

A Medical Review of Strategos International's "Physical Conflict Resolution" (PCR) Course

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About the author: Dr Butler has been certified by the American Board of Surgery and the American Board of Thoracic Surgery. He attained Primary Certification in Aerospace Medicine. He has a Ph.D. in Physiology and Biophysics. Dr Butler served for many years as Director of Cardiac Surgery at Bronson Methodist Hospital--- part of the Residency Program of Michigan State University. He has had teaching appointments at Harvard University, the Mayo Clinic, Louisiana State University, the University of Utah, and the University of Alabama. He is a Physician for the United States Amateur Boxing Team. Dr Butler has written many scientific articles, medical textbook chapters, and books.

This paper presents a review of the Strategos International Physical Conflict Resolution (PCR) course from a medical perspective.

Introduction

Strategos International has developed a Physical Conflict Resolution (PCR) course (commonly known as defensive tactics) that was designed to be implemented by U.S. Law Enforcement agencies. PCR was specifically constructed after 20 years of interaction with federal, state and local law enforcement agencies serving as a practical test bed for its presentation. Many of its concepts and training requirements were perfected and codified following the introspective debriefing of repetitive force-on-force drilling and scenarios that were frequently conducted during this time frame. The PCR course contains unique and powerful training methodologies specifically designed to inculcate an extremely useful and repeatable biomechanical skill set to the target audience in a relatively short period of time.

Leading the development for Strategos International is former Naval Special Warfare Operator Ken J. Good who has extensive close quarter battle and martial arts experience as well as several decades of training program development in these same areas with both military and law enforcement personnel. PCR was influenced in principle by a combination of Japanese Aiki Jujutsu and Russian Martial Arts, Systema. Systema is a previously obscure area of study formerly held within the Russian Special Forces community (Spetnaz). PCR is specifically tailored to reflect the administrative, legal, and practical realities of U.S. Law Enforcement operations.



At its core PCR :

- Is not a sport or competitive application
- Is a professional application and must be viewed as such
- Presents principles not just techniques
- Deals with multiple adversary confrontations
- Presumes Officers and Threats are armed with an array of weapons/options
- Understands Law Enforcement agencies have unique training considerations
- Recognizes Law Enforcement agencies have a wide cross-section of personnel
- Provides powerful alternatives to Law Enforcement agencies uniquely constrained by administrative, legal, and political considerations as they work within the scope of public view and scrutiny.

PCR has been presented and well received at the national and regional conferences for the International Association of Law Enforcement Firearms Instructors (IALEFI), American Society for Law Enforcement Training (ASLET), SWAT Round-up, and several Tactical Officers Associations Training conferences. At the time of this writing, PCR has been P.O.S.T. approved for the state of Missouri and is now being implemented in several academies and regional training institutions within the states of Missouri, Nebraska, and Florida.

The question to be addressed in this review is whether this course would be desirable, effective, and medically safe for introduction into communities as a standard curriculum for police academies and continuing education for active, experienced Officers. The answer is most definitely in the affirmative.

Nature of the Course

The Instructor Level Course is five days - 40 hours.

The course involves approximately two hours of lecture and video demonstration, 38 hours of hands-on, practical demonstrations and interactive learning.

Subject matter encompasses:

- Protecting self during a fall
- Working from the ground
- Protecting self during fall with a firearm
- Techniques of posture, breath control, motion, and breathing
- Principles of balance (front and rear triangulation drills in the human subject)
- Defensive techniques with single and multiple adversaries (including unarmed against unarmed, unarmed against baton, handgun, knife, pistol and long gun)
- Striking techniques and evasion including hand-strikes, kicks, weapon-strikes
- Overview of Pressure Points
- Displacement with a firearm
- Weapon retention and take away of baton, handgun, long gun with single and multiple adversaries
- Removal of subjects from vehicles
- Two Officer teamwork techniques
- Arrest and Control Concepts and Techniques
- Unlocking non-compliant positions (protesters, persons concealing weapons, etc.)
- Improvised weapons
- Work in low light situations

Method of Study

- A knowledge base from doctorates in medicine and biophysics was used to observe mechanics and behavior of more than 20 students taking the course.
- The author participated in and graduated from the entire course.
- All takedowns, throws, locks, and strikes taught in the course were performed repeatedly on the author without injury.

Overview

The course design is "open architecture". The material, principles, and techniques demonstrated are all based on known biomechanical and psychological characteristics of the human subject. The principles and techniques are presented with the expectation that department subject matter experts will tailor them to meet specific departmental guidelines, policies and rules of engagement.

Each introduction to a new aspect of the course is preceded by a brief description of the anatomy, how it functions, and from this, how function can be reinforced and protected during attack or disrupted when under attack. For example the knee is composed of the distal ends of two bones the tibia and the fibula joined with the distal end of the femur. The joint is cushioned by cartilage and protected anteriorly by the knee cap. The articulations of the three bones are made by the medial collateral, lateral collateral, anterior cruciate, and posterior cruciate ligaments as well as surrounding muscular structures. The presence of two bones in the lower leg adds medial and lateral rotation to the normal anterior and posterior motion of the foot. Rather than attempting to recall or memorize a dizzying array of techniques the students are taught to study the effect on position and displacement of the knee joint on the subject's balance from a variety of positions and angles using an extremely low level of energy and force.

While one student stands, the other will carefully explore the knee joint. Students get down on the floor and explore the balance points, strengths and weaknesses of the training partner's knee. This leads to rapid awareness of multiple balance disruption techniques. By understanding principles of balance, escape, and disruption of balance, the student learns to defend himself when caught in a standing, lying down, or sitting position. Defense is based on biomechanical function not aggression or some predetermined sequence of events that rarely manifest themselves in an actual encounter with a non-compliant suspect.

Using the foot, knee, elbow or hand to move the knee along its natural axis brings a subject to the ground without injury to the joint. The maneuver is so simple and quick that very little activity is obvious to the casual observer. The encounter does not appear violent. The “take-down” is ***absolutely atraumatic to the joint***. This is quite significant as all actions taken by Officers when the use of force is required are generally subject to close scrutiny.

The entire course framework is based on these types of physiologic principles as just applied to the knee. This methodology extends to all areas of the body. This allows Officers to assume control without injury to themselves using only the force necessary to apprehend subjects in a manner consistent with the dynamic of actual confrontation.

In a word this approach is ***efficient***.

By nature, the PCR system exploits the natural weaknesses of adversaries with comparatively little motion. Threats are given very little time and space to control. The system appears much less violent than more traditional systems, both to the live witness and any video taped recording. The observer at first believes that course participants are “taking” falls or may be confused as to why an adversary is suddenly on the ground. Initially, it may be necessary to observe or personally feel the event several times before grasping what actually transpired. Only after the system is understood and experienced, does its high efficiency become apparent.

Subjects who are threats to law enforcement are often impervious to pain as the result of emotionally or chemically altered mental and physical states. It is noteworthy that pain compliance and a strength-based approach is not a dominant operating system in PCR,

Although the appearance of PCR techniques is much less violent, they are no less effective than those of systems better known and accepted in the USA. All PCR movements are based on sound and repeatable biomechanics. In terms of effectiveness, the methodology ranks at the top of the list!



Students are briefed on the open architecture course structure. The PCR instructor lays out the rules of behavior necessary to assure safety during training. The class includes SWAT Officers, patrol Officers, corrections Officers, male and female, large and small. Outcome is regularly discussed during the course. Officers are not encouraged to meet incoming aggression with more aggression and force. They are relentlessly shown the benefits of maneuvering to avoid debilitating attacks. They learn to take the position gained by maneuvering and utilize it to their advantage. Appropriate force is always stressed.

This is not a lecture-based approach; it is a hands-on presentation. Officers who take this course need not be young (the author is in his 60's) but should be in good physical condition and of determined mental deposition. Physical contact, pain and sore muscles should be expected. Bodily injury should not be expected.

Of the more than twenty students observed, all successfully completed the course. One course participant started in the martial arts at the age of four. By age 15 he was training other students for their black belts. Currently, he holds higher-level Black Belts in three disciplines. This man was far "ahead" of the class. When asked if he benefited from the course, he responded, "When I came here I felt as if my cup were empty. I leave with it full!"



Pillars of the PCR Approach

Students are introduced to concepts of breathing, posture, relaxation, and movement that form the pillars of the course. All participants are taught how to fall in order to protect vital parts of their bodies in order to maintain maximum function after the fall. Eventually they learn to turn these falls or escapes into offensive movements as required.

Breathing techniques are taught to calm the mind during confrontation, extend endurance, to diffuse pain, and to serve as a natural defense mechanism. Some examples of the use of breathing in this course:

1) The PCR curriculum includes a breathing technique, which makes it virtually impossible to crush the trachea with a "Street Choke". Even slightly built female students could indefinitely withstand 200 lb. males with fingers of both hands behind their cervical vertebrae and both thumbs jamming full force into the trachea to crush the airway! The Officers despite aggressive attempts to constrict the airway experienced no significant loss of function.

2) A blow to the chest does not cause shortness of breath or baro-trauma because of a technique of relaxed exhalation taught. This technique decreases the volume of air present in the lungs to be compressed, keeps the glottis open--- "takes the cap off"--- allowing air to escape which otherwise would have been compressed, and allows the energy of the blow to be absorbed harmlessly by the chest wall. Although not commonly addressed in this situation, exhalation increases pressure on the great veins filling the heart. The effect of this is a decrease in cardiac filling and size leaving the heart smaller, less distended, and less vulnerable to a physical blow.

3) PCR's constant emphasis on remembering to inhale during physical encounters is equally important to exhalation technique. Psychologically, it is a human tendency "to forget to breathe "when under attack" and struggling. Physiologically, negative pressure in the chest created during inspiration expands the vena cava which promotes cardiac filling. Increased cardiac filling pressure results in increased cardiac output. (This relationship between filling pressure and cardiac output is known as Starling's Law of the heart.) The bottom line is that students develop the habit of maximizing oxygen intake and cardiac output in these critical moments when life depends on performance.

4) Some Officers were surprised that breathing techniques could be used to counter lateral vascular neck restraints (LVNR) which is a standard technique for many agencies. Officers who applied the LVNR to an instructor were unsuccessful in subduing him. Although the use of these

techniques is not permitted by some agencies, this prohibition will not restrain aggressive criminals from applying them to law enforcement personnel. Therefore, Officers should fully understand the dynamics of LVNR application and the counters to them.

5) The use of breathing to diffuse pain is amply covered. The effectiveness of controlled respiration to control pain is well established in medicine. The Lamaze Method of Childbirth is a widely accepted methodology of Breathing to diffuse and manage pain during one of the most painful experiences known. (Women who are taught this technique of controlled respiration go through the birth process without medication or sedation.)

Instructors of PCR have excellent proficiency in the use of breathing and many aspects of breathing technique. Those who successfully complete PCR training will be more than journeymen in this field!



Note: Officers that were involved in high-speed vehicle pursuits have reported that they consciously remembered to calm themselves down in the midst of the pursuit by utilizing the breathing strategy taught to them during a PCR course.

This resulted in calm transmissions on the radio during the actual pursuit and calmer actions during the subsequent arrest of the subject.

Posture is used to maintain balance (as a defensive technique) and to facilitate the observation, and movement essential in multiple-adversary situations.

For example, physiologically:

- 1) As the head remains erect over the body, it is in a natural position to maintain direct and peripheral vision which is critical to recognizing often subtle pre-attack indicators as well as committed attack lines.
- 2) Maintaining a vertical head, directly over the spinal column posture does not provide a 16 lb. counter weight/ever, which can be used to toss the body violently about.
- 3) A head erect above normal skeletal structure is extremely difficult to put into a "headlock".
- 4) A head erect posture does not allow unseen upper cutting strikes to impact the mandible, thereby eliminating many possibilities for trauma and unconsciousness.
- 4) Proper posture facilitates mobility. It allows maximum freedom of movement. It allows individuals to react in a timelier manner to potentially damaging attacks.

Relaxation is used in combination with breathing techniques to extend endurance and facilitate maximum biomechanical function. Relaxation is used in and of itself to facilitate weapons retention, escape/avoidance of joint locks or holds, enhance ability to absorb blows with minimal injury, as well as an effective strategy to prevail in grappling and/or multiple adversary situations.

The drilling format of the course continually places the Officer in locks or holds, which initially appear inescapable. By sheer repetition, Officers learn proper relaxation, and begin to simply "slip out" or escape, turning the tables on the adversary.

In multiple adversary encounters, relaxation allows the Officer to absorb the adversary's energy and focus it or redirect it back if necessary. The natural tendency to tighten and struggle is self-defeating against multiples. The use of strength against multiple attackers has very limited winning potential. PCR provides the structured practice platform in conjunction with training partners to teach Officers to use relaxation as a powerful tool to prevail. Although counter-intuitive, this is an extremely powerful notion.

The illustration of a drunk driving accident was brought up during the course. The instructor asked, "Who usually walks away from a drunk driving accident?" The answer was: The drunk! Why? Students immediately associated the idea of relaxation and survivability in a powerful energy transfer situation. From a medical point of view this is consistent. In application, an Officer who is functioning in a cultivated posture of relaxation will use less force and is less likely to be injured during confrontations.

Movement is a lynchpin in PCR training. Techniques of weapons retention/take-away, as well as defenses against various attacks are “movement” based. If they seem “foreign” to methods commonly propagated, the advantage of learning these new approaches becomes quite evident when one is faced with multiple adversaries.

Against multiples, movement offers protection, escape, and the opportunity for devastating counter-attack as required. Movement turns debilitating blows into glancing blows. Movement allows the Officer under attack to seize the advantage by using the physiology of the human body and just as importantly the physiology of the human mind!

Certain simple movements take advantage of the brain’s involuntary perception and reaction to motion to cause assailing blows to go astray. PCR exploits the human’s natural Neurological and Physical weaknesses in tracking a moving body. Otherwise lethal attacks are dissipated or thrown completely off target. Movement allows an Officer in a seemingly impossible situation to gain the position of advantage.

Students are taught to triangulate the human form in any position. This is a core concept in PCR. Euclidean geometry teaches that to be stable, a stool must have a minimum of three legs. As a biped, the human is inherently unstable. When standing upright, an imaginary isosceles triangle is constructed by envisioning the points where both feet are set as two apices of a triangle. The third apex is the point where the top of the tibia (if it were disconnected at the knee) would touch the ground equidistant from both feet. With very little force vectored toward the imaginary third apex, the standing human will lose his balance and fall. Training starts with "statue drills". The strongest participant assumes and holds his strongest stance. He is brought to the ground again and again by a single finger. The same principle of triangulation is used in more complex drills with subjects in motion. A physical strike vectored toward that third apex generally results in a "knockdown"!

The converse of these four pillars is used to neutralize a violent attacker.

- Disrupt the opponents’ posture to make them exponentially weaker.
- Use lack of oxygen or lack of breath control to change the attacker’s priorities as well as exploit the effects of tunnel vision.
- Use the suspect’s tension and lack of mobility to out maneuver larger/stronger threats and gain biomechanical advantages to end the confrontation.

When specific techniques are taught, they are presented in modular and sequential form. This takes advantage of how the human mind acquires and analyzes new information. The Officer under attack is initially taught how to escape or avoid a wide variety of attacks in a relatively-confined area. Officers are then introduced to the concept of bringing the adversary down using only specific parts of the body, initially starting from the top down using “head-techniques”. Later the Officer is shown how to successfully control the body using “wrist-techniques”, “elbow manipulations”, “upper body contact”, “knee movements”, etc. Once individual components are mastered, techniques are blended creating a useful arsenal of function. Adaptability, non-linear action, and freedom of motion are highly encouraged at this point. The Officer under attack now spontaneously recognizes the vulnerability of his assailant and rapidly responds.

As one understands and becomes familiar with the system, so many possibilities become available to the Officer that prosaic description becomes awkward. The same multiplicity of solutions allows the Officer to choose appropriately among levels of force. PCR gives the Officer options from harmless “take-down” to “devastating force” ----as required to assure preservation of the Officer’s life or the lives of those he or she is sworn to protect.



PCR is a Simple System

Simplicity is a critical aspect of PCR. The biomechanical tools presented are easily retained and applied in the real world. Students are presented with core concepts and then adapt them within department policy to their body type and capabilities. This flexibility of response is critical in a dynamic encounter. There are many methodologies available, but few offer such a reasonable balance of simplicity and effectiveness within the Law Enforcement context.

Although relatively simple in concept, students of all proficiently levels were constantly challenged and pushed to new levels of function. After personally interviewing the participants following the course, the author noted that they were more confident in their actual ability to survive and prevail in a lethal assault attempt on their person as a result of attending a PCR course.

Universality and Transmissibility of the Technique

PCR Techniques are appropriate and effective for men and women of a wide disparity of size and body habitus. A Human Being over 5 ft. tall, with reasonable control of limbs, balance and movement should benefit from this training. The course by its nature defies both "disparity of size" and "majority of force". A young lady of no more than 115 to 120 lbs was proficient enough to hold off two master level baton practitioners working in tandem.

PCR as an Instructor Level Course:

The physical training and instruction manuals provided to those taking the course prepare them to pass on much suitable material to fellow untrained Officers. This course is not simply a confidence builder, which can ultimately leave an Officer more vulnerable. The curriculum is such that an able-bodied Officer untrained in the martial arts should be able to master enough material to use it effectively in life-threatening situations.

Benefits of PCR to the Officer:

PCR opens new alternatives of less than lethal force. It gives the Officer both the ability and confidence in the ability to control an escalating force situation. It provides the Officer a whole new array of effective responses to typical arrest and control situations as well as life-threatening attacks, which do not allow time to immediately access a weapon. It allows the Officer a range of responses from "takedown" to "incapacitation" as demanded by the situation.

Benefits of PCR to the Department:

PCR decreases departmental liability by providing its Officers with effective less-than lethal-alternatives in situations of physical conflict using a protocol that is not shocking to the public viewing it. PCR provides an array of responses that are not physically damaging to suspects, therefore easily justified in legal and civil disputes.

PCR appears much less aggressive to the observer than standard apprehension, control, and baton techniques. This “appearance” will logically result in fewer citizen complaints. It will lower the departmental profile. PCR is an alternative which most who take the course believe is superior to many of the standard methodologies provided to Officers-in-training.

Summary

From an outside Observer's Point of View:

The PCR approach is much more efficient and effective yet less traumatic than the other commonly taught methodologies. The techniques are simple. They work. There just isn't much to see from the outside vantage point. This hallmark of PCR training should decrease the department's liability exposure in a time when every move of an Officer is potentially caught on some type of digital media for later review.

From a Psychological Point of View:

The Officer taking the course will find new confidence in ability to control physically threatening situations. Calmness of mind and effectiveness of technique improve survival in the most difficult circumstances and are not limited to strictly hands-on confrontations. This same mindset is totally compatible, transferable and highly beneficial when Officers are involved in verbal confrontations, the rigors of pursuit driving, or in firearms based altercations. Calmness breeds calmness in other Officers and the public.

From a Medical Viewpoint:

The techniques of PCR are based on sound medical principles of biomechanics. PCR will provide an Officer under attack with a spectrum of response ranging from "takedown and control" to "complete incapacitation" of the attacker depending upon the totality of circumstances associated with the attack.

The overall effectiveness of PCR training will enhance the survival of every Officer who studies it.

Any department that maintains high standards in training should carefully consider the innovative Physical Conflict Resolution (PCR) protocol for their defensive tactics program.