We created the "Use of Force Model" concept in 1981, and began to teach it internationally in 1982. Based on our concept and model, almost all training concerns engaged in the use of force have developed variations of the "Use of Force Model." The purpose of a use of force model is to accurately guide a reasonable response for virtually any situation. The "Use of Force Model" provides the "why" to everything we or anyone teaches regarding the use of force.

"The development of the Use of Force Model by John Desmedt . . has been of immeasurable assistance in litigating excessive force cases. The ability to measure the use of force from a quantitative perspective has revolutionized the litigation of excessive force cases. The application of the Model, for the first time, allows the jury and the court to measure the term "reasonable" in a truly objective fashion. The Model has been used successfully in defending numerous police officers involved in constitutional litigation in the Federal District Court . . ."

James R. Schirott and Charles E. Hervas, Attorneys at Law

The concept of "force continuum" or "escalation of force continuum" generally refers to a listing of steps in the escalation of force, a concept that has been around for quite a while. A "continuum," however, should show a continuous change such as in a traditional thermometer rather than an abrupt change in steps or stages. Generally, use of force continua list alternatives in steps which are ordered chronologically (i.e. which should be attempted first, and if that does not work, which should be attempted next, and so forth).

This way of thinking, however, is not organized according to the reality and implications of the use of force in the 1990’s. In reality, an officer may enter a situation which is already serious and immediate. The situation may escalate,
de-escalate, remain unchanged, or fluctuate quickly. Escalation of force only deals with one of these conditions. While this may seem like hair splitting - it is not. Understanding the quickly changing nature of use of force situations is critical to developing the ability to respond correctly in a timely manner. In times past, these abilities were not as critical as they are today. Today, the officer must be trained to enter dynamic situations and use the probably appropriate type and amount of force in a timely manner - that is, not too early or not too late.

The purpose of a "use of force model" is to accurately guide a reasonable response for virtually any situation. Overreaction may not only be unconstitutional, it may also be ineffective. Underreaction may allow harm to come to the officer or others.

In our opinion, it is important that the use of force be thought of as a continuous stream of decisions and actions, appropriate in relation to the subjects actions. Please refer to the attached article, "The Use of Force Paradigm for Enforcement and Corrections."

The Use of Force Paradigm for Enforcement and Corrections not only lists governmental alternatives, but ties probable appropriate use of force alternatives to subjects actions. The model also shows degrees of probable inappropriateness. A use of force model does not facilitate proper responses or inhibit improper responses if it fails to show:

- the relationship between the subject's actions and the appropriate use of force by enforcement representatives; or
- the continuous relationship (continuum) between enforcement use of force alternatives.

Many use of force models in existence are derived from "The Use of Force Paradigm for Enforcement and Corrections." We believe that our original model provides the most valid, reliable, and practical guidance to the officer. It is not just a theoretical training contrivance. It is a useful advisor.

In order to produce a valid model, it would have to be organized essentially as our original model. We have found that other models (even those derived directly from ours) do not actually serve to predict, guide, and analyze the actual use of force in real life.

The tests for a valid use of force model are simple.
First:

- Pick any situation involving a subject and describe the subject's actions at one particular point in time. Referring to the model, attempt to find the probable appropriate application of force. Or
- Pick any situation, describe the subject's actions and then describe the officer's specific reaction. Referring to the model, attempt to quickly find the degree of appropriateness of the officer's reaction

If you can achieve either of these objectives clearly and quickly, the model passes one test.

Second, decide whether the guidelines provided by the model seem logical and consistent with relevant legal decisions, law enforcement trends, and with the reality of life. If so, the model passes another test.

Third, is the model specific yet flexible enough to allow for reasonable alternatives? It must be, or it cannot be applied to real life.

The original Use of Force Model provides the above listed advantages to all concerned -to the degree of probability possible. It has and will remain valid even through quickly changing technology as well as legal, and social conditions.

PSS has the capability to accurately measure performance, appropriateness, timeliness, and effectiveness as the trainee performs alone and as part of a team in situational simulations using the model.

This feedback enables trainees and instructors to focus on areas of weakness. The same Use of Force Model can and should be used by inspectors and investigators after actual incidents to analyze officer's actions according to the "objective reasonableness" standard. As an indication of the validity of this model, it was developed prior to U.S. Supreme Court decisions applying the standards that The Model reflects, the first being Tennessee v Garner.

The Use of Force Model has also been repeatedly and successfully used in U.S. Federal District Court. It has been challenged in the U.S. Federal Circuit Court of Appeals. Therefore, The Use of Force Model is used as a training, testing, and operational analysis tool, as well as an instrument for training, operations, and litigation. It helps to insure that departmental policy is consistent with the law, training objectives, content, methods, testing and
after-the-fact administrative actions These standards and factors also apply in any country that employs the "standard of reasonableness" in their system.

INTRODUCTION

Through the Use of Force Paradigm (Model), the reasons, considerations, and limitations in the use of all measures of force for all occasions have been ordered, categorized, and interrelated. The Use of Force Paradigm shows congruent and incongruent cause and effect relationships, level of danger, control difficulty, and force alternatives for the officer. This integrated view is based on current technology and general social norms.

By using the Model, one need only accurately place any situation into one of a few defined categories and match the proper category of response, instead of attempting to match hypothetical situations, considerations, and opinions ad infinitum. This concept of grouping situations into logical categories conforms to the principles of educational psychology, assists officers in better understanding the total use of force concept, and thereby helps them to respond properly and promptly in times of acute stress. In fact, the Model has been cited as an advanced technical application of educational psychology.

THE USE OF LESS-TAN-LETHAL CONTROL TECHNIQUES IN GENERAL

Since the middle 1960's, much effort has been expended teaching enforcement and corrections officers the use of verbal control - how to talk to and interact with the public and other specific populations. Crisis management, sensitivity training, and officer / community relations have become important segments of almost all law enforcement training programs. The same is true for firearms training. Officers throughout the nation must meet some degree of qualification in order to carry firearms. These de facto standards do not exist for use of less-than-lethal control methods, which include weaponless physical control techniques. Several reasons exist for this phenomenon.

The use of weaponless and non-firearm control techniques requires the touching and handling of the subject. Touching is, of itself, always a personal act and an officer can never know what will happen when he lays hands on a subject. Also, an officer must be within arms' reach to attempt physical control of a subject.
This proximity is synonymous with vulnerability. The closer the proximity in a confrontation, the greater the chance of being injured or embarrassed because available reaction time can be reduced to a fraction of a second.

When an officer places his hands on a subject, another phenomenon occurs. The officer may lose unconscious control of his balance. Control of balance becomes a conscious effort since the officer is directly and mechanically connected to the subject by the act of holding, pushing, or pulling, and therefore is subjected to the effects not only of his own will, but also the will and the movements of the subject. These phenomena do not occur while talking to or shooting at a subject.

Less-than-lethal control methods are also perceived as less-than-reliable control methods and therefore, always open to criticism. Use of less-than-lethal force is the product of many variables. Fewer variables are involved in using a handgun. For example, an officer cannot be criticized for carrying a handgun of too large a caliber, nor for using too great a powder charge, too heavy a bullet, hollow point vs. ball ammunition, etc. If these decisions are pre-determined by the agency for which the officer works, such predeterminations become a matter of policy.

Because less-than-lethal force may involve a great number of variables such as:

- physical stature,
- strength,
- endurance,
- ability to withstand psychogenic shock,
- ability to perform and adapt skilled movements,
- knowledge of the expected outcome of mechanical actions,
- experience and drive in dealing with violence,
- ability to produce different types of force (discussed below),
- courage, and
- ability to control panic in acute emergencies,

the use of less-than-lethal control, is not absolutely quantifiable. The result of the use of less-than-lethal force is a product of a chance gathering of variables at a certain point in time.

Consequently, the officer's grip strength, hold, movement, technique (or lack thereof), etc., may always be questioned. Agencies cannot write specific policy concerning what "feels like" enough strength. The officer must
ultimately justify more performance elements with the use of less-than-lethal force than with the use of lethal force. Due to the complexity, experienced officers may have a general "feeling" or sense of the correct type and amount of force, but this sense is vague and undefined. The faceless quality of less-than-lethal force predictably leads to confusion and bad decisions (either ineffective force or unnecessary force), in emergency circumstances. The officer may very well be surprised when these actions are later found to be inappropriate. The officer may be unable to adequately explain actions taken.

The fact remains, however, that officers must be able to clearly justify all actions in which they use force no matter how complex the variables. Some variables are subtle and go unnamed except by specialized trainers or professors. Since the use of purely physical control is highly dependent on personal variables that the officer brings to the situation, great disparity can occur because officers are not at all equal in this respect.

"CONTROL" IS THE OBJECTIVE OF THE USE OF FORCE

To begin to understand the many concepts involved in the use of force, one must first disassociate the strict concepts of offense and defense as the primary justification of use of force techniques. Use of force is often thought of and described in unspecific terms or in sports terminology. Unlike the planned format of certain sports such as baseball and football where offensive and defensive modes are separate, use of force situations are generally not as clearly defined strictly in terms of offense and defense. The application of physical force is more probably like the sport of boxing, in which a participant can:

- change from offense to defense during a movement, or,
- perform actions which are simultaneously offensive and defensive.

Therefore, to understand use of force, replace offense/defense with the concept of control in your thinking. Control is the ability to command or direct with or without voluntary compliance. Substitute the idea that the officer will control with the subject's consent, if possible, but force the subject to comply, if necessary.

One school of thought uses the premise that the role of law enforcement is essentially defensive. What, however, is defensive about using force on a subject who resists being moved or attempts to escape? Much attention has been devoted to the quandary about shooting fleeing felons, until the landmark United States Supreme Court Tennessee v. Garner decision.
In order to categorize these "offensively oriented" control situations as "defensive," one must expand the meaning of defensive to imply that chasing a suspect is, in the broader sense of the word, "defending" society in general. The somewhat irrelevant and artificial concepts of offense and defense do nothing to help an officer respond in an urgent situation requiring action. The officer needs a clarification of murky issues, not ideological pronouncements. Officers should not have to rethink these definitions during each emergency, but they should be provided with clear internal guidelines, a statement of purpose, and a principled philosophy as embodied in the concept of "control."

The concept of defense (i.e. to protect from anger, harm or attack) is less difficult to defend amidst the emotional issues involved in a use of force than is the concept of "offense." The relevant definition of "offense" is "attack" or "assault." Both of these definitions carry the connotation of brutality, violence, and illegality. In the military sense, assault is "the final stage of an attack that includes close combat with the enemy." In the civil enforcement context, therefore, we do not find that "offense" correctly describes the intent or goal of legitimate force in overcoming resistance. "To compel" or "to force" more correctly describes the appropriate reason for the use of force other than to protect. When added together, "to protect" and "to compel," (the basic reasons for justifiable use of force) become "to control."

As discussed, officers may use force when they need to establish and maintain control over a subject. Therefore, the officer may use force to:

- stop an attack on the officer or others, or
- overcome resistance to lawful duties and tasks.

If the officer must make an aggressive or proactive action to seize a subject who does not wish to be seized, the purpose of the seizure is to establish control over the subject, regulating his movements for a legal reason. If the officer is defending himself or another, control must be established over the subject to neutralize the subject's capability to cause harm, but not necessarily at any cost.

The cost to the subject in terms of injury or deprivation of liberty may not outweigh the need of society to control the subject's actions. The governmental need to control must outweigh the cost to the subject being controlled. Therefore, the amount of force allowed to establish and maintain control must be reasonable.

JUDGING THE USE OF FORCE BY SPECIFIC STANDARDS
Force is generally thought of in terms of quantity or "amount." However, the probable general effect of force is also co-dependent on the quality or type of force used. The correct amount of force is the amount of force necessary to establish and maintain control over the subject, neutralizing threat or resistance.

The officer must be able to take the perceived data concerning the resistance or danger caused by the subject and immediately match it with the most proper available means of control. The officer must resolve the confrontation with a minimum of injury to all parties concerned, and in a timely manner.

Since one cannot list all possible conflictive situations in detail, much less match them with proper responses, situations can and must be classified by major problem and by relative seriousness within that group.

**TIMELINESS**

As mentioned, the officer must act to control in a timely manner. That is, if force is used, it must not be used either too early or too late relative to the subject's actions. Timeliness is defined as being: "not too early or too late to prevent physical injury, or to complete the legally authorized task." Using force after danger or resistance has ceased is too late. Using it before it is necessary is too early. Both are unreasonable. The element of time is critical and must be factored in when determining the culpability of the officer, based upon available alternatives.

Every incident in which an officer faces a subject is comprised of many time frames just as each motion picture is comprised of picture frames. The motion picture is a dynamic compilation of the individual frames. The use of force is a dynamic compilation of time frames prior to, during, and after the actual use of force.

The officer must perceive and evaluate many factors which together dictate the amount of time and the action alternatives available to the officer. Some of these considerations are distance, shielding, obstruction and the type of attack or resistance encountered, risk and probable affects on others. However we can not author an all inclusive list. Even more to the point, the officer on the scene does not have the reliable ability to accurately list all of the specific considerations, just the most obvious. They, in turn, are only made obvious by training or experience. Distance is one major consideration.
An increased distance from the subject allows the officer more time to form a reflexive reaction movement sequence, evaluation, or considered opinion - in ascending order. The greater the distance, the more time available for perceiving situational clues more precisely, evaluating problems, alternatives, and selecting the appropriate reaction in view of future implications. The direct relationship between the subject's actions and the officer's actions is bound by the reaction limitations of human physiology.

Similarly, environmental shielding and obstruction must be considered. If the officer, and the rest of the community were shielded from all potential danger the subjects might pose, the final decision to use force to protect from harm or accomplish necessary enforcement tasks could be delayed indefinitely. A subject with a knife serves as an example. If the subject is free-standing and approaching an officer with raised knife, the officer MUST perform some protective action at that time. If the same subject is locked in a basement with no way out and knife raised, no protective action is required at that time. Structural shielding gives decision-making time.

The modes of attack or resistance available to both the officer and the subject also determine timeliness. If a subject held a truncheon and the officer had no weapon, the officer would be forced to make quicker and earlier decisions about means to control the subject's actions, than if the situation were reversed. This is so because the officer must obey rules during a conflict; a subject need not. All other things being considered, person versus person, the subject enjoys many clear realistic advantages that account for successful episodes of assault or resistance against officers. Both sides of a conflict possess some means to attack or resist each other. Because the officer's reasons for using force are legally mandated or allowed, they are also restricted. Having placed the officer in this permanent situation, the government should provide the officer with all necessary instructions, equipment, and tools to control, given the time available. The tradition has been quite the opposite, however.

Officers are often given only a firearm, the advice, "use good judgment," and unclear policy designed not just to guide the officer, but to protect the agency by allowing certain ambiguities, which the officer is supposed to judge, given the totality of the circumstances. Unfortunately firearms are restricted from use in most situations, and the quality of the "good judgment" is always determined after the situation has ended, when the officer is judged. Officers should not have to gamble that the use of force, if successful, will be considered an offense in itself. Greater guarantees should be provided to the officer - certain "limited" guarantees as to what does and does not constitute a
reasonable use of force. Each of the subject's actions and the correlating officer reactions are ultimately subject to scrutiny. They may be judged for legality or reasonableness within frames or points of time.

PERCEPTION

The perceptions of the officer are also subject to judgment. Perceptions, however, also must be judged according to timeliness. That is, the shorter the time period involved, the faster events occur, and the more confusion present in the environment, the less accurate the officer's probable total perception will be. Yet, typical depositions and testimonies of officers involved in use of force cases include questions and answers such as:

"Officer, when the subject came toward you with what you say was a revolver, how were the fingers of his left hand positioned?"

"I don't recall."

"Officer, as the subject was striking at you, in what position was he standing?"

"I don't recall."

"Officer, did you actually see that the firearm was loaded?"

"I don't recall."

"Officer, how many people were in the back seat of the car when you started pulling them out?"

"I don't recall."

Human perceptions are limited by scope, amount of information taken into account, and time. Therefore, mistakes in perception and resultant mistakes in actions are not just probable, but predictable. Given that no human can be aware of all occurrences in the immediate environment, some allowance must be made for this human imperfection, even in the most serious cases. The officer should not be judged for acting upon an imperfect data base if other responsible officers in the situation may have come to similar inaccurate perceptions.

For example, an officer shot and killed a subject who suddenly pointed a squirt gun at the officer. This occurred on the well-lit warehouse roof top. The
The officer realized that the gun was a toy, but only after he had shot the subject. Only after the situation allowed him time to clarify this perception with more specific information did the officer realize that the gun was a squirt gun.

If the officer were judged by other than a reasonable perception standard, he would have been guilty of shooting an unarmed subject, because he did. However, because of the officer's inability to perceive perfectly, (according to his perceptions) the subject was actually armed and about to shoot.

An officer's actions must be judged on perception, not on absolute fact. The training standards for judging the use of force and standards for judging the actual use of force should be synonymous. They must allow latitude both for errors in perception and for less-than-perfect performance of complex open skills.

**WHAT THE MODEL REPRESENTS**

Looking at the Model, the vertical line AB represents situations the subject creates by his actions. At the bottom of line AB, the subject's actions are not threatening or illegal. Therefore, the officer does not possess the degree of discretion to impose himself on the subject's life.

Angle D (with irregular lines) represents the ultimate in criticality. The subject is threatening to cause death or serious bodily injury. Available time is scarce in these situations, therefore discretion has been allowed by the United States Supreme Court and is reflected by the Model. At the extreme, an officer is allowed to use lethal force if the subject is about to kill (at the top end), or cause only serious bodily injury (at the lower end). Since this model was originally published, the United States Supreme Court validated this concept in Tennessee v. Garner.

**THE SUBJECT'S ACTIONS**

To measure and analyze actual situations in which force was used, may have been used, or should have been used by the officer, one must perform these steps in order:

- Determine and list the actual sequence of subject/officer transactions during the entire situation in chronological order with the greatest degree of accuracy possible.
- Determine the criticality level of each of the subject's actions and the correspondent officer reaction.
Since the threat / resistance level of the subject's actions, as perceived by the officer at a specific time, determines the necessary type and amount of force to be used by the officer, the first step in determining the appropriate use of force at a given situational time frame in all cases is to determine the level of the subject's resistance or threat. Previous data concerning the subject's propensity for violence may be taken into account when establishing the initial response level - if time exists for such planning.

On the Model, point B is the neutral point on the vertical axis (line AB) at which no problem exists. Rising up line AB from point B to point A, one sees a continuous increase in the level of resistance or threat by the subject(s), along with an increase in the difficulty to control the subject's actions, in the danger he presents and the vulnerability of the officer. In short, the higher on line AB, the more critical the situation caused by the subject's actions.

Subject actions are classified on the scale of criticality by:

- the amount of difficulty necessary to control them and,
- the seriousness of the probable effects of the actions in terms of injury to others.

Just above point B, only distance links the officer and subject. That is, the nearer the officer to the subject, the less time the officer will have to react to subject actions. Therefore the more difficult the subject's actions will be to control. The closer the officer to the subject, even if apparently cooperative, the more the officer must begin to notice the situation for safety's sake. At the point of no overt resistance or threat, the presence of the officer is enough to control the subject since the subject is offering no specific problem.

Any possible actions by the subject can be grouped into categories which require response from the enforcement representative. Hidden and integrated in these category definitions are the prime elements of physical conflict dynamics such as: amount and type of force, degree of movement, size and weight variance, degree of muscular tension, relative positioning, fear, motivation, duty requirements, subject, officer, and weapons capabilities, presence of weapons, countervailing properties of officers' alternatives, numbers of officers and subjects, faulty sensory perception, medical implications, generally accepted appropriate goals of law enforcement agencies, legal considerations, and the anaerobic capacity of the officer. To appreciate the significance of the categorical elements, one must analyze each category in the context of the others. In effect, the elements of control are applicable on several different levels.
COOPERATIVE SUBJECT

The least critical subject behavior as shown on line AB, a cooperative subject is one who, regardless of level of risk posed, complies with the officer's appropriate non-verbal, social cues or verbal direction. Cooperative subjects are divided into two categories.

1. LOW LEVEL COOPERATIVE SUBJECT

The lowest level of subject in terms of difficulty to control and/or threatened danger is the cooperative subject, who complies with appropriate non-verbal cues, such as behaving appropriately in the presence of an officer in routine situations. One example is the subject who steps aside when an officer (or anyone else) obviously intends to walk past. Another example is the subject who surrenders to the officer on sight, without the necessity of verbal direction. The subject's actions are self-initiated, but virtually paced by the officer or others.

Distance is the key element in determining the level of difficulty in controlling within this category of subject behaviors. As distance between the officer and the subject decreases, so do the officer's alternatives for establishing physical control should the subject suddenly attack or resist the officer. The increasing vulnerability at closer ranges must be taken into consideration even though the subject(s) may appear to be cooperative, and use of verbal direction seems unnecessary. Therefore, "the closer to the subject(s), the greater the relative risk" - even from an apparently cooperative subject, who needs no verbal direction.

2. HIGH LEVEL COOPERATIVE SUBJECT

Within this category of subject actions, the subject responds to verbal direction. Criteria for inclusion in this category are that the:

- use of verbal direction is necessary for the officer to elicit the cooperation / compliance of the subject,
- subject responds to verbal direction in a timely manner.

The subject's level within this category is based mainly on amount of risk that the subject creates. Proximity is one factor in determining risk.
• The higher the perceived risk based on knowledge of the subject's previous behavior, observed mental state, attitude, or physical actions, the higher position within the category.
• The closer the subject to the officer or others, the higher the position with the category.

A subject controlled by verbal direction may, an instant later, become a highly dangerous assailant by virtue of his actions. The officer must, therefore, take precautionary steps to ensure that force alternatives are available for use instantly. Even the actions of cooperative subjects must be controlled to the degree that, should they suddenly become assailants or resisters, they begin their assault or resistance from disadvantaged positions relative to the officer.

RESISTER

Resisters are subjects who do not respond to social or verbal control, but who do not act as assailants. Resisters are more difficult to control than cooperative subjects. They must be seized and physically compelled to cooperate. Two levels of resister exist, they are the passive resister and the active resister.

1. PASSIVE RESISTER

Degrees of passive resistance (refusal to move as directed) can be measured by the:

• degree of muscular resistance of the arm to the touch of the officer and,
• distance from the subject's hand(s) to the subject's lower abdomen. (The closer to the pelvis, the greater the efficiency of the musculature of the arms to resist against external forces of pulling, twisting, or rolling by the officer.)

This category of subject behavior does not include attempts to flee or to create greater distance between the subject and the officer. The subject simply tries not to be moved. A subject may increase ability to resist passively by grasping a fixed object.

The passive resister is more difficult to control physically than even a highly dangerous cooperative subject, because physical force must be used on the passive resister if he is to be controlled, whereas the dangerous cooperative subject's actions are controlled without application of physical force. As
previously stated, the subject's actions determine this level of difficulty to control, not simply the fear he creates in the officer or others.

2. ACTIVE RESISTER

This subject actively resists in a defensive manner, by attempting to avoid physical control by the officer and create space between the officer's reach and himself. This type of resistance ranges from slight evasive movement of the arm, through flailing, to full flight. The active resister coordinates his behavior to create distance between the officer and his own body or body parts. Active resister behaviors are not harmful, merely difficult to control.

THE ASSAILANT

Assailants are grouped into three categories according to the probable harm their actions may cause.

1. ACTIONS ARE AGGRESSIVELY OFFENSIVE WITHOUT A WEAPON

In this category of subject actions, the subject closes distance from himself to the officer, usurping the officer's personal surrounding space, limiting the officer's available alternatives, and taking control of the situation from the officer without actually or potentially harming the officer at that point in time. The subject attempts to make physical contact with the officer.

The specific actions of this subject will probably not cause immediate physical injury to the officer, but may create a situation in which the officer may have neither the time nor resources to react properly in defense of self or others.

The officer may be under the physical control of the subject so that the officer may not be able to control his own body positioning reliably. By his actions, even without causing injury, the subject places the officer in fear of losing all force alternatives as they diminish.

2. ACTIONS WILL PROBABLY CAUSE PHYSICAL INJURY

This category of subject is defined by actions which attack the officer or others. Because of the mode of attack, the injury will be less than "serious" physical injury. Probable physical injury may include minor broken bones, sprains, scrapes, contusions, cuts to the skin, or damage to the teeth, or hair. This type of injury is usually found in weaponless fights.
3. ACTIONS WILL PROBABLY CAUSE DEATH OR SERIOUS PHYSICAL INJURY

The actions of this category of subject give probable cause to believe that the subject will immediately cause death or serious physical injury. For the sake of clarity, serious physical injury may be viewed as:

- a major broken bone,
- a gaping (widely opened or separated) wound, or
- damage to internal organs.

This definition differs from the lesser classification of "Actions will probably cause physical injury." "Serious physical injury" has been defined as injury which would necessitate a prolonged hospital stay or cause a marked decrease in the permanent quality of life. However, if the officer does not happen to be a physician or a fortune teller, he will not be able to predict the length or degree of anyone's recuperation. Therefore, we classify serious physical injury in tangible terms which the officer can use in formulating judgments prior to experiencing the outcome of subject actions.

The specific way in which the subject may cause death or serious physical injury is immaterial except as it affects timeliness of the officer's reactions or as it lessens the officer's alternatives in producing a reaction. For a subject to be placed in this category, he could be using a firearm, bomb, acid, vehicle, or brick, as long as the mode and weapon are capable of causing immediate serious physical injury. This type of force is termed "lethal force." This is the same definition as the lethal force used by officers.

CONTROL OPTIONS

Considering all of the officer's available alternative control options, line BC on the Model represents the officer's means of establishing control. These means are not ordered by frequency of occurrence or chronology, but by intensity and severity within each category. As line BC progresses from point B to point C, the probability of establishing control of any subject increases, but so does the chance of causing physical harm to the subject. This relationship as well as the basic control option groups available to the officer are discussed below beginning with "Social Control."

SOCIAL CONTROL
Social control is the deterrent effect produced by the presence of others. The presence of others increases the possibility of sanctions for improper actions. Anyone's mere presence can serve as a form of control. "Presence" as we use it primarily means the proximity of the personification of legal authority, and secondarily, the degree of intimidation caused by physical stature or other signs of the ability to use force.

To gain the status of officer presence as opposed to the presence of just another citizen (witness), the officer must be identified as an officer, either via uniform or some other means. Since officers possess authorities which other citizens do not, the identification of the officer is critical to establishing a special presence, which in turn brings to mind an enhanced need to conform with social regulation.

Additionally, if the officer is of considerable size, exhibits an alert demeanor, and looks generally fit, the lowest level of the effect of the officer's presence moves to the right on the Model, because the officer has already attained psychological advantage. You can expect that the presence of several officers will create a greater deterrent than the presence of one. Too much presence, on the other hand, can evoke the down-side of panic and fear in the subject. The fear increases hostility which, in turn, can actually precipitate an attack or resistance.

The component of social control may, at any place on the continuum of subject actions, suddenly cause the subject to come to the realization that he should abandon his resistance or assault. However, the higher intensity of the subject's resistance or attack, the less likely he will be stopped or controlled merely by presence. Holding up a badge, identifying oneself, and commanding, "Stop," will probably not stop the actions of a highly motivated assailant.

Social control alone produces very limited probability of positive control. If this were not true, very few people would ever resist or attack anyone who they knew to be an officer. Even though social control is not effective without use of physical control against most subject classifications, officers must establish their identity and presence along with all forms of physical force. On the Model, the probable control effect of social control is shown by an area with fully clear background below line BC. Those areas in which social control must be used along with physical force are shown by partially clear and partially shadowed background.

VERBAL CONTROL
The next category of control option is "verbal control" or verbal direction. Verbal control may range from a smiling "Please," to "Stop, or I'll shoot!" Verbal direction (advice, persuasion and warning) may seize the subject's malicious intent at any place within the resistance / attack continuum of his actions. Once again however, the more intense the subject’s resistance, the less probable that words alone will suffice to control, unless there is time to establish dialogue or negotiation and delay or avoid the use of physical force. In the continuum of control alternatives, a point exists at which words prove fruitless when used without physical control. Verbal control operates similarly to social control, but at different points on the continuum. Like social control, verbal control must be used with all forms of physical control. On the Model, below line BC, the probable effect differential between verbal control alone and verbal control used with physical control is depicted in the same manner as are social control alone, and social control with physical control.

DUAL MODES OF SOCIAL AND VERBAL CONTROL

Social control (presence) and verbal control (talking) can and should be used along with physical controls, when higher level controls are necessary. Verbal control has not generally been considered an element in the application of physical control procedures. We believe that it should be.

One reason for this is that officers (and everyone else) can only concentrate on one endeavor at any point in time. Officers may encounter ample difficulty controlling with physical force. However, if trained to talk while using physical movements as one reaction, the officer can many times cause the subject to discontinue resistance simply by calling the subject by name, or by giving commands while using physical force.

WEAPONLESS CONTROL

Weaponless control is one mode available with which to apply physical force against those subject actions which words do not control, but which will probably not cause serious physical injury or death. In the Model, we have divided weaponless control into three categories. They range from least probability of control and least injurious, to the greatest probability of control, but with the greatest probability of resultant physical injury to the subject. These categories are discussed below.

1. HOLDING (PRESSURE / PAIN PRODUCING HOLDS)
Pressure and pain producing holds consist of the application of non-impact pressure to pain receptors, such as wrist locks, hair pulling, pinching or pressing on "pressure points" (areas of the body which are pain-sensitive to application of mechanical pressure). We assign the term "Pressure Sensitive Area" to these areas of the body, since they are more small "areas" than "points," and should not be confused with pressure points used to stop bleeding. Applying mechanical pressure causes control by establishing an overwhelming desire in the subject to find relief from the pain, either by stopping all resistance (when being held from more than one direction) or by propelling him in the direction of relief allowed by the officer (when being pressured from a single direction). However, the outcome of the use of pressure or pain producing holds (wrist locks or applying pressure to pressure sensitive areas of the body) is not always predictable.

Reaction to pain is highly unpredictable because the quality of pain varies widely between subjects and between body parts. Pain threshold and pain tolerance levels are greatly affected by mental state, drugs, past experience - even time of day. A highly motivated subject may not even realize that he has been shot, much less be controlled by a deep push of fingers into an area pain sensitive to such pressure. These pain-sensitive areas of the body are not usually sensitive because major nerves themselves are exposed, but because pain receptors (sensors) indirectly connected to main nerves are stimulated.

When stimuli from pain sensors, is measured in the brain, the subject experiences the sensation of pain as if the pain were actually occurring at the site of the hold. Actually the pain itself is being produced in the brain, which is stimulated by signals from the affected body parts. However, many other brain activities can block the transmissions of the pain message. This automatic ability to block the pain message makes pressure / pain holds an unreliable use of physical force through which to establish control.

Characteristics of Pressure / Pain Holds are:

- low probability of physical injury to the subject,
- unpredictable effect on subject - may not control at all.

2. STUNNING

Stunning is used to interfere with the subject’s ability to purposefully direct his attention toward producing coordinated resistance to the officer. If the subject is disoriented, his ability to react in a coordinated manner is diminished.
Temporary inhibition of respiration, diminished functional capability of the arm or leg muscles, or the inability to concentrate mentally are forms stunned reactions. Examples of stunning techniques are:

- a palm heel strike to the head,
- a strike to the lower rib cage, or the solar plexus, or
- strikes to large muscles of the arms and legs.

The use of stunning can stop the movements of active resistance and give the officer the opportunity to apply "holding" techniques, handcuffs, or other restraining devices to the previously active resister.

Impact pressure is purposely diminished when attempting to stun, so that force is spread over a wider surface area of the subject's body. This lessening of the pressure created by a given amount of force changes the quality of effect from sharp penetration and breaking, to padded shocking and temporary disruption. In some cases softer parts of the officer's body are used as weapons and, in other cases, softer parts of the subject's body are targeted. Either combination can reduce the amount of impact pressure from a strike.

Characteristics of Stunning Techniques are:

- some probability of physical injury to the subject,
- more reliable than pressure holds,
- easier to apply than pressure holds,
- temporary effect.

3. DIRECT MECHANICAL TECHNIQUES

Direct mechanical techniques are those which use mechanical impact pressure or leverage directly against the mechanical support structure (skeleton) of the subject's body. The mechanical mode differs from holding and stunning in that the support structure of the subject's body is the target, not the subject's ability to pay attention or use particular muscles. Either impact pressure or opposing prohibitive pressures are used.

Prohibitive pressure is pressure applied to bones and joints which take them beyond their normal range of motion and movement tolerance to sprain, dislocation, or fracture. Any direct mechanical techniques can fracture bone or cause damage to connective tissue, muscles, or organs. Direct mechanical techniques generally offer the best chance for establishing physical control of
a subject, but also carry the greatest chance of injury to him. Techniques in this category include:

A. CONCENTRATED IMPACT PRESSURE

Impact pressure is non-firearm generated pressure in which the instrument used, such as the fist, a baton, etc., is propelled into the target, as opposed to "thrust pressure" in which the instrument touches the target and then develops speed.

Concentrated impact pressure is intended to penetrate into tissue to a depth sufficient to stop an attacking subject by causing internal body components to stop functioning as supportive mechanisms of attack.

B. MASSIVE NON-IMPACT PRESSURE

This type of non-impact pressure differs from pain / pressure holds. Fractures, dislocations, sprains, and bone, tendon, or ligament damage may result when massive pressure or weight is applied after a joint lock is fully established. The body part in question may no longer retain the capability to continue the attack.

An example of techniques in this category is the piling-on of bodies or other massive weight on a subject to the extent that he is unable to move - sometimes to breathe. Another by-product of piling-on may be prohibitive joint movement with resultant damage to joints, muscles, or bones.

C. NECK HOLDS

Neck holds, such as vascular or choke holds, are forms of high-risk-mechanical techniques. Vascular neck holds are not the same as choke holds. They are two distinct types of control with different potentials for causing physical damage. Both operate by means of squeezing neck and throat organs in a vise-like mechanical action of the arms. Since it is unlikely that neck holds can be applied from a face-to-face position with an assailant, they are more probably useful against a low-level resister. Neck holds are not reliable techniques for controlling assailants. The techniques do, however, carry severe possible consequences for subjects upon whom they are used and secondarily, the officer who uses them. Choke holds are inherently more dangerous than vascular holds.

Definitions of the two holds are often confused. The reason for this error is that both techniques appear similar in execution, are applied to body parts in
close proximity, and if not performed properly, one may unintentionally turn into the other.

Vascular-type neck holds are meant to establish control only by changing the rate of blood flow mainly from, but also to, the brain. The change in pressure can cause pain, confusion, and can alter the rate of functioning of internal organs, including the heart.

Choke holds, however, constrict the flow of air to the lungs and may cause other undesirable side effects such as damage to throat cartilage. This damage may very well be salvageable only by surgical procedure which may not be accomplished in time to save the subject's life.

The range of mechanical techniques could also include most military combat techniques (unconventional for civilian use) at the lethal force end of mechanical controls. Although these unconventional techniques are not usually taught in law enforcement academies, they are also examples of the high end of this weaponless control mode.

Characteristics of Direct Mechanical Techniques are:

- the greatest probability of physical injury to subject of all weaponless control techniques,
- the greatest probability of forcible control of all weaponless control techniques,
- the most irreversible of weaponless control techniques.

**IMPACT WEAPONS**

Use of impact weapon techniques (various types of truncheons such as batons, etc.) begins at the same point on the continuum as mechanical weaponless techniques. An impact weapon is one used to establish control of an assailant through non-firearm generated impact pressure to the subject as described above under "Weaponless Control - Mechanical." Batons or other impact weapons can be used with various degrees of intensity. As the matching category on the vertical axis would indicate, if a subject is aggressively offensive to an officer or others, even without the use of a weapon, applying an impact weapon with the necessary level of intensity to less vulnerable body targets is appropriate in lieu of attempting weaponless mechanical physical control.
If a subject is likely to harm others, more intense baton usage would be in order. If the subject immediately threatens life or serious physical injury, the baton may be useful, but its potential does not match the probability of establishing the instantaneous control that a firearm offers.

The use of the impact weapon as well as other methods which avoid direct physical contact, has gained greater importance since the onset of AIDS. If striking an assailant becomes necessary, using the impact weapon instead of an officer's body part reduces the chance for accidental contact in which white blood cells may be transferred from the carrier of the deadly disease to the officer. Impact weapons should not be considered a higher level of force than weaponless direct mechanical control. Weaponless control can cause as much or greater damage.

CONTROL INSTRUMENTS

Control Instruments are tools which are designed to apply non-impact pressure to pain sensors, mainly in the skin and covering of the bones (periosteum), thereby establishing control over subjects who passively resist. The use of a control instrument, such as the Yawara, or other short stick-like instrument when correctly applied, can increase the chances of establishing control by amplifying non-impact pressure. These instruments are not impact weapons. They are designed to maximize pain, but when used strictly as control instruments, produce little probability of causing physical damage.

Using control instruments for creating pain simply to gain information is not ethical, but is a form of torture. Using control instruments to avoid using another more probably destructive form of control, such as striking, is ethical. The officer must cease producing pain immediately when the subject ceases to resist. Use of control instruments is classified synonymously with pressure / pain producing holds.

ELECTRICAL SHOCKING DEVICES

As of now, harmless electrical shocking devices are not capable of reliably stopping the highly motivated assailant or resister. Those shocking devices that are designed to be used while holding onto a subject can only be used when the subject is already immobilized or not actively resisting. They offer a negligible probability of stunning, but do cause pain and burning of the skin.

Those shocking devices which are "shot" from a distance are limited in the number of attempts that can be made in a short period of time. Their use
requires follow-up medical attention. Thick clothing can dampen the desired effect. Manufacturers are working to develop the electrical shocking device into a reliable and useful tool. At present, those devices which are reliable (such as the cattle prod), are also dangerous. Those which cause minimal injury are also predictably unreliable.

CHEMICAL AGENTS

Commercial chemical agents used for enforcement purposes are almost always non-lethal. They require some time to take effect, and the resultant effect on a subject is unpredictable. Therefore, conventional chemical agents are generally useful on subjects who resist, but who are not actually assaulting at close range. When treated properly after use, the subject, on whom the chemical agent was used, maintains a low probability of physical damage. Claims that conventional chemical agents can immediately incapacitate even enraged subjects, or subjects under the influence of drugs are unfounded. This includes capsicum products.

THE RELATIONSHIP OF CONTROL OPTIONS

As one proceeds from point B to point C on the Model, three relationships develop. The more critical the control mode or technique:

- the greater the probability of officer control. The greater the probability of establishing control, the greater the advantage for the officer.
- the greater the probability the subject will receive injury. The greater the probability of physical injury to the subject, the greater the disadvantage to the officer. The most desirable situation would be one in which the officer could reliably control the subject without injury to him. This is so, due to legal and administrative consequences for the officer. When the subject cannot demonstrate injury, the liability of the officer and agency is reduced.
- the less reversible the officer's actions become. The irreversibility of an action is a liability to the officer. It is difficult to undertake an action which can produce serious consequences and, from which there is no return. The outcome (damage) of lethal force is almost always serious and, therefore, cannot be taken back or reversed. The less reversible the actions, the more reluctant officers should be to use them. Mistakes in the use of irreversible action are permanent mistakes.

Therefore, near one end of the continuum is verbal control, which will not harm the subject and is reversible - it can be taken back without injury.
Mistakes carry no great penalty. Verbal direction does not, however, generate a great probability of controlling an assailant.

On the other end of the continuum, use of the firearm gives great probability of control. However, it also causes great probability of damage to the subject's body and, therefore, carries a high degree of potential liability. It cannot be "taken back." Officers may not discharge firearms without serious potential consequences, no matter how mistakenly.

HOW THE MODEL DISPLAYS REASONABLENESS

To summarize its construction, the Use of Force Model is formed by the positioning of two perpendicular axes. The vertical scale, line AB, represents a continuum of possible actions and situations which are determined by the subject(s) with whom the law enforcement officer is involved.

In using this model, the vertical level of the subject's action is always determined first, since it is the action of the subject which determines type and amount of immediate force to be used by a law enforcement officer to compel compliance.

This continuum is divided into general groups by lines to help the user determine where, on the continuum, the subject's action belongs. Actually, the lines should not be present to delineate steps, but the vertical axis should be progressively shaded - from point B to point A, thus indicating a continuum.

The level of threat / resistance created by the subject(s) actions is equated to the level of control difficulty and/or danger the officer faces.

The horizontal scale, line BC, represents the use of force by a law enforcement officer. The beginning and end of each category of control options is defined by a line.

As explained earlier, moving from point B to point C, control options increase in:

- probability of establishing positive control,
- probability of creating physical harm to the subject(s), and
- irreversibility of the action.

Individual agencies could conceivably mark the beginning point of each type of control to correlate with their use of force policy. However, altering the Model will not alter the reality of use of force relationships. If some control
means are not available within various agencies, they may be covered over. However, geometrical relationships must not be changed.

The graph is traversed by line BD, which represents the ideal use of force. The irregular area represented by Lines BD\textsuperscript{1} and BD\textsuperscript{2} creates a discretionary "gray area" (D) within which the officer's actions are acceptable when judged strictly by probability of control vs. probable physical injury. Area ABD represents potential ineffective control or response. Area CBD represents potential excessive control or response. One can see that some points within these areas are closer than others to the acceptable range of the irregular area of D. They are meant to be, and represent proximity or divergence from the probable proper use of force.

HOW TO ANALYZE APPLICATION OF PHYSICAL FORCE

This model can be used for both pre-incident training and post-incident evaluation. If a situation is complex, characterized by fast changing levels of threat/resistance and reaction, then its course may be plotted on this model by numbering each subject action and officer reaction, chronologically on the Model (e.g., 1. This happened first; 2. This happened second; 3. ...etc. See Figures 2 and 3).

TO FIND THE PROPER USE OF FORCE

To use the Model in training for determining the appropriate level of force an officer should use in response to demonstrated threat / resistance follow this procedure:

- Determine the position of threat/resistance on the vertical axis AB.
- At that level, strike a horizontal line to the 45 degree center line BD.
- At the point where BD is intersected, strike a line straight down to the horizontal axis BC. The intersection point on the horizontal axis is the proper use of force in any of the categories of officer control.

TO EVALUATE THE USE OF FORCE

To use the Model in situational analysis for determining in retrospect whether an officer reacted appropriately:

- Determine the level of threat/resistance on the vertical axis.
- At that level, draw a horizontal line to the right edge of the graph.
• Determine the level of control used, and mark it on the horizontal axis BC.
• At that point, draw a vertical line upward until it intersects with the line drawn in Step B.
• Repeat for all actions taken in order, and label each intersecting point in chronological sequence (See "Case Study" below).

INCIDENT ANALYSIS UTILIZING THE USE OF FORCE MODEL

The following rationale is followed when utilizing or teaching the Use of Force Model.

Situations requiring force lie on a continuum from neutral to as serious as possible.

An infinite number of possible situations exist. No situation is exactly the same as another.

The purpose for the use of force is to establish and maintain lawful CONTROL (not defense or offense). Control is defined as the ability to compel, command, or direct with or without the cooperation of the subject.

Force may be used to establish and maintain control for either or both of the following reasons. To:

1. protect from harm, and/or
2. overcome resistance to lawful functions of the enforcement representative.

The subject's actions necessitate the quality and quantity of force used by the enforcement representative.

The enforcement representative possesses some or all control modes which can be categorized using the following hierarchy:

1. Social Control (person)
2. Verbal Control
3. Weaponless Control Techniques (including Pressure / Pain Holds - starting at "hands-on" with no pain; Stunning (diffused impact with soft striking surfaces); and, Mechanical (skeletal)
4. Electrical Shocking Devices (roughly equivalent to weaponless pressure compliance methods)
5. Chemical Agents
6. Control Instruments (equivalent to weaponless pressure / pain holds)
7. Impact Weapons (equivalent to weaponless mechanical modes)
8. Firearms (and other means of force considered to possess the probability of causing death or serious bodily damage when utilized)

As one uses higher categories of means of control, several effects will probably occur:

- The likelihood of establishing and maintaining control is greater,
- The likelihood of tissue damage is greater, and/or
- The means of establishing control is less reversible.

Categories of means of control can be matched with their probability of controlling the subject's resistance/attack. If a control mode is not available, use of the remaining modes does not change.

Each mark on the respective chart shows the relationship and probable effect of each use of force transaction. In order to find the probable correct action (if the nexus of the subject's action and the officer's action does not fall within the probable appropriate range), extend the level of subject action to line AD. Strike a line downward from the intersection of the level of the subject's action and line AD. The line will run directly through all actions which are probably appropriate to control the subject's actions.

**SUBJECT'S ACTION**

1. The subject is standing facing the officer.
2. The subject suddenly charges the officer, striking him in the face and chest with his fists.
3. The subject continues to strike the officer in the face and chest.
4. The subject falls unconscious

**OFFICER'S REACTION**

1. The officer informs the subject that he is under arrest and verbally directs the subject into a position for handcuffing.
2. The officer yells at the subject to stop and tries to radio for help (while being hit).
3. The officer draws his handgun and shoots the subject.
4. The officer handcuffs the subject.

SUBJECT'S ACTION

1. The subject is sitting on a chair.
2. The subject holds onto the chair tightly and draws his arms and legs closely toward his abdomen in a seated fetal position.
3. The subject remains in a tight fetal position.

OFFICER'S REACTION

1. Officer A tells the subject several times that he is under arrest and to extend his arms straight back behind the chair.
2. The officers grasp the subject's upper arms and try to pull them away from his body.
3. Officer A strikes the subject in the arm with the baton.
4. Officer B continues to pull on the subject's upper arm.