

V-VICTA®

VirTra - Virtual Interactive Coursework Training Academy®

TOURNIQUET APPLICATION UNDER THREAT

Training Manual



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AUTHOR

Lon Bartel; VirTra - Director of Training & Curriculum

TRAINING COURSE CERTIFICATION

This "Tourniquet Application Under Threat" training course, developed by VirTra, has been certified by the IADLEST National Certification Program™ on 4/14/2024.

Certification Number: 24794-2404





Tourniquet Application Under Threat

ESTIMATED TIME

3.5 - 4 Hours (up to 4 students and full class presentation). Course length is dependent on class size and frequency/ duration of breaks. Officers may ask questions after each module and at the end of the class.

The class can be conducted as 3 approximate one-hour blocks.

- Block 1 Partner Drills
- Block 2 Solo Drills
- Block 3 Testing and Evaluation

The class can be conducted as ten 20-minute blocks, with one 30-minute starting session conducted in an extended briefing as well. The ten blocks usually consist of a safety check (5 min) and then a 15-min training event. The last block is the scenario test and written test.

- Safety check (5 minutes)
- Pre-test and Introduction (5-10 minutes)
- Support arm injury TQT application (5 min)
 - » Support arm injury TQT application Partner Drill (10 min)
- Primary arm injury TQT application (5 min)
 - » Primary arm injury TQT application Partner Drill (10 min)
- Lower Leg injury TQT application (5 min)
 - » Lower Leg injury TQT application Partner Drill (10 min)
- Upper leg injury TQT application (5 min)
 - » Upper leg injury TQT application **Partner Drill** (10 min)
- Support arm injury TQT application and weapon draw presentation (5 min)
 - » Support arm injury TQT application and weapon draw full speed Solo Drill (10 min)
- Primary arm injury TQT application and weapon draw presentation (5 min)
 - » Primary arm injury TQT application and weapon draw **Solo Drill** (10 min)
- Lower Leg injury TQT application and weapon draw presentation (5 min)
 - » Lower Leg injury TQT application and weapon draw Solo Drill (10 min)
- Upper leg injury TQT application and weapon draw presentation (5 min)
 - » Upper leg injury TQT application and weapon draw **Solo Drill** (10 min)
- Randomization of an application at instructor's direction (15-30 min) Solo as well as Partner Drill
- Scenario Event Training (20 minutes) during this stage the instructor will randomly require the student to
 - perform one of the above skills. Ideally, this is conducted while using the Threat-Fire.™



PERFORMANCE OBJECTIVE

At the end of the simulation instruction, students will successfully conduct the following skills:

- A. Partner Drills
 - 1. Support arm TQT application, partner covers threat area
 - 2. Primary arm TQT application
 - 3. Lower Leg injury TQT application
 - 4. Upper leg injury TQT application
- B. Solo Officer Drills
 - 1. Support arm TQT application and weapon draw in under 30 seconds
 - 2. Primary arm TQT application and support hand weapon draw in under 45 seconds (mixed order)
 - 3. Lower Leg injury TQT application and weapon draw in under 30 seconds
 - 4. Upper leg injury TQT application and weapon draw in under 30 seconds (mixed order)

PARTNER DRILLS

The course is designed to run as a solo officer but also as a partner drill. The events are set so as the "injured officer" is applying their own tourniquet while the partner is covering the threat area.

CLASS SIZE

Designed for a class of 8 solo officers with no more than 4 at a time in the simulator (V-300), with a maximum class size of 8 (2 groups of 4). Use on a V-180 or V-100 will have to alter the presentation and the duration appropriately.

The following training plan and lesson plan is designed to be used with the VirTra simulator. Whereas many of the techniques have been used over many years in LE, this training plan maximizes training time and leverages the strengths of the VirTra Training System.

The instructor shall first ensure that students are familiar with the presented material. The outline provides the overview of basic Tourniquet Application Under Threat and is provided to supplement and provide context to the use of the simulation scenarios.

The simulation scenarios are used as a tool to facilitate the understanding of the concepts.

All officers will be allowed to watch the other pairs participate in the exercise. This is done to maximize the benefit of modeling for adult learners.



Sample Student group 1 set up:

- A. Officer Yackley
- B. Officer Danninger
- C. Officer Adams
- D. Officer Stephens

TACTICS, TRAINING, AND PROCEDURES (TTP)

A. **"Tourniquet Application Under Threat"**- play/pause as needed

- 1. This section of the training allows for multiple repetitions of TQT application
- 2. <u>"Option 1 Instant"</u> An instant threat is presented
- <u>"Option 2 30sec"</u> Once pressed the threats will come out after 30 seconds. This allows for the instructor to use a sound effect (and potentially Threat-fire) to start the event and have a threat present themselves 30 seconds later. (The V-100 version has two 30 second options with different threats.)
- 4. <u>"Option 3 45sec"</u> Once pressed the threats will come out after 45 seconds. This allows for the instructor to use a sound effect (and potentially Threat-fire) to start the event and have a threat present themselves 45 seconds later.
- 5. The various options can be used in combination to provide multiple threats with different timing.
- B. Midnight Madness Two options for TQT application test
 - 1. Played up to the subject behind the game console shoots at the officer. This allows for the officer to neutralize the threat and then treat their wounds. It is up to instructor if the student is to continue into the theater.
 - 2. Played past the initial contact and successful resolution in the lobby to the point where the offduty officer steps out of the theater. Both the on-screen asset and the student can be hit and are required to treat before moving on, the instructor must use the PAUSE feature to make this work.
- C. **School Mayhem** When the on-screen officer is hit, the student will also be hit requiring that a TQT be used. It is up to instructor if the student is to continue into the theater.
 - 1. When the on-screen officer is hit, the student will also be hit requiring that a TQT be used. It is up to instructor if the student is to continue into the theater library.
 - 2. Female armed with shotgun executes an innocent and then will shoot at the officer. The TQT application can occur here. If the student is able to stop her in time then the Instructor will use sound effect of gunfire just prior to the assailant coming from the bookcase area.

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SKILLS LIST

- A. Partner Drill
 - 1. Support arm TQT application Partner Drill
 - 2. Primary arm TQT application Partner Drill
 - 3. Lower leg injury TQT application Partner Drill
 - 4. Upper leg injury TQT application Partner Drill

B. Solo Drill

- 1. Support arm TQT application Solo Drill
- 2. Primary arm TQT application Solo Drill
- 3. Lower leg injury TQT application Solo Drill
- 4. Upper leg injury TQT application Solo Drill



I. INSTRUCTOR INTRODUCTION

II. INTRODUCTION

A. COURSE BUILDS ON OTHER COURSES

III. GENERAL TOURNIQUET USES

- A. BLEEDING CANNOT BE STOPPED WITH DIRECT PRESSURE AND ELEVATION
- B. THERE IS A REASON THAT DIRECT PRESSURE AND ELEVATION CANNOT BE MAINTAINED

IV. WHEN DIRECT PRESSURE AND ELEVATION CANNOT BE MAINTAINED

- A. YOU ARE STILL IN THE FIGHT
- B. "SHOT AIN'T DEAD!"

V. APPLICATION PARAMETERS VARY GREATLY

- A. EVENT DEMANDS
- B. RAPID BLOOD LOSS



VI. OFFICER DEMANDS

- A. "GETTING OFF THE 'X' AND/OR GET BEHIND COVER"
- B. OTHERS BASED ON THE CHALLENGES PRESENTED
- VII. ALWAYS END THE THREAT FIRST?

- VIII. TOURNIQUET MYTHS
 - A. LOSS OF LIMB IS GUARANTEED
- IX. TOURNIQUET APPLICATION PROCESS
- X. BASIC PRINCIPLES OF APPLICATION HIGH AND TIGHT
 - A. HIGH ENOUGH
 - B. FAST ENOUGH YOU MAY HAVE LESS THAN 30 SECONDS
 - C. ENSURE IT IS NOT PLACED OVER ITEMS IN POCKETS



- D. 1.5 TO 2 INCHES OF COVERAGE
- E. IF PUT ON RIGHT IT WILL HURT
- F. IF NEEDED- ADD MORE, AVOID REMOVAL AND REAPPLICATION IF AT ALL POSSIBLE

XI. PARTNER DRILLS

- A. AN UNINJURED PARTNER CAN FOCUS INTENTLY ON THREATS IN THE ENVIRONMENT
- B. THE CONSCIOUS BUT INJURED OFFICER CAN GET THEIR OWN TQT ON
- XII. CLASS TOURNIQUET FEATURE THE R.A.T. SYSTEM
 - A. IT IS VERY COMPACT
 - B. FOCUS ON GROSS MOTOR SKILLS FOR AN APPLICATION
 - C. CAN EFFECTIVELY BE USED ON SMALLER LIMBS SUCH AS ON CHILDREN OR POLICE K-9'S
 - D. OTHER HIGH-QUALITY TOURNIQUETS TO CONSIDER



- XIII. TYPICAL TOURNIQUET MAKEUP
- XIV. IMPORTANCE OF BRINGING YOUR AROUSAL LEVEL DOWN TO SLOW YOUR HEART RATE
- XV. SUPPORT ARM INJURY SLOW TALK THROUGH AND APPLICATION

XVI. PRIMARY ARM INJURY SLOW TALK THROUGH AND APPLICATION

XVII. LOWER LEG INJURY SLOW TALK THROUGH APPLICATION

XVIII. HIGH THIGH INJURY SLOW TALK THROUGH AND APPLICATION



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I. INSTRUCTOR INTRODUCTION

Instructor will introduce themselves to the class. This intro should be no more than 2-3 minutes long and establish why they are qualified to teach the course and how long they have been with the organization. This not a moment to brag but to build confidence and trust from the attending students.

II. INTRODUCTION

The purpose of this course is to provide a hands-on teach/train/test format for tourniquet application during a critical incident. We will cover the when/why and how of tourniquet application.

A. COURSE BUILDS

This course builds on and is supplemented by the "Injured Officer Handgun Manipulation" and the "Injured Officer Rifle Manipulation" course. However, it can also be run by itself. The agency instructor will confirm if you should or should not participate in this training.

III. GENERAL TOURNIQUET USES

In general, we use a tourniquet in two cases¹:

A. BLEEDING CANNOT BE STOPPED WITH DIRECT PRESSURE AND ELEVATION

When both are applied immediately and simultaneously.

B. THERE IS A REASON THAT DIRECT PRESSURE AND ELEVATION CANNOT BE MAINTAINED

- 1. Ongoing threat requiring use of at least one arm to fight
- 2. The need to rapidly leave the area is required, and being mobile/ambulatory prevents the ability to keep direct pressure

IV. WHEN DIRECT PRESSURE AND ELEVATION CANNOT BE MAINTAINED

The second above listed reason is presented when an officer receives an injury resulting in high blood loss and must still be able to fight or function.

A. YOU ARE STILL IN THE FIGHT

Statistically, if you realized you have been shot/stabbed you are still in the fight and have time to do something about it.

B. "SHOT AIN'T DEAD!"



V. APPLICATION PARAMETERS VARY GREATLY

A. EVENT DEMANDS

The demands of the event and in what order required tasks need to be completed must be evaluated.

B. RAPID BLOOD LOSS

Rapid blood loss can quickly lead to death, while slow uncontrolled blood loss can lead to altered mental states that can put the officer in great danger as well.

VI. OFFICER DEMANDS

In general, the officer has the following task demands:

A. "GETTING OFF THE 'X' AND/OR GET BEHIND COVER

The first "getting off the 'X' and/or get behind cover" is typically going to be the 1st priority.

B. OTHERS BASED ON THE CHALLENGES PRESENTED

- 1. Get off the "X" and/or get behind cover
- 2. Radio for emergency assistance
- 3. End the threat
- 4. Get the bleeding stopped/slowed

VII. ALWAYS END THE THREAT FIRST?

It is easy to say something as heroic as "Always end the threat first!" This simplistic view does not take into account the variability of what an officer may encounter. You may be better off getting to much better position then you can then decide if you need to conduct self-aid, radio for help or fight.

VIII. TOURNIQUET MYTHS

There are myths that still cause some to hesitate on the use of a tourniquet.

A. LOSS OF LIMB IS GUARANTEED

The biggest myth is that "if a tourniquet is used then limb loss is all but guaranteed." This is not true. Actual field use has shown that a tourniquet can be applied for a few hours and the limb can still be saved.²

IX. TOURNIQUET APPLICATION PROCESS

We are going to keep the application process to as simple and gross motor skill as possible. Dexterity, fine motor skills, and complex decision making may not be a probability if a tourniquet is being considered.



X. BASIC PRINCIPLES OF APPLICATION - HIGH AND TIGHT³

A. HIGH ENOUGH

- 1. Avoid double bone areas
 - A. Forearm
 - B. Lower leg

B. FAST ENOUGH - YOU MAY HAVE LESS THAN 30 SECONDS

C. ENSURE IT IS NOT PLACED OVER ITEMS IN POCKETS

- 1. Front pants pockets
- 2. Cargo pockets
- 3. Arm pockets (tactical sleeves)

D. 1.5 TO 2 INCHES OF COVERAGE

- E. IF PUT ON RIGHT IT WILL HURT
- F. IF NEEDED, ADD MORE AND AVOID REMOVAL AND REAPPLICATION IF AT ALL POSSIBLE

XI. PARTNER DRILLS

In a partner drill, you should apply your TQT to yourself while your partner covers the potential threat area.

- A. AN UNINJURED PARTNER CAN FOCUS INTENTLY ON THREATS IN THE ENVIRONMENT
- B. THE CONSCIOUS BUT INJURED OFFICER CAN GET THEIR OWN TQT ON

XII. CLASS TOURNIQUET FEATURE - THE R.A.T. SYSTEM

The R.A.T.S. is featured specifically for three important law enforcement considerations:

A. IT IS VERY COMPACT

- 1. If an officer doesn't have the room they won't carry it.
- 2. The R.A.T.S. can be compacted into a small package allowing for easy carry or even the carrying of multiple R.A.T. systems.



B. FOCUS ON GROSS MOTOR SKILLS FOR AN APPLICATION

- 1. There is no requirement to thread a strap into a buckle.
- 2. Threading that buckle may be very challenging in a low light environment and harder with gloves on.
 - A. Under highly stressful conditions there can be a rapid loss of fine motor skills. Unless a skill has been trained to high skill levels this degradation of fine motor skill is problematic.
 - B. Statistically, most law enforcement shootings occur in diminished light settings.

C. CAN EFFECTIVELY BE USED ON SMALLER LIMBS SUCH AS ON CHILDREN OR POLICE K-9'S.

- 1. Active threat events have shown us that children have often been the target of choice.
- 2. Having an effective way to stop or drastically slow the bleeding until we can get them to help could prove vital.

D. OTHER HIGH-QUALITY TOURNIQUETS TO CONSIDER

There are multiple other high-quality effective tourniquets on the market like the SOFT T and the C.A.T. Which if you are issued these systems you can still use the simulation to conduct training on.

XIII. TYPICAL TOURNIQUET MAKEUP

The typical tourniquet is made up of a strap, buckle and windlass. The strap functions to put the pressure on the circulatory system to stem the bleeding.

- A. The strap is run through the buckle/clasp and the windlass is used to provide the tension.
- B. The R.A.T. system does not have these features. It is made of a vulcanized rubber that is run through a metal clasp creating a three-finger loop.

XIV. IMPORTANCE OF BRINGING YOUR AROUSAL LEVEL DOWN TO SLOW YOUR HEART RATE

The last point we want to make is the importance of bringing your arousal level down to slow your heart rate. This topic is further addressed in another VirTra training course.

- A. Using autogenic breathing in a high-stress environment is critical.
- B. It is important that we cognitively focus on conducting this breathing methodology when we are applying the tourniquet in training.
- C. We want this learned behavior of applying the tourniquet to automate the use of autogenic breathing.
- D. Psychologically, we want to pair these behaviors so it occurs without conscious thought.



XV. SUPPORT ARM INJURY SLOW TALK THROUGH AND APPLICATION

A. SUPPORT ARM SKILL DRILL

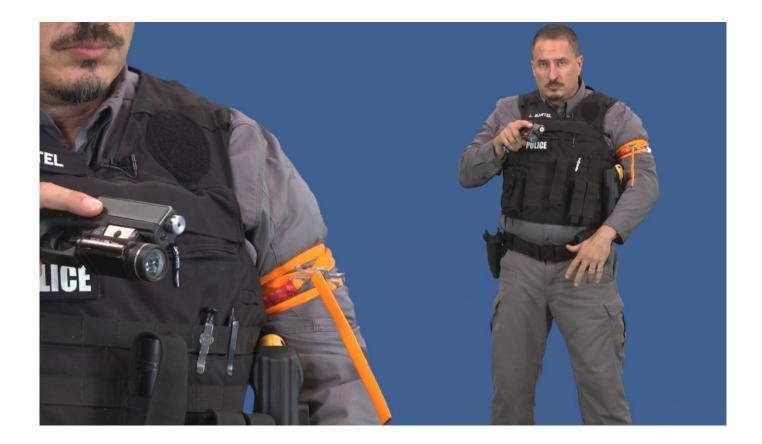
- 1. The RAT is placed over the support arm and the main body is run through the three-finger loop.
- 2. The RAT is then wrapped around the limb creating a 1.5-2 inch width.
- 3. The tail end is then locked into the clasp.

B. SUPPORT ARM INJURY FULL SPEED APPLICATION DRAW AND FIRE ON TARGET

C. DISCUSSION ON DRAWING WEAPON, SELF-EXTRICATION, AND RADIO FOR HELP

D. APPLICATION STEPS

- 1. Partner Drill
 - I. Slow and controlled
 - II. Full Speed
 - III. Full speed under threat
- 2. Self-treatment Drill
 - I. Slow and controlled
 - II. Full Speed
 - III. Full speed under threat



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XVI. PRIMARY ARM INJURY SLOW TALK THROUGH AND APPLICATION

A. PRIMARY ARM SKILL DRILL

- 1. The RAT is placed over the primary arm and the main body is run through the three-finger loop.
- 2. The RAT is then wrapped around the limb creating a 1.5-2 inch width.
- 3. The tail end is then locked into the clasp.

B. PRIMARY ARM INJURY FULL SPEED APPLICATION DRAW AND FIRE ON TARGET

C. DISCUSSION ON DRAWING WEAPON, SELF-EXTRICATION, AND RADIO FOR HELP.

D. APPLICATION STEPS

- 1. Partner Drill
 - I. Slow and controlled
 - II. Full Speed
 - III. Full speed under threat
- 2. Self-treatment Drill
 - I. Slow and controlled
 - II. Full Speed
 - III. Full speed under threat





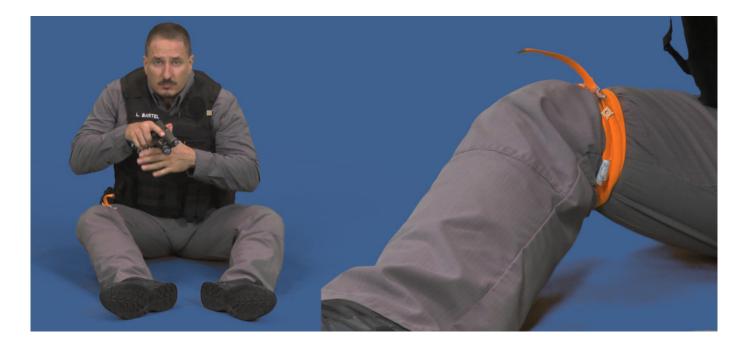
XVII. LOWER LEG INJURY SLOW TALK THROUGH AND APPLICATION

A. LOWER LEG SKILL DRILL

- 1. The RAT is placed over the leg and the main body is run through the three-finger loop.
- 2. The application needs to be above the knee.
- 3. The RAT is then wrapped around the limb creating a 1.5-2 inch width.
- 4. The tail end is then locked into the clasp.
- B. A CONSIDERATION FOR A 2ND RAT SHOULD BE GIVEN DUE TO THE SIZE OF THE LIMB.
- C. LOWER LEG INJURY FULL SPEED APPLICATION DRAW AND FIRE ON TARGET.
- D. DISCUSSION ON DRAWING WEAPON, SELF-EXTRICATION, AND RADIO FOR HELP.
- E. SELF-EXTRICATION MAY BE MORE PROBLEMATIC OR IMPOSSIBLE WITH LEG INJURIES.

F. APPLICATION STEPS

- 1. Partner Drill
 - I. Slow and controlled
 - II. Full Speed
 - III. Full speed under threat
- 2. Self-treatment Drill
 - I. Slow and controlled
 - II. Full Speed
 - III. Full speed under threat



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XVIII. HIGH THIGH INJURY SLOW TALK THROUGH AND APPLICATION

A. HIGH THIGH SKILL DRILL

- 1. The RAT is placed over the leg and the main body is run through the three-finger loop.
- 2. The application needs to be as high as possible on the thigh. The RAT is then wrapped around the limb creating a 1.5-2 inch width.
- 3. The tail end is then locked into the clasp.
- 4. A consideration for a 2nd RAT should be given due to the size of the limb.

B. FEMORAL BLEED CONSIDERATIONS

It has to be acknowledged that high femoral bleeds may require more specialized equipment to stop the bleeding, or a partner that drives a kneed high into that femoral area to stop or slow the bleeding.

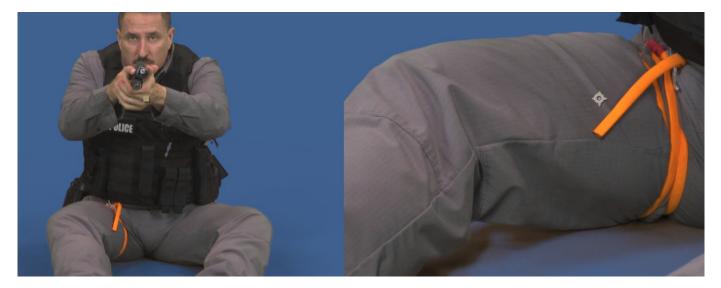
C. DISCUSSION ON DRAWING WEAPON, SELF-EXTRICATION, AND RADIO FOR HELP.

D. SELF-EXTRICATION MAY BE MORE PROBLEMATIC OR IMPOSSIBLE WITH LEG INJURIES.

E. HIGH THIGH INJURY FULL SPEED APPLICATION DRAW AND FIRE ON TARGET

F. APPLICATION STEPS

- 1. Partner Drill
 - I. Slow and controlled
 - II. Full Speed
 - III. Full speed under threat
- 2. Self-treatment Drill
 - I. Slow and controlled
 - II. Full Speed
 - III. Full speed under threat



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XIX. THANK YOU

We want to thank you for your participation in this VirTra Interactive Course. Physical skills diminish over time, so it is critical that you continue to train towards a mastery of the basics.

XX. QUESTIONS?

The instructor may open up the class for questions on the entirety of the course so far. Questions may also be asked at the end of each section.

XXI. REFERENCES

- Shackelford, S. A., Butler, F. K., Kragh, J. F., Stevens, R. A., Seery, J. M., Parson, D. L. 2014. Optimizing the use of limb tourniquets in tactical casualty care: TCCC guidelines change 14-02. 1-41. https://www.naemt.org/docs/default-source/education-documents/tccc/10-9-15-updates/tccc-change-prop-1402-optimizing-tq-use-141109-jsom. pdf?sfvrsn=2
- Shackelford, S. A., Butler, F. K., Kragh, J. F., Stevens, R. A., Seery, J. M., & Parson, D. L. (2014). Optimizing the use of limb tourniquets in tactical casualty care: TCCC guidelines change 14-02. 1-41. Retrieved April 10, 2015, from http://www.vighter.com/wp-content/uploads/2015/01/Position-Paper.pdf



STUDENT NAME:	
---------------	--

DATE:

1. Officers can fight through serious injury and still win a lethal encounter.

- A. True
- B. False
- 2. Use of a tourniquet should never be considered due to limb loss risks.
 - A. True
 - B. False
- 3, Tourniquets can be placed on the forearm or lower leg with no concerns.
 - A. True
 - B. False
- 4. Tourniquets should be considered only when there is massive blood loss.
 - A. True
 - B. False
- 5. "Shot ain't dead."
 - A. True
 - B. False

PRE-TEST KEY

1. True 2. False 3. False 4. False 5. True



STUDENT NAME:

DATE:_____

Written Test (2 pts Each)

1. High enough, fast enough is an important consideration.

- A. True
- B. False
- 2. Tourniquets don't hurt if they are put on correctly.
 - A. True
 - B. False
- 3. We use tourniquets when we cannot stop bleeding with direct pressure and elevation when both are applied immediately and simultaneously.
 - A. True
 - B. False
- 4. We use a tourniquet when direct pressure and elevation cannot be applied, as in a shooting event where there are still active threats present.
 - A. True
 - B. False
- 5. "Shot ain't dead!"
 - A. True
 - B. False



PRACTICAL SKILLS TEST

	Excellent	Acceptable	Failure	
Support arm injury	5 pts	3 pts	0 pts	
application	(Under 30 sec with hits)	(Under 30 sec w/ misses)	(Over 30 seconds)	
Primary arm injury	5 pts	3 pts	0 pts	
application	(Under 45 sec with hits)	(Under 45 sec w/ misses)	(Over 45 seconds)	
Lower leg injury application	5 pts	3 pts	0 pts	
	(Under 30 sec with hits)	(Under 30 sec w/ misses)	(Over 30 seconds)	
Upper leg injury application	5 pts	3 pts	0 pts	
	(Under 30 sec with hits)	(Under 30 sec w/ misses)	(Over 30 seconds)	

Instructor Comments

25 points (out of 30) are required as an aggregate score of the written and practical tests.

TEST KEY

1. True 2. False 3. True 4. True 5. True

TOURNIQUET APPLICATION UNDER THREAT



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XXIV. STUDENT ATTENDANCE ROSTER

TOPIC: TOURNIQUET APPLICATION UNDER THREAT DATE:

Last	First	Badge	Email	Officer's Initials
	_			
	_			
	_			

I certify that each person listed on this roster was present in class for the entire number of training hours reflected, and if not, their training hours have been adjusted and recorded accordingly.

PRINT NAME:

SIGNATURE: _____

TOURNIQUET APPLICATION UNDER THREAT



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XXV. CLASS SURVEY

TOPIC: TOURNIQUET APPLICATION UNDER THREAT

INSTRUCTOR: _____

DATE: _____

CLASS CONTENT	Excellent	Above Average	Good	Below Average	Poor
Class organization					
Class objectives were clearly stated					
Practical activities were relevant to objectives					
All materials/resources were provided					
Topic area was important to Law Enforcement					
CLASS INSTRUCTION					
Instructor was prepared					
Instructor was knowledgeable in the content area					
Manner of presentation of the material was clear					
Effective teaching strategies were used					
Instruction met class objectives					
STUDENT PARTICIPATION					
Level of effort you put into the course					
Your skill/knowledge of the topic at start of course					
Importance of the topic to your assignment					

TOURNIQUET APPLICATION UNDER THREAT



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If you have any questions/issues with any part of this manual, please see contact below:

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295 E. Corporate Pl Chandler, AZ 85225 USA



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