 1st Avenue jail to a high of 369 at the Madison Street jail. The monthly frequency of reported altercations varies over time. Very few altercations were reported in early 1994 when the Altercation reporting form was first introduced, and there was a noticeable decrease in volume in late 1995 after the federal inquiry had begun. For the 12-month period between August 1994 (after the Altercation form had become more routinely adopted) and July 1995 (immediately prior to the federal investigation), there was an average of 150 reported altercations each month: 94 per month from Intake and 56 per month from the jails.

Findings

Adoption and Use of Nonlethal Weapons

Initially, nonlethal weapons received only limited support among command staff, supervisors and detention officers. Most accepted the argument that these weapons would reduce injuries and increase control over inmates, but there were serious concerns about the presence and use of nonlethal weapons within the jails. Command staff were concerned about the possible contamination effects if pepper spray were discharged within closed facilities and about possible misuse or abuse of the nonlethal weapons. Detention officers voiced similar concerns, as well as the fear that the nonlethal weapons might be taken from, and used against, officers. With training and experience in the use of the nonlethal weapons, however, the level of support for both weapons increased over time. There was only one reported incident in which pepper spray contaminated an area and only one reported incident in which an officer's weapon was seized by an inmate; the few incidents in which the nonlethal weapons were misused occurred early and the officer involved was sanctioned. Thirty months after the nonlethal weapons were first introduced, command staff, supervisory officers and detention officers strongly supported the presence and use of nonlethal weapons in all facilities.

The acceptance of the nonlethal weapons also is documented by the pattern of usage during the observation period. First, pepper spray was not used in Intake, where the fear of contaminating

officers and noninvolved inmates was heightened by the large number of officers working in close proximity and the use of large holding cells to house inmates. Second, the stun device was more rapidly adopted and widely used than the pepper spray in the jails. Third, the frequency of the use of nonlethal weapons increased gradually, reaching a point at which they were used nearly as often as hands-on tactics. With little change in the total frequency of altercations over time, the increased use of nonlethal weapons coincided with a decreased use of hands-on tactics. Finally, the stun device often was used in conjunction with, rather than as a substitute for, hands-on tactics to control noncompliant inmates.

Nonlethal Weapons and the Use of Force

Of the nearly 1,400 incidents occurring within the jails, officers reported that 30 percent of the incidents were appropriate for the use of pepper spray and that 55 percent were appropriate for the use of the stun device. Pepper spray was never considered to be appropriate in Intake, where half of the 1,880 incidents reportedly were appropriate for the use of the stun device. In comparison, pepper spray was used in 19.5 percent of all the jail incidents and the stun device was used in 34 percent of all the jail incidents and in 40 percent of all the Intake incidents.

Traditional hands-on tactics were used in nearly 60 percent of all Intake incidents and 46 percent of all jail incidents. Hands-on tactics also were used in conjunction with a stun device in over 27 percent of all reported incidents and with pepper spray in about 2 percent of all reported incidents. Stated differently, more than 75 percent of all reports of the use of a stun device and 20 percent of all reports of pepper spray use also involved the use of hands-on tactics.

Hands-on tactics were never displayed or threatened; they were applied in virtually every incident in which they were used in Intake and in jail facilities. For nonlethal weapons, however, the level of use varied between Intake and the jail facilities. In jails, both the pepper spray and the stun device were nearly as likely to be displayed or threatened as to be actually applied: displayed or threatened in about 45 percent of the incidents of use and applied in about 55 percent of the incidents of use. In Intake, in contrast, the stun device was displayed or threatened in fewer than 15 percent of all reported incidents in which it was used. For both nonlethal weapons, but especially for pepper spray, there is a clear and sustained pattern over the course of the two years in the level of force used: the proportion of uses in which the weapon is displayed or threatened increases and the proportion of uses in which the weapon is actually applied decreases. By the end of the study period, nearly 40 percent of all incidents in which the stun device was used and nearly 70 percent of all incidents in which the pepper spray was used involved only a display or threat of the weapon and not its application to the inmate.

Impact on Control of Inmates: Effectiveness and Incapacitation

In both confidential interviews and anonymous surveys, command staff, supervisory officers, and detention officers firmly state their belief that the nonlethal weapons have increased their control over inmates and reduced inmate misconduct within all facilities. Further, these officers considered the display or threat of the nonlethal weapons to be as effective as their application. Officers who had used the weapons were more likely than those who had not used the weapons to view the weapons as needed within their facility and as effective means of controlling inmates.

These general opinions are consistent with the Altercation Form's incident-specific assessments of the weapons' effectiveness and incapacitation ability. The inmate was reported to be incapacitated to the point of no resistance in nearly 74 percent of all pepper spray applications, 63 percent of all stun device applications at Intake, and 42 percent of all stun device applications within jails. Consistent with these reports, 78 percent of all applications of the pepper spray, 72 percent of all applications of the stun device in Intake and 52 percent of all applications of the stun device within jails were evaluated by the using officer to be "totally effective." The effectiveness and incapacitation ability of pepper spray did not vary by inmate gender or size or by the point of contact with the inmate; they did diminish by the distance from which the pepper spray was applied, but only after the distance exceeded 10 feet. Pepper spray also was reported to be more effective in those situations that involved inmate-to-inmate altercations or group disturbances and in incidents in which the inmate was armed. The stun device was equally effective regardless of the inmate's gender or size, the point of application to the body, or the level of the inmate's resistance to the staff. The stun device was much less effective when applied to inmates who were impaired, however, and especially so with those whose impairments were due to illegal drugs or emotional problems rather than alcohol consumption.

Impact on Injuries to Inmates and Officers

In both interviews and surveys, command staff and officers uniformly state a belief that the presence of nonlethal weapons has reduced injuries to both inmates and officers. Numerous case studies and other experiences are cited by officers to illustrate how the mere display or threat of the nonlethal weapons has served to terminate a dangerous situation without the use of the kind of physical force and hands-on tactics that might have resulted in injuries. These widely shared views are supported by the information obtained from the Altercation Form.

During the two-year period, a total of 507 inmates and 304 officers or supervisors sustained some level of injury as a result of an altercation in which force was applied against an inmate. Pepper spray had the lowest likelihood of injury, with injuries occurring to fewer than 9 percent of the inmates and 5 percent of the officers involved in situations in which pepper spray was applied. When only the traditional hands-on tactics were used, injuries occur to inmates in 9 percent of all Intake incidents and 15 percent of all jail incidents, and injuries occur to officers in 2 percent of all Intake incidents and 13 percent of all jail incidents. The application of the stun device resulted in injuries to inmates in 18 percent of all Intake incidents and 20 percent of all jail incidents and injuries to officers in 8 percent of all Intake incidents and 21 percent of all jail incidents. The lower probabilities of injury in Intake than in jail reflects the fact that Intake has a much greater number of officers who are immediately available to respond to any altercation and to quickly overwhelm the inmate. The higher probability of injury when the stun device is applied than when only traditional hands-on tactics are used reflects the finding that three-fourths of the uses of the stun device are in conjunction with hands-on tactics, suggesting that more force was needed in those situations to control the inmate.

Impact on Jail Environment

Using three different measures, there is no indication that the adoption and use of nonlethal weapons has affected the general social conditions or institutional climate within the detention facilities. One

measure of change in the institutional climate is observed by examining changes in officers' attitudes toward the workplace, as reflected in changes over time in the level of job satisfaction, job stress, commitment to the Sheriffs' Office, perceived support from the Sheriffs' Office, fear of being attacked by inmates, and level of authority over inmates. A comparison of the mean scores at three observations over a 30-month period indicates that there were no changes in the two factors that are most likely to be affected by the introduction of nonlethal weapons: fear of attack by inmates and level of authority over inmates. However, there was a significant decrease in the officers' job-related stress and a significant increase in both their commitment to the Sheriffs' Office and their job satisfaction.

Disciplinary actions are another measure of institutional climate, especially when they reflect the kind of behavior vis-à-vis officers and institutional rules that are most likely to be affected by the introduction of nonlethal weapons. If nonlethal weapons reduce inmate misconduct, then there should be a decrease over time in disciplinary action reports for one or more of five types of misconduct: refusal to obey an order, failure to stand count, being in an unauthorized area, insolence toward staff, and assault on employee/staff. During the 32 months for which data were available, there were 2,671 disciplinary action reports for these five categories of misconduct within the jail facilities (and only four within Intake). Despite the increase in the number of inmates confined during the two years of the data collection, 1994 and 1995, there is neither a decrease nor an increase in the monthly frequency of any of the five types of disciplinary action reports. Between the end of 1995 and the middle of 1996, however, there is a very sharp increase in the monthly occurrence of disciplinary action reports for being in an unauthorized area and a very gradual increase in reports for each of the other four disciplinary categories. These increases may be due to a variety of factors, but they are contrary to any suggestion that the presence of nonlethal weapons is reducing inmate misconduct.

Inmate grievances against officers also are examined as a measure of institutional climate. At best, nonlethal weapons may reduce the number of grievance-producing verbal and physical confrontations between inmates and officers; at worst, the misuse and abuse of nonlethal weapons may generate increased numbers of inmate grievances against officers. The three types of grievance most likely to be affected are excessive force against an inmate, verbal threats against an inmate, and inappropriate conduct toward an inmate. During the observation period, beginning prior to the introduction of nonlethal weapons and extending for 41 months, there were a total of 3,415 grievances filed for one of the three types, and only one of these originate from Intake. During this time, there was a sharp and steady decline in the monthly frequency of inmate grievances for inappropriate conduct toward an inmate. The monthly frequency of grievances filed due to excessive force or verbal threats remained unchanged for most of this period, but did decrease visibly by the end of 1995. These findings suggest that nonlethal weapons did not increase inmate grievances and may have significantly decreased grievances against officers for inappropriate conduct toward an inmate.

Conclusions

We began this research with the goal of answering certain questions about the use of force within jails and how the presence of nonlethal weapons might impact on broad issues of control and safety within the jail environment. Our findings suggest the following summary conclusions.

1. Jails are widely known to be characterized by a high frequency of inmate-staff altercations. This is true in the Maricopa County jail facilities, especially in its Intake Center. Given the rather routine occurrence of these incidents, a safe and effective means of control is important to the officers and to the inmates.

2. There is organizational resistance to changes in the way routine activities are conducted. Nonlethal weapons represent a change to the traditional practice of "soft" or "hard" hands-on tactics to control inmates, and the weapons may be viewed as unnecessary, inappropriate, or counterproductive by large segments of the organization's personnel. This initial resistance is overcome rather quickly with strong leadership from the top, comprehensive training of all officers and on-the-job experiences with nonlethal weapons.

3. Written use of force policies and procedures must clarify the levels of force appropriate in response to the various situations or threats that arise, always calling for the minimum force needed. The policy should indicate which weapons or tactics are authorized for use, state when and how officers will be trained to use such weapons, define any situations or persons against whom the weapons will not be used, and provide specific directions for or limitations to the use of each weapon. The policy also should include reporting requirements, review procedures, and a statement of disciplinary actions possible for the excessive use of force.

4. Nonlethal weapons have become an integral tool in the officers' response to altercations with inmates. Nonlethal weapons appear to be appropriate for nearly two-thirds of all altercations, and they were used in nearly half of all altercations. Further support for the importance of the weapons is found in the fact that nearly half of all uses of the weapons require only a display or threat and not an actual application to the inmate.

5. The stun device was quickly adopted and frequently used in altercations. Appropriate for most situations, the stun was used in more than half of all altercations. It tended to be applied rather than simply displayed or threatened, especially in Intake, and it was often applied in conjunction with hands-on tactics. When applied, the stun tended to be used by a responding second officer rather than by the principal officer involved in a hands-on use of force situation, and it tended to be used when only one inmate was involved in the altercation.

6. The pepper spray was slowly adopted and infrequently used in altercations. Appropriate for only a minority of situations, and never for situations in Intake, it seldom was used in conjunction with hands-on tactics. When used, pepper spray was equally likely to be applied as to be merely displayed or threatened. It was more likely to be used when only one officer was involved with more than one inmate, especially in controlling inmate-to-inmate altercations.

7. Nonlethal weapons are not a general deterrent to future inmate misconduct, but they are a specific deterrent to continued misconduct when used. There is no indication that the presence and use of nonlethal weapons reduces the frequency of inmate misconduct and altercations within either Intake or the jails. When used in specific situations, however, the mere display or threat of a nonlethal weapon often is enough to control the inmate and terminate the altercation.

8. When applied, nonlethal weapons are effective in gaining control over noncompliant inmates. Except when used against inmates with a mental or substance impairment, both the stun device and the pepper spray are likely to totally incapacitate noncompliant inmates, and their level of effectiveness is consistently high regardless of the gender or size of the inmate, the manner in which the weapon is used, or the degree of resistance encountered.

9. The impact of nonlethal weapons on the likelihood of injuries to inmates and officers is difficult to assess, but it appears that this likelihood is reduced. The presence of nonlethal weapons does not decrease the number of altercations in which force is used (point 7, above), but it does decrease the likelihood that hands-on tactics will be used. Since virtually every instance of hands-on tactics involves actual contact with an inmate, and since nearly half of all uses of nonlethal weapons involve only the display or threat of use rather than the actual application of the weapon, the result is a lessening of the number of altercations in which physical contact or force is actually used. The less physical contact with inmates, the lower the likelihood of injury to inmates and officers.

10. Nonlethal weapons appear to have little affect on the institutional climate of jails. When an apparent effect is observed, it is a positive effect. Over time, officer attitudes toward their workplace did not change for those aspects most likely to be affected by the introduction of nonlethal weapons, but there was a significant increase in job satisfaction and a significant decrease in job-related stress. There was no visible change over time in the frequency of salient disciplinary action reports against inmates. The frequency of inmate grievances alleging inappropriate conduct by officers did decrease substantially, however.

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Appendix A

From The Sheriff:

Non-Lethal Weapons: The Beginning

The Maricopa County Sheriff's Office is all but abandoning physical force as the primary way to restrain unruly prisoners and instead will rely on non-lethal pepper sprays and stun devices that promise reduced injuries to both lawmen and criminals.

The use-of-force policy is being revised to eliminate a requirement that deputies and detention officers use non-lethal devices only if they are unable to subdue prisoners in hand-to-hand struggles.

By using non-lethal devices to end confrontations, deputies and detention officers are less likely to suffer injuries, and so are prisoners.

I ordered detention officers armed with non-lethal devices after Officer Ray Layton was hospitalized by stab wounds inflicted by an inmate in the Madison Street Jail.

The weapons have been issued to supervisors at Estrella and In-Tents Jails. All Detention Officers should have pepper spray and stun guns within a year.

The National Sheriffs' Association selected the Maricopa County Sheriff's Office to conduct a federally financed study on utilization of non-lethal weapons in jails. Most of a $100,000 grant will be used for weapons purchases.

Professor John Hepburn from Arizona State University will conduct an evaluation of the non-lethal weapons as they are introduced into the jail system. The study, to continue for more than a year, is designed to determine if the pepper sprays and stun devices reduce confrontations and injuries to detention officers and inmates.

The policy for several years has so discouraged non-lethal devices that many deputies do not carry pepper sprays. Any use of a non-lethal device has subjected deputies to extensive interrogation and paperwork. That is no longer true.

A restrictive policy discouraging the use of non-lethal weapons was established in 1991, after deputies used stun devices against demonstrators at a public hearing for a proposed hazardous-waste disposal plant near Phoenix. Environmental interests leveled "brutality" charges at deputies at the time.

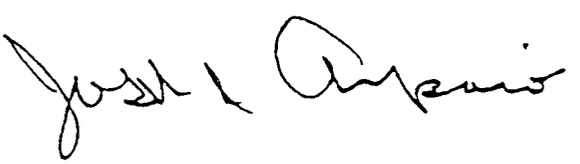
I'm not saying that non-lethal devices are appropriate for crowd control. Nor am I insisting on the use of non-lethal weapons when a firm hand on an arm or an authoritative nudge promises to do the job. But when suspects or jail inmates refuse to respond peacefully to lawful instructions, the pepper spray or stun device certainly is more efficient and humane than heavy physical force.

Non-lethal weapons quickly incapacitate resistive prisoners, who normally recover from their discomfort in about a half hour, or even sooner with decontamination treatment.

Professor Hepburn has devised some user-friendly reporting forms that will provide the data he needs to make a penetrating analysis of the use of non-lethal weapons in jail. These forms are neither difficult, nor time consuming and it is important for detention officers to complete them for Professor Hepburn's study. I have directed supervisors to make certain that the forms are not used for any other purpose.

Scientists are working on some exciting new non-lethal weapons, including one that restrains prisoners with a sticky coil of rope-like material sprayed from a can. Other agencies doubtless will rely on non-lethal weapons instead of physical force once the result of the pioneering work here is documented.

The Maricopa County Jails were selected for the non-lethal weapons study because our detention officers are professionals who do it right — whatever the task. I'm confident that tradition will continue as the non-lethal weapons are issued and the policy becomes standard throughout the jail system.



MARICOPA COUNTY SHERIFF'S OFFICE
Policy and Procedure

Subject	Policy Number
USE OF FORCE AND AUTHORIZED WEAPONS	GJ-1
	Effective Date: 05-27-94
	Supersedes: GJ-1 (05-08-92)

INTRODUCTION

This Policy establishes guidelines and procedures regarding the use of force by Office employees in the performance of their duties, and authorized lethal and nonlethal weapons. All personnel authorized to carry weapons shall be instructed in this Policy, and be provided with a copy of it prior to being authorized to carry a weapon.

POLICY AND PROCEDURE

1. DEFINITIONS: For the purpose of this Policy, the following terms shall apply:

   A. Deadly Force: That force which creates a substantial risk of death or serious physical injury.

   B. Force: Any action applied to or directed against the body of a person causing him to act, move, or comply against his resistance, by the use of hands-on physical means, nonlethal weapons, mechanical devices, or lethal weapons. *

   C. Handgun in a Law Enforcement Capacity,: Any handgun carried by a peace officer in the course of his duties, in or out of uniform, or, off-duty, carried concealed, or in any manner legally unavailable to a citizen.

   D. Officer: Any deputy, detention officer, reserve deputy, or posse member, who is engaged in the performance of law enforcement or detention duties for the Maricopa County Sheriff's Office.

   E. Passive Resistance: Failure to comply with a clearly stated lawful order, but without offering physical resistance. A detention setting may have included the display of a nonlethal weapon by detention personnel. *

2. In all situations requiring the use of force, officers shall use only that degree of force which is reasonable and necessary under the circumstances. The degree of force actually used, or the degree of escalation or de-escalation dictated by the situation, shall be based on articulable facts, as perceived by the officer at the time.

3. The Training and Development Division shall develop, implement, and monitor programs designed to provide training in the use of force, defense tactics, and weapons use. All officers shall successfully complete the training requirements appropriate to their classification. as set forth by Training and Development, prior to assignment to law enforcement or detention duties.

4. After any use of force, officers shall determine whether the individual against whom the use of force was directed has sustained any injury as a result of that force. Appropriate medical treatment will be provided when necessary.

5. Force may be used where verbal control is, or has become, ineffective or impractical. When the use of force is necessary, officers may use nonlethal weapons to accomplish their lawful duties. However, the application of *

force in custodial situations may differ from that used in enforcement.

A. In custodial settings, passive resistance can pose a considerable risk to detention personnel, who then * must enter confined areas, often occupied by other inmates. Passive resistance may therefore justify the use of force in the jails. In these settings, after appropriate warning and display, oleoresin capsicum spray or a stun device may be used as a preferred alternative to hands-on force, since hands-on force often results in officer or suspect injury, and these weapons are designed to incapacitate without injury. This does not apply to the use of a baton, which is likely to cause injury. and therefore requires a greater justification for its use.

B. In enforcement settings, passive resistance is normally not sufficient, in itself, to justify the use of * force. Nonlethal weapons should not be used for the purpose of gaining compliance when no force is being directed at the officer or another person. This does not preclude the use of compliance techniques in arrest situations.

6. The carotid artery control technique may be used by those trained in its use in an Arizona Law Enforcement Officers Advisory Council (ALEOAC) certified defensive tactics course, when lesser means are not effective or practical to restrain, control, or subdue a physically violent suspect who is a hazard to himself, an officer, or others. The hold shall be used only after all other efforts have failed, and the level of force needed is approaching that which would require the use of deadly force. In all cases where an officer uses the carotid artery technique, a written report shall be forwarded to the user's immediate supervisor as soon as possible, and forwarded through the chain of command to the Sheriff. The report shall contain specific reasons and circumstances for the use of the hold. The report shall be retained on file in Training and Development.

7. Deadly force shall only be exercised when all reasonable alternatives known to the officer have been exhausted, or appear impractical.

A. An officer may use deadly force to protect himself or others from what he reasonably believes to be an immediate threat of death or serious bodily harm.

B. An officer may use deadly force to effect the capture of, or to prevent the escape of, a suspect, only if the suspect has committed a felony involving the use of, or threat of, deadly force, and if the officer has probable cause to believe that the suspect poses a significant and immediate threat of death or serious physical injury to the officer or others, and when feasible, a verbal warning has been given.

C. The decision to use deadly force must be based upon the facts known or perceived by the officer at the time.

D. Officers shall fire their weapons to stop and incapacitate an assailant to prevent him from completing a potentially deadly act, as described in the applicable sections of this Policy. For maximum stopping effectiveness and minimal danger to innocent bystanders, the officer should shoot at the center of body mass.

8. Officers shall not knowingly discharge a firearm under circumstances that would subject bystanders, or other innocent persons to death or serious bodily injury.

9. Warning shots shall not be fired.

10. Except for general maintenance. storage, or authorized training, officers shall not draw or exhibit a firearm unless the circumstances surrounding the incident create a reasonable belief that it may be necessary to use the firearm in conformance with the provisions of this Policy.

11. Officers shall not discharge a firearm at, or from, a moving vehicle. except as an ultimate measure of self-defense

or defense of another, when all other means are ineffective or impractical.

12. The use of a firearm to kill an animal is justified for self-defense, to prevent substantial harm to the officer or another, or when the animal is injured to the degree that humanity requires its relief from further suffering, and other methods of disposal are impractical. In all such cases, the officer shall ensure that the action taken does not endanger any person.

13. Officers shall only carry and use firearms and ammunition which have been authorized or issued by the Office.

14. In all incidents where the use of force or deadly force becomes necessary in the discharge of an officer's duties, either on or off scheduled duty hours, and such use of force results in injury, alleged injury, or death, the following procedures for reporting such use shall be used:

    A. The officer will, as soon as practical, make a verbal report to an on-duty supervisor. An accurate and precise description of the incident and the reasons for employing force will be included in the appropriate written Incident Report (DR), or, if no DR is written, in memorandum form to his immediate supervisor.

    B. In cases where any use of force has resulted in serious bodily injury or death to a suspect or other person, the incident will be investigated by the Critical Incident Investigation Team (CIIT). A written report of the incident will be prepared by the CIIT.

    C. In all cases, excluding training and recreational activities, where a firearm is discharged either intentionally or accidentally, a verbal report shall be made immediately to the on-duty supervisor. As soon as possible, a detailed written report shall be initiated and submitted for review.

    D. Incidents which involve the intentional discharge of a firearm in the performance of lawful duties by an officer, or the accidental discharge of a firearm, which results in injury or death to any person, will be investigated by the CIIT.

15. Personnel shall successfully meet the appropriate training and qualification requirements as set forth by Training and Development, prior to being authorized to carry or use any weapon, or ammunition, in a law enforcement capacity, or for authorized officers to use the carotid artery hold in the performance of their duties. Supervisors shall verify the training records of subordinates to confirm their qualification to carry and use weapons, including Oleoresin Capsicum spray, an electronic stun device, or a baton.

16. Personnel are prohibited from carrying any type of offensive or defensive weapon not authorized by this Policy. This shall not preclude an employee from using whatever means necessary for self-defense in exigent circumstances, so long as the actions are necessary and reasonable under the provisions of this Policy.

17. All personnel authorized to use firearms in the performance of their lawful duties shall carry one of the following service handguns while on duty:

    A. Uniformed personnel shall carry a revolver or a semi-automatic handgun.

        1. The revolver shall be six (6) shot double action, with a barrel length of not less than three and * one-half (3 1/2) or more than six (6) inches. The weapon shall be manufactured by Colt, Ruger, or Smith and Wesson, and shall be of .38 special, .357 magnum, .40 S&W, 10mm. .41 Magnum, .44 Magnum, or .45 acp caliber.

2. The semi-automatic handgun shall be single action or double action, in a caliber of 9mm parabellum, .40 S&W, 10mm, or .45 acp. The single action pistol shall be manufactured by Colt. The double action pistols shall be manufactured by Beretta, Colt, Glock, Ruger, Sig Sauer, or Smith and Wesson.

B. Nonuniformed personnel authorized to use firearms in the performance of their duties may carry any of the following:

1. A service handgun meeting the requirements for uniformed personnel.

2. A five (5) or six (6) shot, double action revolver with a barrel length of not less than two (2), * nor more than six (6) inches, of 9mm parabellum, .38 special, .357 magnum, .40 S&W, 10mm, .41 Magnum, .44 Magnum, or .45 acp caliber.

3. A semi-automatic pistol of .380 acp, 9mm parabellum, .40 S&W, 10mm, or .45 acp caliber. * Barrel length shall not be less than two (2) inches nor more than six (6) inches. Approved manufacturers shall be Astra, Beretta, Browning, Colt, Glock, Heckler-Koch, Mauser, Ruger, Sig Sauer, Smith and Wesson, Star, or Walther.

18. All weapons shall be maintained in a factory condition suitable for law enforcement use unless proposed * modifications are first approved by the Office Armorer. For example, neither extended magazine wells nor compensators will be permitted, and the use of trigger shoes is prohibited.

A. Magazines used in semi-automatic pistols shall be limited to those made by the manufacturer, for the * specific weapon. Extended magazines, made by the weapon's manufacturer, are authorized.

B. Night sights, or replacement grips may be added without prior approval. However, replacement grips * shall not be ornate or flashy. Care should be taken to select grips which do not impair the function or loading of the weapon.

19. Compensated, sworn personnel and reserve officers may take action in felony or serious misdemeanor incidents * that occur in their presence, and they may carry a concealed firearm while off-duty. They shall exercise discretion as to where and when it is carried. The display or use of such firearms shall be governed by the same Policies which apply to on-duty personnel.

A. The off-duty firearm may be any handgun meeting the requirements of Section 17.B. of this Policy.

B. Personnel who choose not to carry a firearm off-duty are not relieved of the obligation to take * reasonable action when observing a felony or serious misdemeanor offense in progress.

20. Posse members are not authorized to carry concealed firearms while they are in uniform, or while attending or * participating in any Office or posse activity, or otherwise providing service to the Office or their posse organization. Posse members who have been issued a valid Concealed Weapon Permit by the State of Arizona, and have an articulable reason for carrying a concealed weapon, will require individual approval by the Community Services Division Commander to do so during any Office or posse activity. At any other time, posse members are afforded the same rights and obligations as any private citizen regarding firearms.

21. Non-sworn employees are afforded the same rights and obligations as any private citizen regarding firearms, * and if granted a valid Concealed Weapon Permit by the State of Arizona, may exercise that right as long as they are not in uniform or wearing Office insignia, or working for or acting on behalf of the Office, or any other Agency of Maricopa County. They shall nor carry concealed firearms while in any County facility or vehicle, or while performing any Office related service in a paid status. Any employee with an articulable reason for carrying a concealed weapon, will require individual approval from his Bureau Commander to do so during any posse activity.

22. The authorized shotgun is an Office-owned, 12-gauge, slide-action (pump) firearm. Specifications, such as barrel length, stock, and magazine capacity for shotguns used for the various activities of the Office shall be determined by command staff and Training and Development.

23. The authorized general purpose rifle shall be a semi-automatic firearm of .223 caliber. The weapon shall be * manufactured by Ruger, Colt, Bushmaster/Quality Parts, Eagle Arms, Essential Arms, Fabrique National, SGW/Olympic Arm), or Heckler-Koch. A bureau commander, or his designee, may authorize personnel within his command to carry and use a personally owned general purpose rifle. All personnel who elect to carry a personally owned general purpose rifle shall first successfully complete an Office-approved rifle training course.

24. Personnel assigned to the Tactical Support Division or other special duty units may be authorized by their * bureau commander, or his designee, to carry and use a variety of firearms and special purpose weapons to meet the requirements of their assigned duties.

A. Personnel shall complete the appropriate training requirements prior to carrying or using any special purpose weapon or firearm.

B. Only Office-owned or specifically approved and inspected personal firearms or special weapons may be carried or used.

C. The authorization to carry and use a special purpose weapon or firearm shall only apply as long as the * individual is assigned to duties within the authorizing bureau.

25. All service or off-duty handguns and general purpose rifles shall be inspected by the Training and Development Armorer for safe operation, prior to being carried in a law enforcement capacity, and shall be re-inspected annually.

A. Any individually owned firearm which is repaired or modified in any way, except for the addition of * night sights, or the replacement of grips, shall be inspected by the Training and Development Armorer before being carried or used.

B. Office-owned firearms shall not be repaired or modified except by, or at the direction of, the Training and Development Armorer.

26. Authorized, individually owned firearms shall be made of stainless steel, or be chrome plated, nickel plated, black or blue anodized, blued, or parkerized.

27. Personnel shall ensure that firearms used in a law enforcement capacity are kept clean and serviceable. Office-owned firearms in service at activities outside of the training range shall be maintained by a designated employee who has completed a firearms maintenance course provided by Training and Development.

28. Personnel shall not clean firearms while on duty. unless otherwise instructed or authorized to do so.

29. All on-duty personnel authorized to carry and use firearms shall carry and have in their immediate possession a service firearm authorized for their assignment. Exceptions to this Policy are as follows:

A. When required to remove the firearm upon entering a jail.

B. When required to remove the firearm while in attendance at a court.

C. When required to remove the firearm on a domestic air carrier as provided in Federal Aviation Regulations. Nonuniformed or uniformed personnel involved in extraditions and using a domestic air carrier shall comply with Federal Aviation Regulations and related amendments, as well as procedures established by the Court Services Division Commander.

D. When the officer's authority to carry a firearm has been revoked in accordance with this Policy.

E. Command officers in administrative positions are exempt when the carrying of a weapon is inappropriate.

30. Shotguns will be carried in vehicles in a gun rack, a scabbard, or a case, and in a ready condition, with magazine loaded, chamber empty, action closed, and safety on. Shotguns not in use will be secured in a ready condition in the district or unit facility, in a locked cabinet or gun rack.

31. General purpose rifles will be carried in an appropriate rifle case or gun rack, and secured in the vehicle. The rifle will be carried in ready condition, with chamber empty, action closed, and a loaded magazine inserted.

32. All personnel shall exercise extreme care in the handling of firearms. An accidental discharge may subject the individual to disciplinary action.

A. Personnel shall not cock the hammer on double action firearms.

B. There shall be no practicing with, or drawing of, a firearm in any Sheriff's Office building, except under supervision at an authorized training event.

C. Personnel shall not load or unload any firearm inside any Office facility. Personnel shall use great care when unloading firearms outside of Office facilities, and shall use safety devices, such as "unloading traps," when they are available.

D. Firearms which come into the control of an officer pursuant to his duties, shall be unloaded and rendered safe.

E. Firearms seized as evidence shall be rendered safe as soon as practical after any necessary forensic processing. Extreme caution shall be used during such processing, and the number of personnel handling the weapon shall be kept to the absolute minimum.

33. It shall be the responsibility of Training and Development to test and evaluate the various types and brands of ammunition available, including handgun, shotgun, and rifle ammunition, and to make recommendations to the command staff based on their findings. Training and Development will then obtain and store sufficient quantities of the approved and authorized ammunition to meet Office needs.

A. Personnel shall carry only Office-issued ammunition in any firearm used in a law enforcement capacity. This shall also apply to off-duty weapons.

B. Uniformed personnel shall carry sufficient extra ammunition to provide two (2) complete reloads for their service firearm.

C. Nonuniformed personnel shall carry sufficient extra ammunition to provide one (1) complete reload for their service firearm.

D. Extra ammunition for off-duty firearms may be carried in any reasonable quantity, at the discretion of the officer.

E. Individually carried service ammunition shall be replaced, through Training and Development, at least once every twelve (12) months.

F. Districts and units shall maintain a sufficient supply of Office-issued ammunition for Office shotguns and rifles. and individual authorized firearms, to meet the demands of emergency situations.

G. Extra ammunition will be stored in a secure, cool, and dry place, and strict inventory and accountability

will be maintained.

H. Extra ammunition carried in vehicles should be protected from excessive heat. Ammunition carried in vehicles should be rotated frequently to prevent damage.

I. Issued ammunition shall not be altered or modified.

34. Weapons qualification requirements are as follows:

A. All personnel authorized to carry service firearms shall qualify with those weapons, at least annually, in an ALEOAC approved course of fire. The service handgun is defined in section 17, A or B, of this Policy, and the general purpose rifle is defined in Section 22.

1. Authorized personnel will be permitted to qualify with, and be issued ammunition for, a maximum of two (2) primary firearms, one (1) off-duty firearm, and a general purpose rifle.

2. All personnel shall comply with range regulations as established by Training and Development and the range master, and shall use Office-issued ammunition for Office-mandated practice and qualification.

3. Training and Development shall establish and publish criteria and procedures by which authorized personnel may qualify for a shooting proficiency badge.

4. All personnel making the transition from a revolver to a semi-automatic handgun shall first attend an Office-approved semi-automatic handgun training course.

B. Authorized personnel who choose to carry an off-duty handgun must qualify with that specific handgun on an ALEOAC course of fire before carrying the handgun in a law enforcement capacity for the first time. Thereafter, those carrying off-duty handguns must pass an annual familiarization course, as prescribed by Training and Development. This course, less than ALEOAC qualification, requires the shooter to demonstrate requisite familiarity and proficiency in handling the handgun.

C. All personnel who carry a shotgun in the course of their assigned duties shall qualify with the Office shotgun at least annually. Personnel who fail to qualify with the Office shotgun, as required above, will be prohibited from carrying or using the shotgun in the performance of their duties.

D. Enforcement lieutenants and sergeants, personnel who have access to the Office-approved rifle in the * course of their assigned duties, or those who have elected to carry a personally owned rifle, shall qualify with it at least annually. Personnel who fail to qualify with the general purpose rifle, as required above, will be prohibited from carrying or using the rifle in the performance of their duties.

E. Authorized personnel who fail to meet the requirements for firearms qualification will have their authorization to carry a firearm in conjunction with their duties suspended, and off-duty firearm use will be limited to that available to any unrestricted citizen. An individual whose authority to carry a firearm has been suspended shall be assigned to administrative duty within his assigned division pending requalification. Off-duty work in a law enforcement capacity shall also be prohibited. The following will constitute failure to meet requirements:

1. Failure to qualify, or attempt to qualify, with the service handgun each calendar year.

2. Failure to pass, or attempt to pass, a decision making course each calendar year.

3. Failure to qualify, or attempt to qualify, with the Office-authorized shotgun or rifle each calendar year, as applicable for each assignment.

4. Failure to qualify in a second attempt with the service handgun. The next available remedial course will be mandatory.

5. Failure to qualify in a second attempt with the Office-approved shotgun or rifle, when required by this Policy. The next available remedial course will be mandatory.

6. Failure to initially qualify with a back-up or off-duty handgun, or thereafter fail to pass, or attempt to pass, an annual familiarization course for personnel who are authorized to carry off-duty handguns. This failure shall suspend the authority to carry off-duty handguns.

F. Any volunteer who fails to qualify on a second attempt shall be prohibited from performing any law enforcement function until successfully qualified with a service handgun. Failure to qualify within a reasonable time period, as determined by the Sheriff, shall subject the volunteer to dismissal from the program.

G. Upon failing to qualify, an employee is required to immediately notify his supervisor. Training and Development will notify the employee's commander, in writing.

35. Personnel who complete appropriate training may be authorized to carry and use nonlethal weapons, as * approved by their respective bureau commanders. Every use of a nonlethal weapon by an officer shall require the submission of a Non-Lethal Weapons Use Report to be forwarded through the chain of command to Training and Development, as soon as possible. The following nonlethal weapons are authorized:

A. Oleoresin Capsicum spray: Individual canisters capable of delivering a temporarily incapacitating * aerosol spray shall be of a brand and type currently approved by the Office, and shall be Office-issued. Evaluating and testing different types and brands of chemical sprays shall be the responsibility of the Planning and Research Division.

1. The carrying and use of Oleoresin Capsicum spray may be optional or mandatory, depending * on assignment, as directed by the bureau commander.

2. For maximum effectiveness, a targeted suspect should be at a distance of not less than three * (3) feet, nor more than ten (10) feet. To be effective, the spray should come in contact with the face of the target. Any area of the body, especially the eyes, that comes in contact with Oleoresin Capsicum spray shall be rinsed with water as soon as possible.

B. Electronic Stun Device: Planning and Research shall be responsible for testing and evaluating the * various types and makes of electronic stun devices. Electronic stun devices shall be inspected by the Training and Development Armorer at least once every twelve (12) months to ensure proper operation. The alteration of any electronic stun device is prohibited. The officer carrying the stun device shall ensure that the batteries are in a serviceable condition.

1. The carrying and use of an electronic stun device may be optional or mandatory, depending on * assignment, as directed by the bureau commander. All officers shall successfully complete a training program, as required by Training and Development, prior to carrying or using an electronic stun device.

2. When the use of the stun device is warranted, officers will attempt to avoid application to a subject's head, neck, or groin, or to the female breasts.

3. The electronic stun device shall not be used against obviously pregnant women.

4. The number of applications shall be limited to the minimum necessary to subdue the individual.

5. The subject should be restrained as soon as possible after the use of the stun device.

C. Police Batons: Officers may carry a straight baton, a metal expandable baton, or a side-handle baton, at their discretion. When carried, a baton shall not be altered in any way to increase its potential for injury, such as by weighting or loading.

1. Passive resistance is not sufficient, in itself, to justify the use of a baton.

2. Officers shall not intentionally use a baton against a subject's head, neck, face, or groin, or * against the female breasts.

3. All officers must successfully complete an approved training course intended for the specific type of baton chosen, prior to being authorized to carry or use a baton.

4. When the use of a baton is justified, it shall be used in a manner consistent with the guidelines and training received from Training and Development.

D. In the event it becomes necessary to use a flashlight as a defensive weapon, officers will use it in the same manner as a baton.

36. Personnel engaged in the performance of law enforcement functions shall not carry any weapon or firearm which is not specifically authorized. Prohibited weapons include, but are not limited to, the following:

A. Saps, blackjacks, leaded gloves, or other weighted impact weapons.

B. Numchakus or any similar offensive weapon.

C. Daggers, stilettos, or any other type of knife, other than a common folding-blade knife or pocket knife.

37. Training and Development shall develop, implement, and monitor programs designed to provide training in the use of authorized weapons.

38. The Office maintains two (2) armories.

A. One (1) is located in the Tactical Support Division building, and is administered by the Tactical Operations Unit (TOU). This armory is a restricted area, and accessibility is limited to the Sheriff, Enforcement Commander, Tactical Support Division Commander, or TOU personnel. Its contents are weapons and equipment used by TOU, or required for emergency operations. Personnel entering the armory, other than designated command officers, shall be accompanied by TOU personnel. Anyone entering the armory shall sign in and out, and sign for all equipment removed, on the log provided inside the armory.

B. Training and Development also maintains an armory. Among the equipment stored there are ammunition, special weapons, and Office-owned revolvers and semi-automatic pistols. These are available on short term loan to officers temporarily without a weapon for such reasons as the theft of their own weapon, having to surrender it for a shooting investigation, financial hardship, or the need for a specialized weapon in a new assignment. Armory access is limited to training personnel. Requests to borrow Office-owned weapons should be directed through the chain of command to Training and Development. When approved, the armorer will issue a weapon, if available, that conforms to the needs of the officer. In an emergency, the armorer is on call through the Communications Supervisor.

JOSEPH M. ARPAIO
SHERIFF

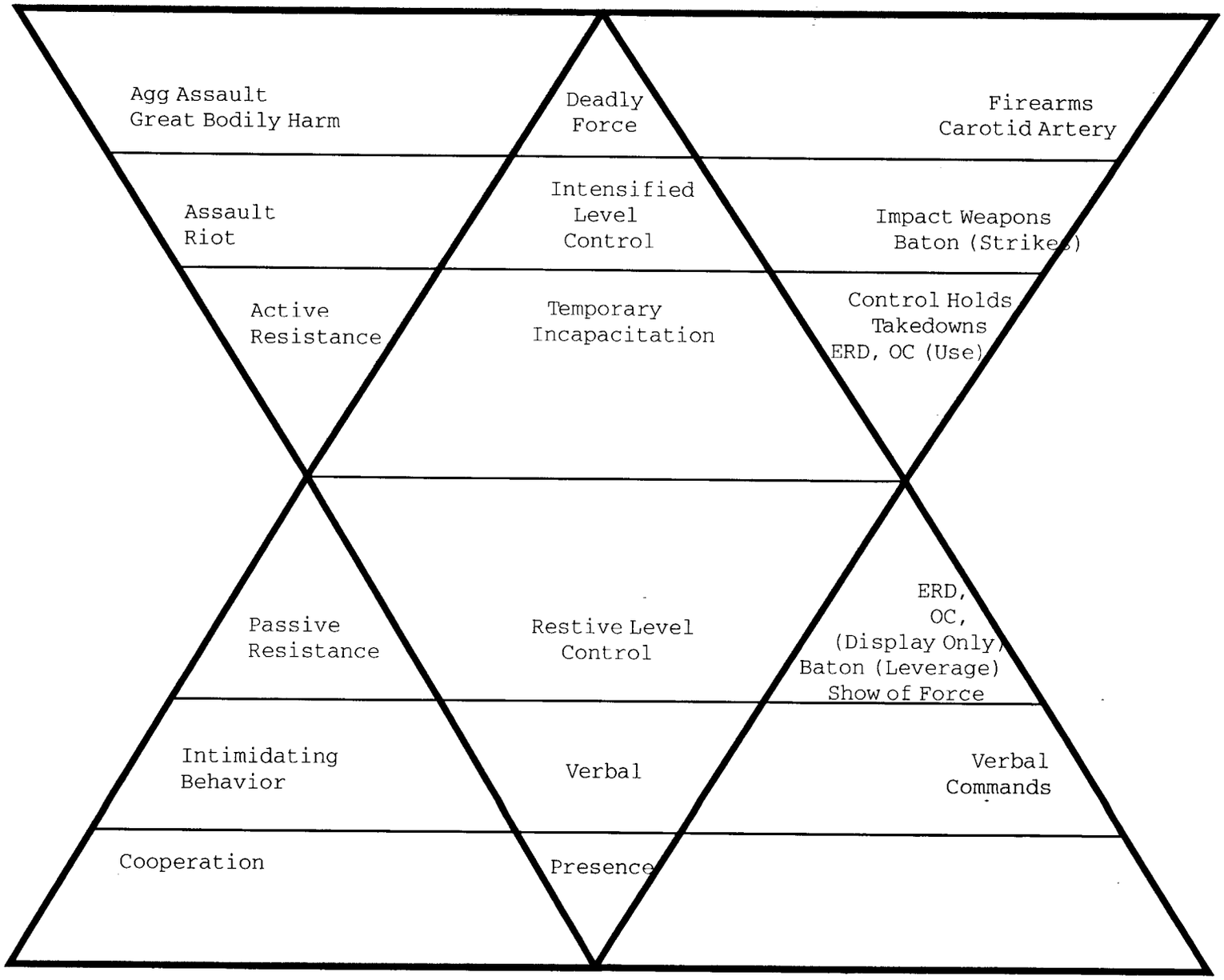


Figure A1. Continuum of Force

Sheriff Joseph M. Arpaio
MARICOPA COUNTY SHERIFF'S OFFICE
Altercation Form - Custody

Officer Name_____ Serial #_____ Facility_____

QUESTIONS 1-7 REFER TO THE **INITIAL INCIDENT ONLY** AND NOT TO YOUR RESPONSE TO THE INCIDENT

1. DATE _____/_____/_____

2. TIME _____ (military)

3. LOCATION AT FACILITY
A. Indoors:
_____ within cell or room
_____ in hallway, visitor
_____ in recreation area
_____ in dayroom or common area
_____ in booking/holding/receiving
_____ other(specify)_____

B. Outdoors:
_____ in tent compound
_____ in recreation area
_____ other _____ (specify)

4. TYPE OF INCIDENT
_____ solo inmate disturbance (screaming/throwing)
_____ inmate to inmate(argue/fight/assault)
_____ inmate to outsider (visitor)
_____ inmate to staff (refuse order/assault)
_____ group disturbance (3+) Total #_____
_____ other(specify) _____

5. SEVERITY OF INCIDENT (check all that apply)
_____ refusing to comply
_____ shouting/yelling
_____ shoving/pushing
_____ hitting/kicking/wrestling
_____ hit/slash/stab with weapon
_____ other(specify)_____

6. AMOUNT OF HARM DURING INITIAL INCIDENT (check all that apply, for each person involved)

	No Visible Injury or Complaint of Pain	No Visible Injury, But Complaint of Pain	Minor Injury, No First Aid	First Aid at Facility Medical Unit	Treated by Outside Doctor/ Hospital
Any Officer					
1st Inmate					
2nd Inmate					
3rd Inmate					
Any Visitor					

7. INFORMATION ON INMATES INVOLVED

	1ST INMATE	2ND INMATE	3RD INMATE
a. Name	_____	_____	_____
b. Booking Number	_____	_____	_____
c. Date Of Birth	_____/_____/_____	_____/_____/_____	_____/_____/_____
d. Sex	Male Female	Male Female	Male Female
e. Race (White/Af-Amer/Hisp/Other)	_____	_____	_____
f. Body Frame	Sm Med. Large	Sm Med Large	Sm Med Large
g. Custody Level (if unknown, UNK)	_____	_____	_____
h. Prior Violence	Yes No Unknown	Yes No Unknown	Yes No Unknown
i. Impaired at the Time	Yes No Unknown	Yes No Unknown	Yes No Unknown
If yes, type of Impairment: (Drugs, Alcohol, Mental)	_____	_____	_____

QUESTIONS 8-10 REFER TO THE **INITIAL RESPONSE BY STAFF** TO THE INCIDENT

8. WAS SUPERVISOR CALLED TO OR AT SCENE: Yes No If not, why?_____

9. LEVEL OF RESISTANCE TO STAFF AT SCENE
_____unarmed inmate, no resistance
_____unarmed inmate, some resistance
_____unarmed inmate, threatened staff
_____unarmed inmate, attacked staff
_____armed inmate, no resistance
_____armed inmate, threatened staff
_____armed inmate, attacked staff

9a. If armed, type of weapon_____

9b. If armed, did inmate:
_____display weapon
_____threaten to use weapon
_____actually use (attempt to use) weapon

10. IN RESPONDING TO THE INCIDENT DESCRIBED ABOVE, WAS FORCE **DISPLAYED**, **THREATENED**, OR **ACTUALLY USED**? Yes No
a. If yes, who used force? Officer Supervisor Both

b. If no, describe what happened: _____

c. If **YES**, please continue to question 11.

REVISED OCTOBER 1994

INFORMATION REGARDING INMATE #1 (FROM FRONT PAGE) **INMATE NAME:** _____

11. DESCRIPTION OF OFFICER/SUPERVISOR USING FORCE. PERSON COMPLETING FORM IS THE 1ST OFFICER.

	1st Officer	2nd Officer	3rd Office
Name	_____	_____	_____
Age	_____	_____	_____
Sex	Male Female	Male Female	Male Female
Body Frame	Sm Med Lg	Sm Med Lg	Sm Med Lg

12. INDICATE THE TYPE OF FORCE, HOW IT WAS USED, AND ITS EFFECTIVENESS. CIRCLE THE CORRECT ANSWER.

			HOW USED			EFFECTIVENESS OF USE			
TYPE OF FORCE	USED		Display	Threaten	Actual Use	Total	Partial	Little	None
Oleoresin Capsicum	Yes	No	D	T	U	T	P	L	N
Stun Device	Yes	No	D	T	U	T	D	L	N
Hands On	Yes	No	D	T	U	T	D	L	N
Other (_____)	Yes	No	D	T	U	T	D	L	N

13. WHEN FORCE WAS USED, WAS THERE INJURY TO INMATE? **Yes No**
IF YES, DESCRIBE INJURY: _____

IF INJURED, WAS INMATE: Treated by Doctor Transported to Hospital Both Neither

14. WHEN FORCE WAS USED, WAS THERE INJURY TO OFFICER/SUPERVISOR? **Yes No**
IF YES, DESCRIBE _____

15. WERE THE CONDITIONS OF THIS INCIDENT APPROPRIATE FOR THE ACTUAL USE OF OLEORESIN CAPSICUM? **Yes No**
WHY OR WHY NOT? _____

16. WERE THE CONDITIONS OF THIS INCIDENT APPROPRIATE FOR THE ACTUAL USE OF A STUN DEVICE? **Yes No**
WHY OR WHY NOT? _____

17. IF OC OR STUN DEVICE WAS ACTUALLY USED, ANSWER THE FOLLOWING:

	OC	STUN DEVICE
a. Distance sprayed:	_____	N/A
b. Number of Applications	_____	_____
c. Application Point on Body	_____	_____

d. Was inmate incapacitated to the point of no resistance? **Yes No**
e. Describe the actions of inmate after application: _____
f. Was decontamination needed? **Yes No** If yes, describe: _____

==========

INFORMATION REGARDING INMATE #2 (FROM FRONT PAGE) **INMATE NAME:** _____

11. DESCRIPTION OF OFFICER/SUPERVISOR USING FORCE. PERSON COMPLETING FORM IS THE 1ST OFFICER.

	1st Officer	2nd Officer	3rd Office
Name	_____	_____	_____
Age	_____	_____	_____
Sex	Male Female	Male Female	Male Female
Body Frame	Sm Med Lg	Sm Med Lg	Sm Med Lg

12. INDICATE THE TYPE OF FORCE, HOW IT WAS USED, AND ITS EFFECTIVENESS. CIRCLE THE CORRECT ANSWER.

			HOW USED			EFFECTIVENESS OF USE			
TYPE OF FORCE	USED		Display	Threaten	Actual Use	Total	Partial	Little	None
Oleoresin Capsicum	Yes	No	D	T	U	T	P	L	N
Stun Device	Yes	No	D	T	U	T	D	L	N
Hands On	Yes	No	D	T	U	T	D	L	N
Other (_____)	Yes	No	D	T	U	T	D	L	N

13. WHEN FORCE WAS USED, WAS THERE INJURY TO INMATE? **Yes No**
IF YES, DESCRIBE INJURY: _____

IF INJURED, WAS INMATE: Treated by Doctor Transported to Hospital Both Neither

14. WHEN FORCE WAS USED, WAS THERE INJURY TO OFFICER/SUPERVISOR? **Yes No**
IF YES, DESCRIBE _____

15. WERE THE CONDITIONS OF THIS INCIDENT APPROPRIATE FOR THE ACTUAL USE OF OLEORESIN CAPSICUM? **Yes No**
WHY OR WHY NOT? _____

16. WERE THE CONDITIONS OF THIS INCIDENT APPROPRIATE FOR THE ACTUAL USE OF A STUN DEVICE? **Yes No**
WHY OR WHY NOT? _____

17. IF OC OR STUN DEVICE WAS ACTUALLY USED, ANSWER THE FOLLOWING:

	OC	STUN DEVICE
a. Distance sprayed:	_____	N/A
b. Number of Applications	_____	_____
c. Application Point on Body	_____	_____

d. Was inmate incapacitated to the point of no resistance? **Yes No**
e. Describe the actions of inmate after application: _____
f. Was decontamination needed? **Yes No** If yes, describe: _____

IF 3RD, 4TH, OR MORE INMATES INVOLVED, USE ADDITIONAL FORMS TO REPORT ON THOSE INMATES.

SUPERVISOR _____ DATE _____

Appendix B

Table B1. Characteristics of Survey Respondents

	1994 N=661 %	1995 N=651 %	1996 N=617 %
Gender			
Male	73.7	73.5	73.3
Female	25.1	24.9	25.6
Missing	1.2	1.7	1.1
Ethnicity			
White	79.7	79.6	82.8
Hispanic	11.0	11.7	8.4
African American	4.4	3.7	4.2
Asian	0.5	0.5	0.5
Other	2.6	1.1	1.1
Missing	1.1	2.5	2.1
American Indian	0.8	1.1	0.8
Rank			
Detention Officer	80.6	81.3	84.6
Supervisory Officer	13.6	12.9	14.9
Missing	5.7	5.8	0.5
Mean Age (in years)	36.8	37.8	36.1
Mean Tenure (in months)	70.2	80.1	72.2
Education			
High School	36.9	38.6	37.6
More Than High School	57.8	57.9	58.7
Missing	5.3	3.5	3.7

Table B2. Descriptive Statistics for All Institutional Climate Scales

Variable	No. of Items	Value Range	Mean	Standard Deviation	Inter-Item Correlation Coefficient	Alpha Reliability Coefficient
Authority	2	2–10	5.4	1.9	.46	0.63
Fear of Victimization	4	4–20	12.2	3.2	.31–.47	0.70
Job Satisfaction	6	6–30	22.2	4.8	.41–.64	0.86
Job Stress	4	4–20	9.9	3.1	.26–.55	0.71
Organizational Commitment	5	5–25	17.3	4.4	.54–.68	0.82
Organizational Support	4	4–20	10.2	3.9	.48–.66	0.84

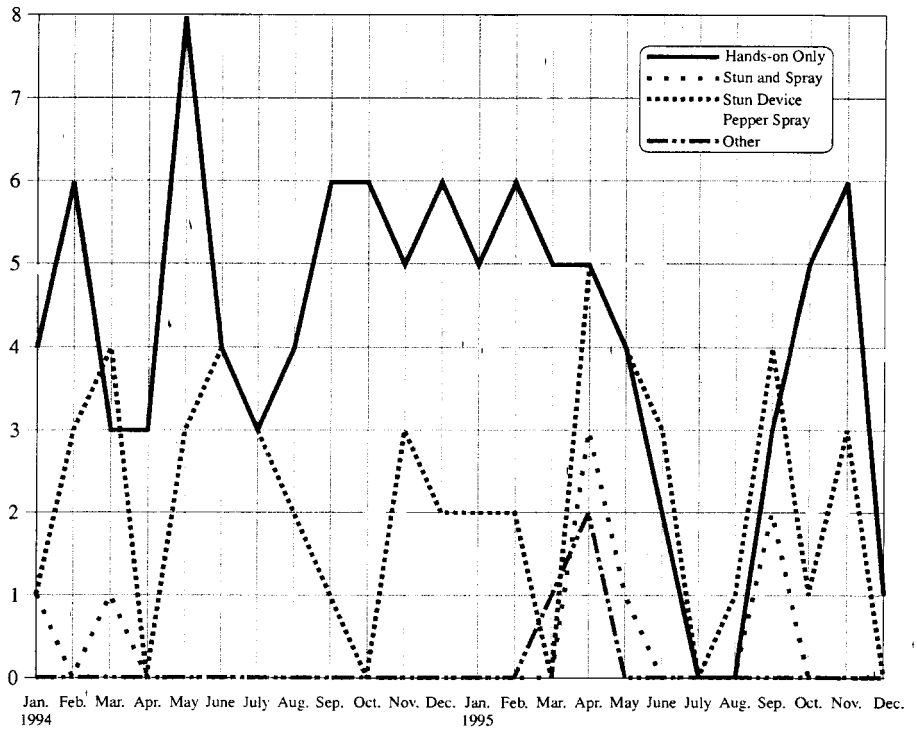


Figure B1. Frequency of Use of Force Incidents, by Type, by Month, for Estrella

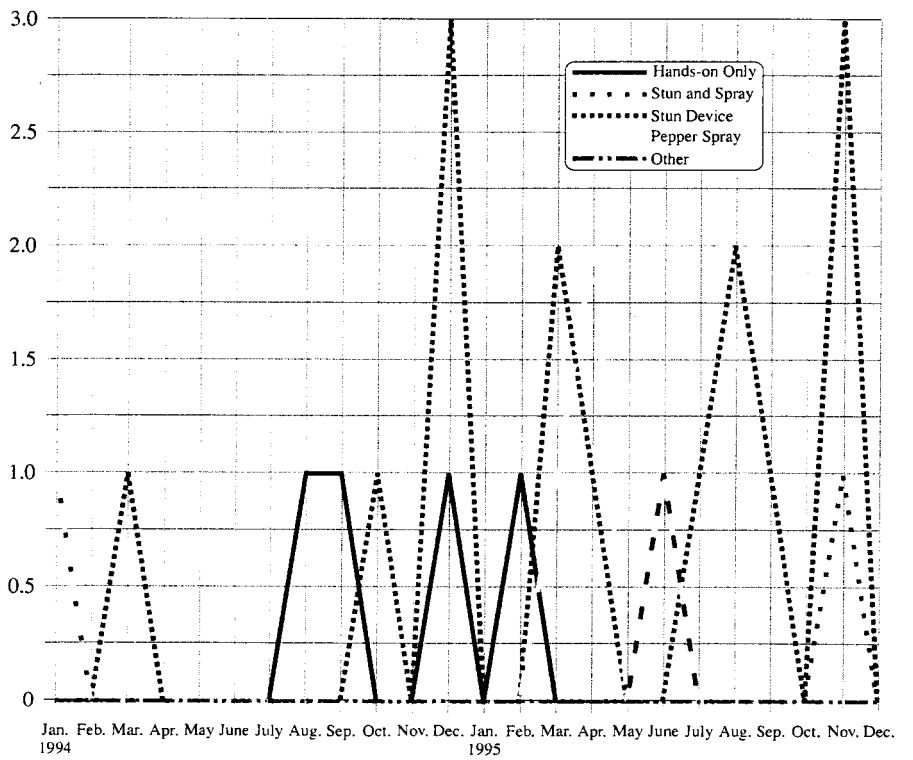


Figure B2. Frequency of Use of Force Incidents, by Type, by Month, for 1st Avenue

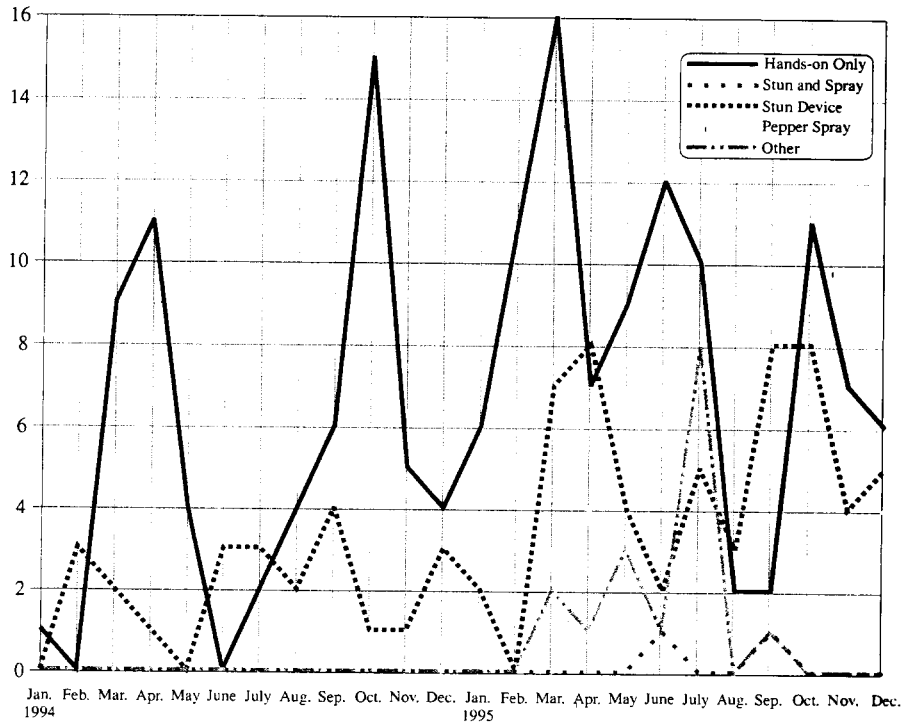


Figure B3. Frequency of Use of Force Incidents, by Type, by Month, for Towers

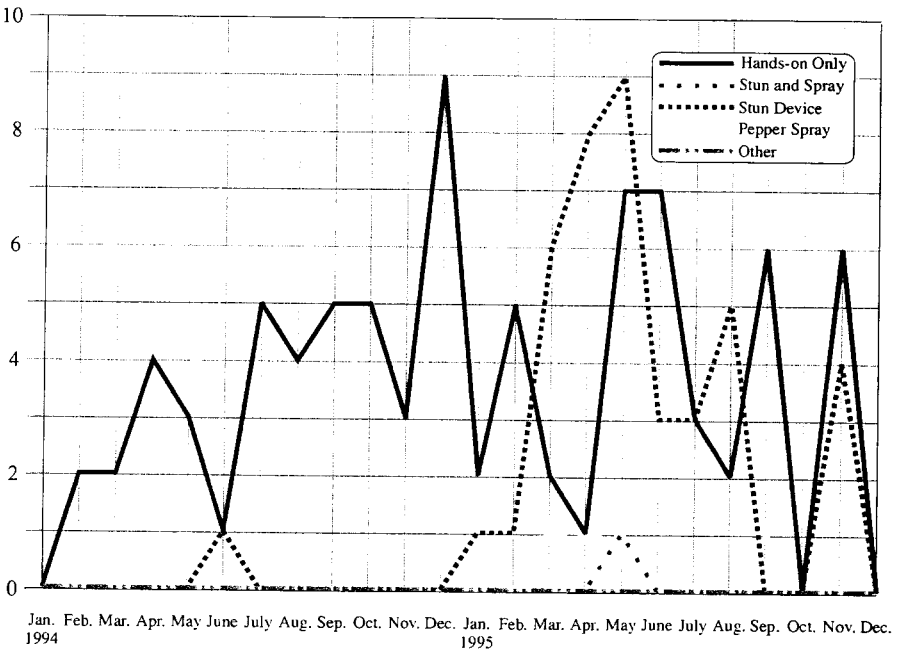


Figure B4. Frequency of Use of Force Incidents, by Type, by Month, for Durango

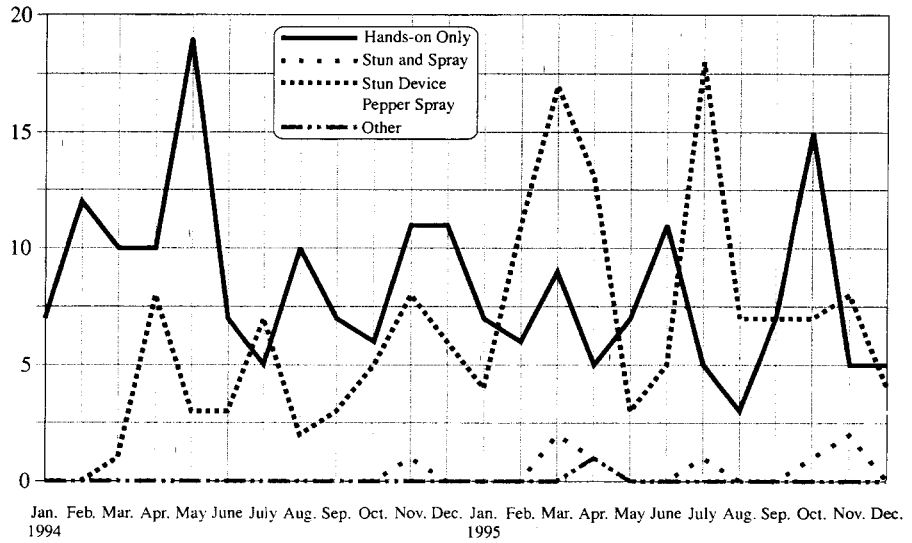


Figure B5. Frequency of Use of Force Incidents, by Type, by Month, for Madison Street

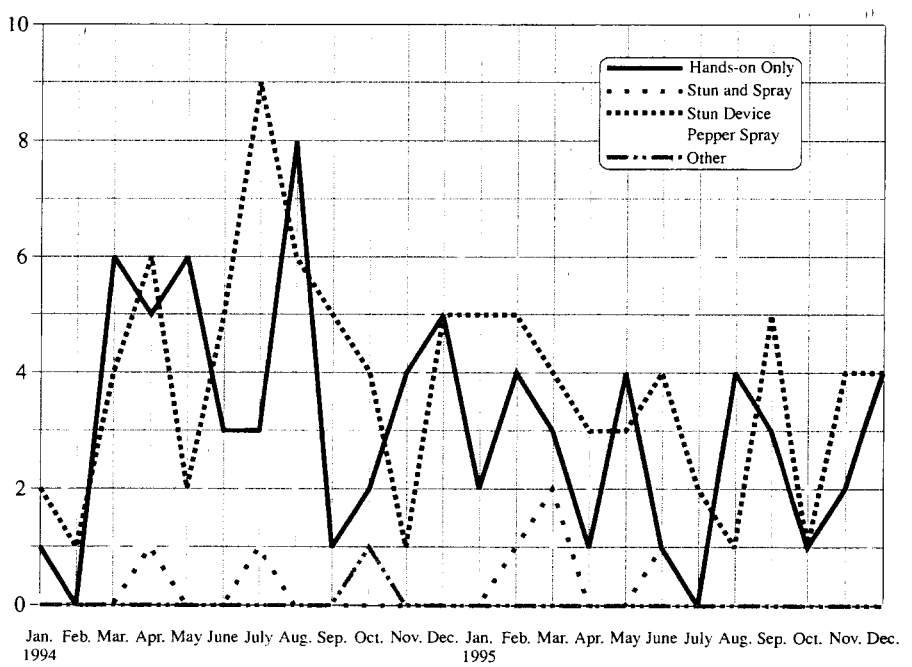


Figure B6. Frequency of Use of Force Incidents, by Type, by Month, for In-Tents

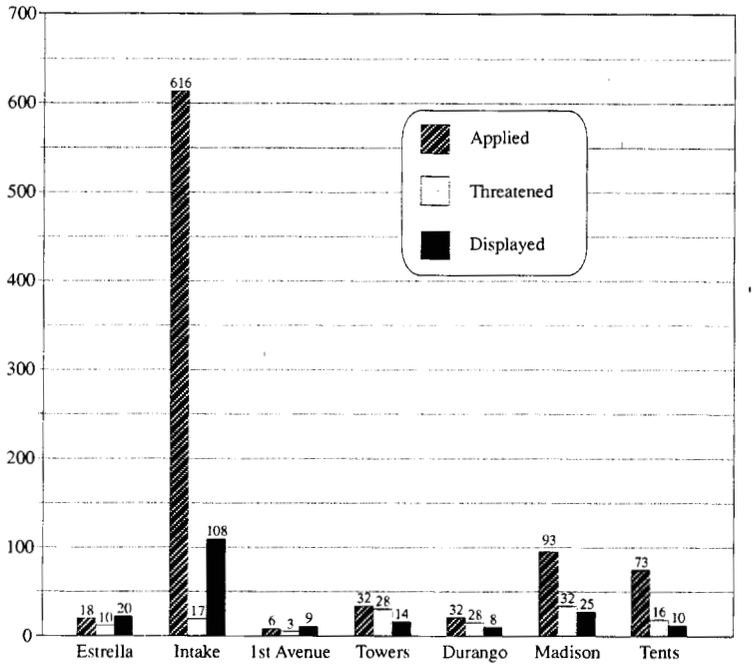


Figure B7. How Stun Device Was Used, by Facility

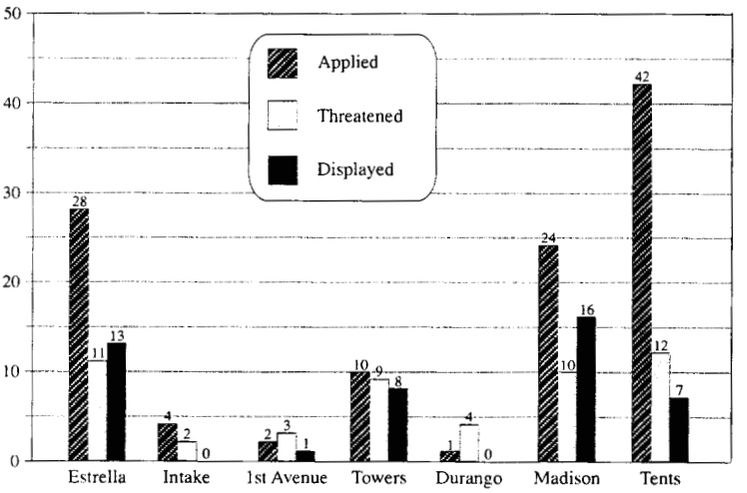
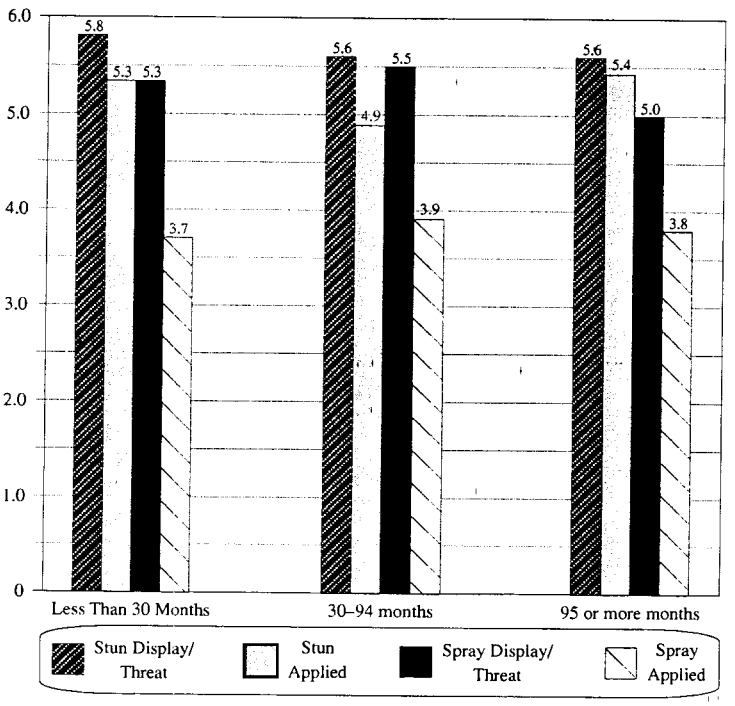
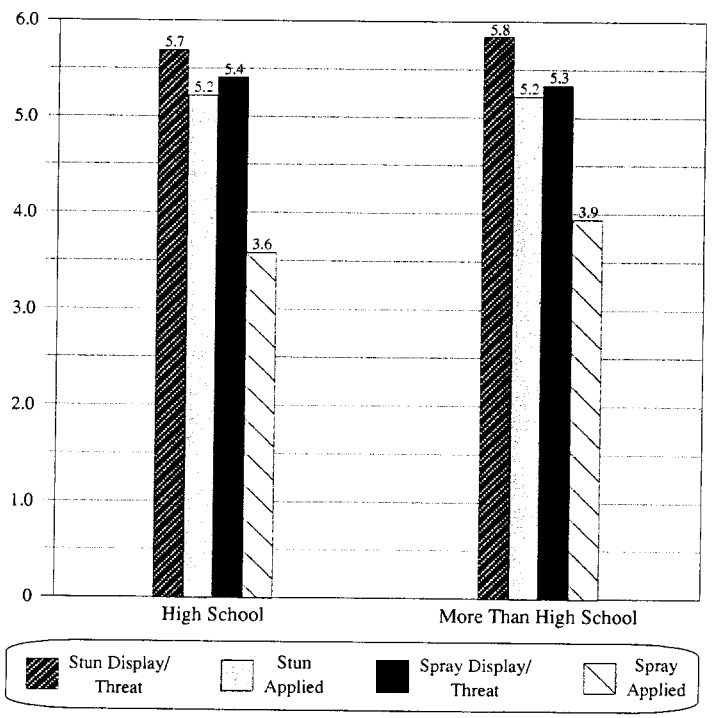


Figure B8. How Pepper Spray Was Used, by Facility



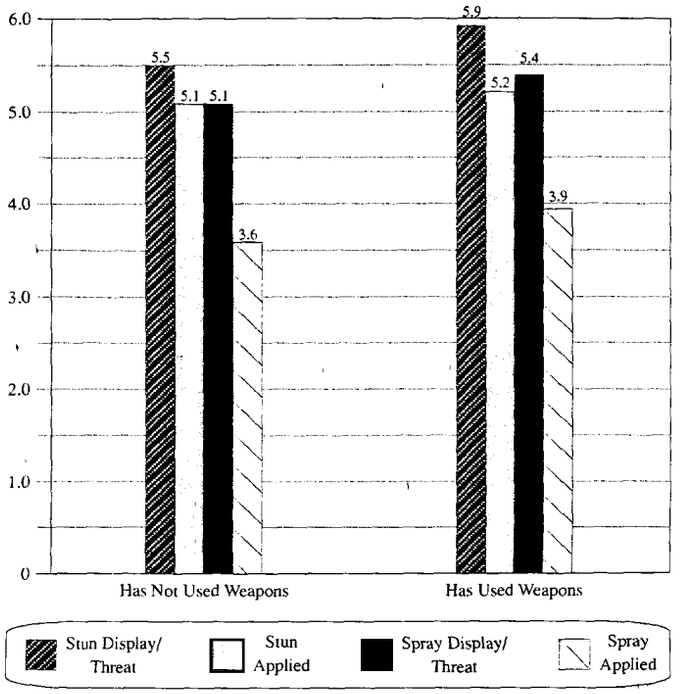
Based on 617 officers surveyed in 1996 who rated effectiveness on a scale of 1 (lowest) to 10 (highest). Observed differences by length of employment are not statistically significant.

Figure B9. Mean Level of Reported Effectiveness of Nonlethal Weapons, by Level of Use, by Length of Employment



Based on 617 officers surveyed in 1996 who rated effectiveness on a scale of 1 (lowest) to 10 (highest). Observed differences by education are not statistically significant.

Figure B10. Mean Level of Reported Effectiveness of Nonlethal Weapons, by Level of Use, by Length of Education



Based on 617 officers surveyed in 1996 who rated effectiveness on a scale of 1 (lowest) to 10 (highest). Observed differences by prior use of nonlethal weapons are not statistically significant.

Figure B11. Mean Level of Reported Effectiveness of Nonlethal Weapons, by Level of Use, by Prior Use of Nonlethal Weapons

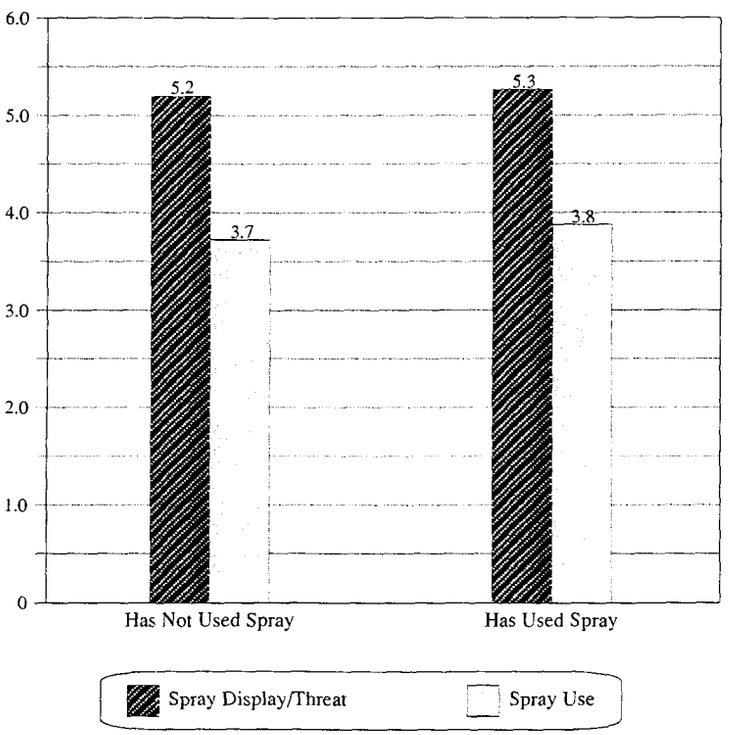


Figure B12. Mean Level of Reported Effectiveness of Pepper Spray, by Use of Nonlethal Weapons

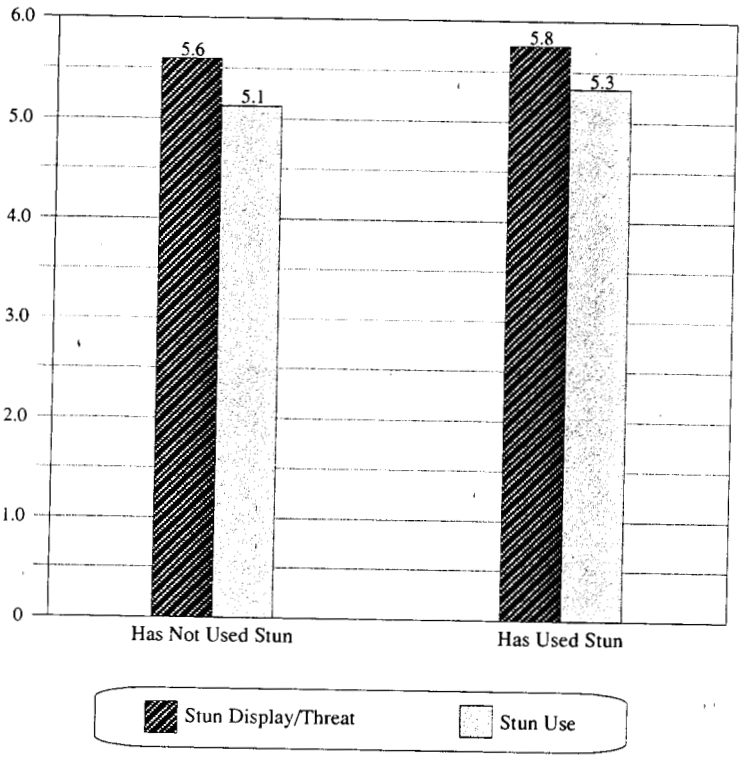


Figure B13. Mean Level of Reported Effectiveness of Stun Device, by Use of Nonlethal Weapons