

## SEB Tactical Emergency First Aid

### LOS ANGELES COUNTY SHERIFF'S DEPARTMENT

POST Presenter # 1820

POST # 21772 – Tactical Emergency First Aid / Trauma Care

(TECC for Law Enforcement Officers)

*Expanded Course Outline*

**PURPOSE:** The purpose of this course is to provide a comprehensive foundation and build proficiency of the skills of Tactical Emergency Casualty Care (TECC) as defined by the national protocols established by The Committee for Tactical Emergency Casualty Care. These skills were adopted by CA POST and CA EMSA, and were added to the mandatory scope of practice skills for law enforcement in CCR Title 22 in April 2015. This course provides in-depth coverage of response protocols and priorities, potential threat and injury scenarios, mass casualty triage, and rapid medical stabilization care skills. The class includes concepts lecture, hands-on skill practice, and immersive scenario based skills application. These skills provide the rapid interventions for critical trauma injuries, to stabilize victims, and provide the best outcome for survival and recovery.

#### I. Introduction

- a. Instructors
- b. Students
  - i. Name, agency, years of service, military background, EMS background, last POST FA/CPR/AED Refresher, TECC skills experience
- c. Tactical Emergency Casualty Care (TECC) Introduction
- d. Course overview and objectives
  - i. Reset law enforcement medical care paradigms
  - ii. Build understanding
    1. Basic human anatomy
    2. Basic human physiology
    3. Injury mechanics
  - iii. Build recognition
    1. Injury identification and discrimination
    2. Systemic signs and symptoms
  - iv. Build skills

- e. Pre-test
  - i. Written pre-test, multiple choice assessment of prior knowledge
- f. Law enforcement relevance
  - i. Daily goals
  - ii. Need for TECC

## II. Tourniquet Introduction (Quick hands-on skills)

- a. Massive hemorrhage
- b. Tourniquet Indications
  - i. Massive Severe extremity bleeding
    - 1. Arterial spurting, venous flow, pooling
    - 2. Amputations
- c. Tourniquet Contraindications
  - i. Penetrations without massive severe bleeding
  - ii. Superficial lacerations
- d. Tourniquets
  - i. SOFFT-W
    - 1. COTCC approved and recommended
    - 2. Components
    - 3. Application steps
    - 4. Student application practice
  - ii. CAT
    - 1. COTCC approved and recommended
    - 2. Components
    - 3. Application steps
  - iii. RATS
    - 1. Not recommended
  - iv. SWAT-T
    - 1. Not recommended
  - v. Other manufacturers
- e. Tourniquet Preparation
  - i. Carry location
  - ii. Pre-sizing
  - iii. Folding and storage
- f. Tourniquet Application
  - i. Placement location
    - 1. Non-threat environment
      - a. 2-4" above wound, per national EMS protocols
    - 2. Threat environment

- a. High and tight on the extremity
- ii. Bleeding control
  - 1. Tighten until bleeding stops
  - 2. Second tourniquet can be used
- iii. Distal pulse elimination
  - 1. Distal pulse must be eliminated
- iv. Application speed
  - 1. ASAP, 30 second maximum
- v. Application pain
  - 1. Application will cause pain or discomfort, do not remove
- vi. Removal
  - 1. First responders shall not loosen or remove a placed tourniquet
- g. Tourniquet Quick Drills, threat environment
  - i. Self-application
    - 1. Arm
    - 2. Leg
  - ii. Partner-application
    - 1. Arm
    - 2. Leg

### **III. Tactical Emergency Casualty Care**

- a. Law enforcement primary directive
  - i. Preserve Life
- b. Law enforcement mission in emergencies with injuries
  - i. Plan A
    - 1. Secure and manage the scene
    - 2. EMS enters and treats injuries
  - ii. Plan B
    - 1. Secure and stabilize scene
    - 2. Neutralize threat
    - 3. Provide rapid stabilizing treatment of life-threatening injuries
    - 4. Evacuate victims to safety
- c. Response protocol evolution
  - i. Pre-1999 (Columbine HS)
    - 1. Patrol – Respond and contain
    - 2. SWAT – Enter and neutralize
    - 3. EMS – Victim triage, care, and transport
    - 4. Loss of life from delay of action and delay of care
  - ii. 1999-2011 (Active Shooter Response)

1. Patrol – Respond, enter, neutralize threat
  2. SWAT – Prolonged engagement, systematic searches
  3. EMS – Victim triage, care, and transport
  4. Loss of life from delay of care
- iii. 2011-Ongoing (TECC protocols)
1. Patrol – Aggregate team formation, enter, contact, neutralize threat, establish scene security, rapid stabilization of life-threatening injuries, expedient extrication of victims to safer area
  2. SWAT – Prolonged engagement, systematic searches
  3. EMS – Continued victim triage, care, and transport
- d. TECC Phases of Care
- i. Direct Threat
    1. Active or immediate nearby continuing threat
    2. Contact, identify, neutralize threat
    3. Critical injury self-aid
  - ii. Indirect Threat
    1. Static but not secure, threat may reappear
    2. Rapid victim critical injury care, MARCH protocol
    3. Be aware of threat return
  - iii. Evacuation Care
    1. Secure, safe scene
    2. Assist EMS in victim triage, transport, management care
- e. Tactical Action Plan
- i. THREAT
    1. Threat suppression
    2. Hemorrhage control
    3. Rapid Extrication to safety
    4. Assessment of life-threatening injuries
    5. Transport to definitive hospital care
- f. MARCH assessment and treatment protocol
- i. Massive hemorrhage
  - ii. Airway compromise
  - iii. Respiratory compromise
  - iv. Circulation compromise
  - v. Head injuries
  - vi. Traumatic hypothermia
- g. MARCH mnemonics
- i. Extremities are hoses, “Clamp the Hoses”
    1. Tourniquets to constrict major vessels

- ii. Junctions are teddy bears, “Stuff the Teddy Bears”
  - 1. Hemostatics packed into bleeding wounds
- iii. Airway is a snorkel, “Open the Snorkel”
  - 1. Ensure open and clear airway
- iv. Chest is a balloon, “Tape the Balloon”
  - 1. Occlusive chest seals for penetrating chest wounds
- v. Skull and Abdomen are bowls of Jello, “Cover the Jello”
  - 1. Moist, occlusive dressings for skull and abdominal wounds
- vi. If you “C” other bleeding, “Dress all Wounds”
  - 1. Pressure bandages
- vii. Disarm altered victims, “If victim is 4 of Spades, disarm”
- viii. Prevent traumatic hypothermia, “Keep Everything Warm”
  - 1. Emergency heat blanket
- h. Traumatic Shock
  - i. Cause of shock
    - 1. Oxygen delivery failure
      - a. Airway compromise
      - b. Respiratory compromise
      - c. Vascular compromise
  - ii. Biologic shock
  - iii. Anatomic shock
  - iv. Aerobic metabolism
  - v. Anaerobic metabolism
  - vi. Ischemic tolerance
    - 1. Brain, heart lungs – 4-6 minutes
    - 2. Liver, kidney, GI tract – 60-90 minutes
    - 3. Muscle, bone, skin – 4-6 hours
  - vii. Initial indicators
    - 1. Altered level of consciousness
    - 2. Weak or absent radial pulse
  - viii. Lethal Triad of Shock
    - 1. Acidosis
    - 2. Hypothermia
    - 3. Coagulopathy
- a. Treatment Goals
  - i. Stop death, correct O2 failure
  - ii. Manage victims and injuries

iii. Transport or transfer victims to advanced care

j. Lethal Clock

i. Massive hemorrhage - <1-5 minutes

ii. Airway – 4-6 minutes

iii. Respirations – 10-15 minutes

iv. Circulation – Progressive

v. Head, Hypothermia – Progressive

k. Injury Zones

i. Extremities

1. Arms, Legs

a. Tourniquet

ii. Junctional Areas

1. Neck, Shoulders, Axilla, Groin, Hips, Buttocks

a. Hemostatic agent

iii. Airway and Chest

1. Airway position, adjuncts, occlusive chest seals

iv. Head and Abdomen

1. Occlusive dressings

**IV. Patrol Trauma Kit**

a. Components

b. Access

c. Carry

**V. TECC History**

a. Invention of Tactical Combat Casualty Care (TCCC) by US Military

b. Evolution of TCCC to TECC, adapted for civilian environment

**VI. Direct Threat Care Phase**

a. Threat neutralization

i. Tactics

1. Cover fire

2. Suppression fire

3. Bound and move

b. Self-aid of massive hemorrhage

i. Tourniquet

c. Partner-aid of massive hemorrhage

i. Tourniquet

d. Expedient rescues

- e. Expedient moves to cover and safety

## VII. **Casualty Movement**

- a. Direct Threat Care Phase – to cover
  - i. One person drag
  - ii. Firefighter drag
  - iii. Two person drag
- b. Indirect Threat Care Phase – to safer area
  - i. Hawes carry
  - ii. Pack strap carry
  - iii. Seal Team 3 carry
  - iv. Fore-Aft carry
- c. Evacuation Care Phase – to definitive care
  - i. Seal Team 3 carry
  - ii. Fore-Aft Carry
  - iii. Improvised carry devices
- d. C-Spine considerations
  - i. Penetrating trauma
  - ii. Blunt trauma

## VIII. **Indirect Threat Care Phase**

- a. MARCH assessment
- b. Injury sweep pattern
  - i. Lower junctions/legs
  - ii. Upper junctions/arms
  - iii. Head/Face/Throat
  - iv. Chest
  - v. Abdomen
  - vi. Back

## IX. **Massive Hemorrhage**

- i. Tourniquets
  - 1. Indications
    - a. Massive, severe extremity bleeding
  - 2. Contraindications
    - a. Minor or superficial extremity bleeding
  - 3. Application
    - a. Proper placement

- i. Safe scene, 2-4" above wound
  - ii. Threat scene, high and tight
  - iii. Do not place over any joint
  - iv. Remove bulky items from underlying pockets
- 4. Management
  - a. Ensure distal pulse is eliminated
  - b. Ensure pulse does not return
  - c. Ensure tourniquet remains tight
- 5. Compartment syndrome
- 6. Improvisation
  - a. Suitable items for tourniquet improvisation
    - i. Web strap
    - ii. Web belt
    - iii. Clothing strips
  - b. Expedient windlasses
- ii. Hemostatic agents
  - 1. CA approved hemostatics
    - a. Quikclot Combat Gauze
    - b. Celox Rapid Gauze
  - 2. Indications
    - a. Massive junctional bleeding
    - b. Massive extremity bleeding when tourniquet is not available
    - c. Secondary control for extremity wounds previously treated with a tourniquet
  - 3. Contraindications
    - a. Do not apply to any cavity
      - i. Skull
      - ii. Face
      - iii. Chest
      - iv. Abdomen
  - 4. Application
    - a. Pack hemostatic deeply into the wound, making contact with the vascular compromise
    - b. Pack toward the heart
    - c. Pack the wound completely and tightly
    - d. Apply 3 minutes of direct pressure to packed wound
  - 5. Management
    - a. Ensure bleeding does not continue or restart



- b. Apply pressure dressing to secure packing
- 6. Improvisation
  - a. Standard gauze
  - b. Clothing
- iii. Pressure bandages
  - 1. Application
  - 2. Improvisation

## X. Trauma

- a. Definition
- b. Injury Factors
  - i. Energy
  - ii. Tissue density
  - iii. Contact area
  - iv. Cavitation
    - 1. Temporary
    - 2. Permanent
- c. Trauma types
  - i. Blunt force
    - 1. Compression, tear, shear
    - 2. Injury locations and examples
      - a. Head
      - b. Neck/Spine
      - c. Chest
      - d. Abdomen/Pelvis
      - e. Extremities
  - ii. Penetrating force
    - 1. Low, medium, high energy
    - 2. Factors
      - a. Profile
      - b. Tumble
      - c. Expansion
      - d. Fragmentation
    - 3. Injury locations and examples
      - a. Head/Neck
      - b. Chest
      - c. Abdomen
      - d. Junctional areas
      - e. Extremities

- iii. Blast force
  - 1. Components
    - a. Overpressure/Shock Front
    - b. Thermal event
    - c. Fragmentation
    - d. Shrapnel
  - 2. Injuries
    - a. Primary
    - b. Secondary
    - c. Tertiary
    - d. Quaternary
    - e. Quinary

#### **XI. Terrorism and Threats**

- a. Extremists
- b. Tactics
- c. Threats
- d. Potential injuries
- e. Case studies

#### **XII. Airway**

- a. Concepts
  - i. Open
  - ii. Clear
  - iii. Position
  - iv. Maintenance
- b. Interventions
  - i. Head-Tilt-Chin-Lift
  - ii. Jaw-Thrust
  - iii. Nasopharyngeal airways

#### **XIII. Respirations**

- a. Opioid and fentanyl exposure
  - i. Narcan application
    - 1. Indications
    - 2. Contraindications
- b. Chest penetrations
  - i. Occlusive chest seal application
    - 1. Indications
    - 2. Contraindications
    - 3. Application procedure

- ii. Management
  - 1. Chest venting, “burping”
  - 2. Victim position
  - 3. Assisted ventilations

**XIV. TECC Case studies**

- a. North Hollywood Shootout 1997
- b. Columbine HS – 1999
- c. London Subway bombings – 2005
- d. Aurora Theater Shooting – 2012
- e. Boston Marathon bombing – 2013
- f. San Bernardino Shooting – 2015
- g. Pulse Night Club Shooting – 2016
- h. Dallas Police Officer shootings – 2016
- a. Nice France truck attack – 2016
- j. Barcelona Spain truck attack – 2017
- k. Las Vegas shooting – 2017
- ax. Palmdale Highland HS shooting – 2018
- all. Thousand Oaks club shooting – 2018
- n. Sri Lanka bombing – 2019

**XV. Mass Casualty Care**

- a. Preparation
- b. Equipment

**XVI. Circulation**

- a. Wound care
  - i. Pressure bandage application
- b. Direct pressure
- c. CPR
  - i. Indications
  - ii. Contraindications

**XVII. Head Injury**

- a. Mental status assessment
  - i. Disarm altered victims
- b. Skull fracture
- c. Brain injury
- d. Interventions
  - i. Elevate head
  - ii. Assisted hyperventilation, 1 breath/3 seconds

**XVIII. Hypothermia**

- a. Body heat loss mechanisms
  - i. Radiation
  - ii. Convection
  - iii. Evaporation
  - iv. Conduction
  - v. Advection
- b. Interventions
  - i. Wrap victim in emergency heat blanket or other insulating wrap
  - ii. Insulate victim from the ground
  - iii. Remove wet clothing
  - iv. Move victim to warm place

**XIX. Evacuation Care Phase**

- a. Reassess for additional or missed injuries
- b. Evaluate all previous interventions
- c. Designate casualty collection point
- d. Consider transport alternatives
  - i. Scoop and run
  - ii. Rally with EMS
  - iii. Must provide stabilization of all life-threatening injuries prior to alternative transport

**XX. Everything Else**

- a. Skull fracture
- b. Scalp bleeding
- c. Eye injuries
- d. Neck injuries
- e. Blunt trauma chest injuries
- f. Blunt trauma abdominal injuries
- g. Blunt trauma pelvic injuries
- h. Extremity fractures, strains, sprains
- a. Back injuries

**XXI. Rapid Action Drills**

- a. Students will practice hands-on skills throughout the course, with surprise rapid action drills requiring skills performance
- b. Self-aid application
- c. Partner-aid application

**XXII. Scenarios**

- a. Students will be tested by demonstration of proper skills
  - i. Recognition of injury

- ii. Application of appropriate treatment
- iii. Reassessment of interventions
- b. Scenario 1 – Active School Shooter (video based scenario)
  - i. 4 officer response to an active shooter incident
    - 1. Respond to virtual threats
    - 2. Render self-aid and partner-aid to occurring injuries, following MARCH assessment during Direct Threat Care Phase
    - 3. Tourniquet application
    - 4. Hemostatic application
- c. Scenario 2 – Officer Down (trauma manikin props with moulage injuries, audio soundtrack)
  - i. Locate downed officer
  - ii. Assess downed officer following MARCH assessment
  - iii. Treat injuries
    - 1. Tourniquet application
    - 2. Hemostatic application
    - 3. Occlusive chest seals application
    - 4. Assess mental status, disarm altered officer
    - 5. Pressure bandage application
    - 6. Heat blanket application
- d. Scenario 3 – Mass Casualty Incident (trauma manikin props with moulage injuries, audio soundtrack)
  - i. Assess scene
  - ii. Triage multiple casualties following MARCH assessment
  - iii. Treat casualties following MARCH assessment
    - 1. Tourniquet application
    - 2. Hemostatic application
    - 3. Occlusive Chest Seal application
    - 4. Pressure bandage application
    - 5. Heat blanket application
  - iv. Identify casualty collection point
  - v. Make radio notification of status
    - 1. Scene
    - 2. Incident
    - 3. Number of injured
    - 4. Injury types
    - 5. Request additional resources
  - vi. Give transfer of care report to EMS
    - 1. Victim's injuries

2. Treatment provided
3. Victim's condition

**XXIII. Test**

- a. Written test, multiple choice assessment of gained knowledge

**XXIV. Safety Protocols**

- a. Safety will be monitored by instructors at all times
  - b. Live weapons are not permitted in class at any time
    - i. Weapons brief and check at beginning of class, and each return from breaks and lunch
  - c. All participants are assistant safety monitors
  - d. Emergency plan brief
    - i. Evacuation
    - ii. Injury or Illness
-