

Washington County EMS
Special Operations Division



Program Guidelines

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Washington County EMS Special Operations Division

INTRODUCTION

After the unprecedented events of September 11, 2001 the administrative staff of Washington County EMS went to work to find solutions to problems that were identified in this unfortunate turning event. Early in 2003 the department decided to make a commitment to the formation of a special operations division of the counties EMS department. Realizing funding shortfalls and other obstacles the department felt this concept could potentially be a long term plan. Plans, policies, and guidelines were put together and we consulted with numerous existing EMS Special Operations Teams over the past couple years and continue to gain insight from these organization even now. We are extremely gracious for several organizations who has helped guide us along the way in particular the Austin Travis County EMS SPECOPS Division.

The mission of the program is to have the ability to provide early (within 5 minutes of SPECOPS arrival) advanced life support care through a highly skilled paramedic in **any situation or circumstance** inside our response area. Recent studies have proved **that early advanced care** in these unusual situations drastically affects morbidity and mortality among injured patients.

It's important for support services such as local fire departments to realize that we do not function as a full technical rescue team but merely as a component of the rescue. Our specific component is entirely dedicated to accessing and taking care of the patient during the rescue phase. For this reason we will maintain the highest standards possible in reference to training, physical fitness, and education. The paramedics who serve as a member of our SPECOPS Team undergo rigorous physical fitness training and standards as you will see detailed later in this manual. Our standards will **equal or exceed the current NFPA Recommendations found in NFPA 1670 Ch. 2 or any other set standards** that are applicable.

In the infancy stage of our program we spent nearly two years training in two main areas: WMD / HAZMAT and Land Rescue (tech rescue) Operations (LRO). Due to the nature of event of 9-11 the WMD environment was felt to have the greatest risk. However, currently we have 6 divisions fully operational and deployable and one division (water rescue) that is considered a state wide response resource. They are Land Rescue Operations (**LRO**), Advanced Life Support Bike Team/ATV (**ALS-BP/ATV**), EMS Immunization Program (**EMS-IP**), Medical Rehab Operations (**MRO**), Tactical Emergency Medical Support Program (**TEMS**), and (**WRO**) Water Rescue Operations are all 100% operational and has been utilized to some degree during the last calendar year. The division has received training from State, Federal, and even local resources. Funding is obviously an issue however we will not sacrifice the potential risk

involved with sending an untrained paramedic into a risky situation. For this reason quality training is of the highest priority for the program.

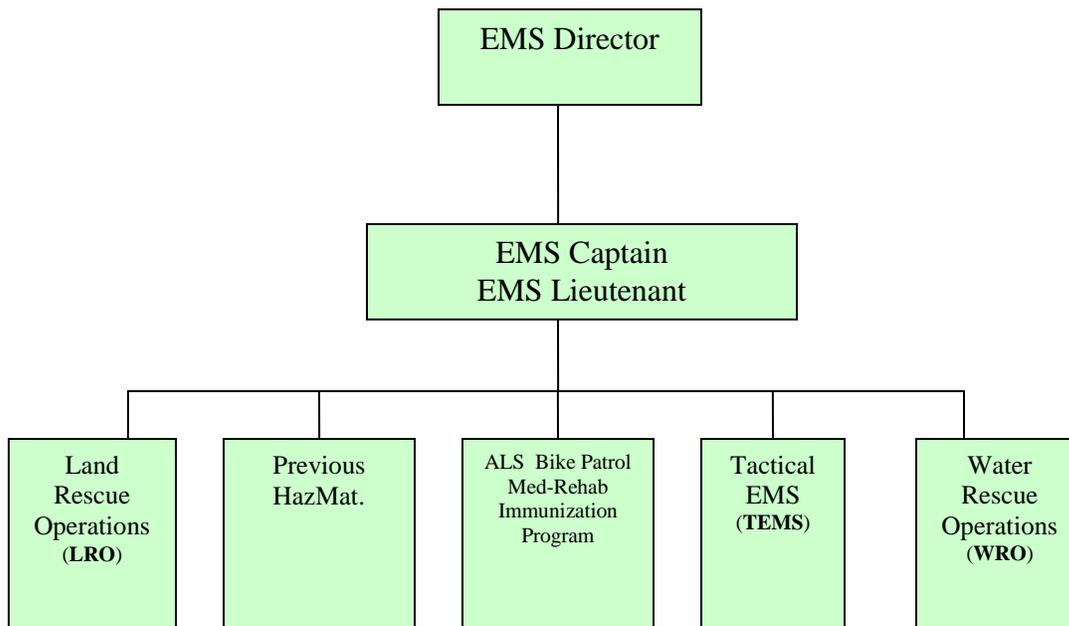
As events unfolded during the hurricanes (Katrina / Rita) we realized that the potential of the SOD program could have impacted our community even more than we first realized. Our Special Operations Division will be **defined and redefined** as the department changes to meet the needs of the community. We have recently assigned an EMS Lieutenant to assist the Director and EMS Captain in overseeing the division for supervisor and proper progression. For this very reason we will continue to update or add to this manual as needed. The department has also assigned 'specialist' within the division to assure proper progression and maintenance within the 6 major divisions of the SOD.

I would like to reiterate that the goal of this program is provide advanced life support care to any injured person ***within 5 minutes of an SOD Paramedic arriving to the scene as well as support any a-typical operation outside of the normal EMS system response.*** As you are aware even a simple extrication from a vehicle can take hours for a heavy rescue team to perform. If EMS were not involved in the operation very few **critical** patients would be extricated with a viable status. The methodology of the special operations program is no different than this. If it takes 45 minutes to retrieve a critical patient using a technical rescue team then most critical patients are deceased or at least have an increased morbidity percentage. The paramedics' involved in this program will have adequate training and equipment to gain access to these patients in these unusual situations and provide basic and most importantly advanced life support during the entire rescue operation. The principle of **far forward medicine** has shown drastic improvements survivability and morbidity in our recent wars in the Gulf. This is why every single component of the modern military has a medical support component attached to it.

The **Brenham Fire Department serves as the primary rescue department** for our county and is charged with managing the technical systems involved in the rescue we will work together with them to make this functional program a successful one. **Rescue is not a proprietary responsibility of any one agency.** It is a multi-discipline operation and requires the involvement of a variety of emergency response agencies to effectively and efficiently evacuate and care for a victim / patient.

COMMAND STRUCTURE

The Special Operations Division of Washington County EMS is a vital operation and the Director of EMS is directly involved in day to day operations of the program. An EMS Captain as well as an EMS Lieutenant has been assigned to assist in the development and every EMS Lieutenant must fully understand and be able to deploy or assist in the special operations division. The EMS Captain and Lieutenant are responsible for coordination, training, and development of the program. However, they keep the EMS Director informed on any deployments or potential concerns of the program. As with any major incident the Special Operations Division may find themselves working under the unified command structure but will report directly to 'medical command' during most instances.



Special Operations Program – Member Standards

The special operations division has been changed over the years to fit the needs of each individual division and due to the acknowledgment that not all “special operations” required physical strength and stamina. For this reason we will further explain what areas of the division require standard testing for acceptance into the Special Operation Program.

DIVISION	OBSTACLE	1.5/3.0
ALS-BP		
EMS-IP		
MRP		
LRO	X	X
TEMS	X	X
WRO	X	X

The physical stamina of a ‘rescuer attendant’ is of utmost importance during the rescue. For this reason the standards set by the program will be significant and exceed any published standard recommendations by NFPA or equivalent standards publications. Listed below you will see a detailed account of both the entry standards for the SOD as a whole, as well as the continuing physical fitness standards that the team must maintain. Each team member may be asked at any time to prove fitness standards by demonstrating any or all of the following tasks.

Below you will see a brief description of each event. It’s important to review the instructions to assure your understanding of the events. Remember you are not competing against another individual. The candidate is competing against time. If the candidate does not perform all events in under the allowed time frame the candidate must retest on the entire process on a different day. The candidate can not simply retest a certain event in attempts to improve the overall time.

You must complete each individual event without compromising safety.

The candidate must complete the **3 mile hike through rough terrain with 28lbs pack in less than 45 minutes.** The choice of hike or jog is given to the candidates for the simple reason that the event is not intended to measure muscle strengths but cardiovascular stamina is what is being tested. For that reason we allow the candidate to choose. There is not exact set limit on the jog. However, there is a **cumulative time limit for the combined 2 events** (Obstacle & 1.5 mile **or** 3 mile hike). If the candidate/member chooses the 1.5 mile jog then the total maximum time allowed is **22 minutes**. If the

candidate/member chooses the 3 mile hike then the total maximum time allowed is **50 minutes**.

Obstacle Course

Event #1

¼ mile jog: Each member or candidate will run ¼ miles. This event can be performed in shorts and running shoes.

Event #2

Obstacle Course 50 yrd Victim drag: Each member will, using the SKED or tarp, will drag a simulated victim (165lbs) 50 yards (simulating escaping to a safe area).

Obstacle Course Event #3

Stair Climb with Packs: Each team member will dawn a Weighted Pack (trauma bag or bag equivalent to 28lbs). The member/candidate will carry the weight to the top of the window level of the tower and then return to the bottom. Candidate/Member will complete 3 climbs. Time will stop upon returning to the bottom of the stairs after the third climb.

NOTE: In addition to the above Special Operation Division physical standards, each division will also have its own physical standards that must be met before acceptance onto that specific division. Both SOD and Division PT standards must be tested yearly. Each division will have a minimum of 4 trainings per year in which the team member is required to make 75% of.

In addition to these physical standards other important standards must also be met:

- Candidate must have no disciplinary actions currently be held against him / her.
- Have scored at least an 80% on his / her most recent ALS protocol exam or any clinical competency assessments.
- Must maintain physical, educational, moral standards throughout membership.
- **Must attend 1101 SOD Class didactic portion of “Far Forward Medicine”**

The responsibility of the special operations training and coordinating lies with the EMS Lieutenant, Health and Wellness Coordinator, and the division specialist overseeing the division.

Standards:

Each "Hazardous" SOD division will require you to participate in the following:

- FTX
 - "Field Training Exercises" will be performed for LRO, BRT, and TEMS divisions quarterly (Static Boat Operators who are not included into the Dynamic team will be required to have 8hrs of Static Water training per year). These dates will be setup by the division specialist and posted. For TEMS, an annual officer down drill should be included in the FTX. Typically, for divisions requiring hazmat certification, the annual 8 hr refresher can serve as the FTX for their HazMat Training. It is the responsibility of SOD Member to make sure they attend these FTX's, not the responsibility of the division to make the FTX fit you.

- Core Competency Testing:
 - These will be completed by use of each division's position task book (PTB).

Failure to Meet Physical Standards:

- For initial candidates trying out for SOD that do not meet the physical requirement, the candidate can attempt the standards again at a time when they feel they are better prepared. Assistance can be obtained through the Health and Wellness Coordinator.
- For current members of the SOD team that fail at re-qualifying their yearly physical standards, there will be a 45 day probation period placed on the member during which time they can gain assistance with the Health and Wellness coordinator in attempts to better their times.
 - During this time the team member will not be able to deploy with the team during official call outs or receive a stipend check. The member's ability to continue training with the division is up to the division specialist. .
 - After the 45 day probation period is completed, the member will be retested. If the member passes then the member can remain a member of SOD. If the member fails, the member must be removed from the SOD team, are non deployable, and no longer eligible for stipend incentive pay, until the member can pass the SOD entry requirements.

Washington County EMS Special Operations Division

Division Haz Mat Requirement

This will be effective for each SOD division requiring patient rescue. It's important to clarify that the WCEMS Special Operation Division is not a "Hazmat Team" by any stretch of the imagination. The special operations rescue paramedics will maintain a minimum knowledge and competency of hazmat technician level responder. It is not the goal or intent of the team to work in the hot zone of any incident for any period of time. However, it may be required at times when assisting extrication or carrying for injured patients to be exposed to hazardous material. For this reason all NFPA minimum standards and OSHA guidelines will be a minimum standard for the division.

Equipment that will be maintained by the SOD for HazMat purposes are:

- APR Mask
- APR Cartridges
- Level C (painter) Suit
- Hasty Decon System

****NOTE:** Each Haz Mat Technician that is assigned to a SOD team should maintain their medical knowledge of HazMat situations in order to serve as a liaison for other departments.

Washington County EMS Special Operations Land Rescue Operations (LRO)

LRO excludes WMD and Hazmat from these operational procedures.

The provision of rescue medicine in remote areas is a dynamic and challenging process. The information included in this document addresses those procedures, which are routinely employed by the Washington County EMS Operations Division in the performance of their rescue responses. This document **provides guidance** for land rescue operations under most circumstances but is **not a substitute for sound judgment**.

No document is able to dictate how to approach every rescue call. Each individual situation presents rescuers with a large number of variables that need to be considered before attempting a rescue. As such, the decision to use or not use a particular technique in the course of performing a rescue is left to the discretion of the rescuers involved.

Operational Goal:

- The goal of the Washington County EMS Special Operations paramedic is to provide the highest quality medical rescue service to patients in extraordinary situations and challenging environments, regardless of the circumstances.
 - The primary role of the rescue paramedic will be rapid deployment (normally within 5 minutes of **arriving on-scene**) and begin immediate Advanced Life Support care to the injured victims

Special Operations Rescue Paramedic Pre-requisite:

- Completion of the Washington County EMS SOD division entry requirements.
- Recommendation from the Division Specialist, SOD Lt, or EMS Director.

Rescue Rigger Qualifications:

- Completion of WCEMS SPECOPS Orientation training program by the Division Specialist.
- Maintain all P.T. standards.
- Successful Completion of Rescue Clearance To Practice (RCTP) evaluations.
- Competent in Knots, Anchors, and MA Systems

- Operational level or above for High Angle Rope Rescue knowledge and competency as outlined by the National Fire Protection Association (NFPA) 1670 and 1006 –
- Technician level knowledge and competency as outlined by National Fire Protection Association (NFPA) 1670 and 1006 –
 - Rope
 - Search & Rescue

Rescue Paramedic Qualifications:

- All of the above qualifications for Rescue Rigger plus:
 - Successful completion of Rescuer Rappel, Rescuer Pick-off, and Ascend/Changeover at 25' and 38'.*
 - Must be a minimum of P1 Paramedic
 - Must Have Haz Mat Technician and maintained through 8 hr refresher training yearly.

****NOTE:*** *Other course work or certifications may be substituted based on course content. The EMS Director shall approve these on an individual basis and competency testing shall be performed by the divisional specialist.*

Field Rescue Exercises:

- All rescue field training exercises will be conducted with a special operations team leader present and supervisor notified. An EMS Lieutenant, the EMS Director, or EMS Captain will also be present on any 'live' field exercises.
- An Incident Action Plan (IAP) should be completed for all field training scenarios prior to the start of the training session. The action plan is a guide to serve for the team if any unfortunate event should occur during the exercise. The IAP should be given to the SPECOPS Lieutenant, EMS Director, or EMS Captain prior to the exercise.
- At the conclusion of all training exercise the divisional specialist will submit and after action review (AAR) form to the SOD Lt, EMS Director and all participating SOD members.

Pre-Planning for Rescues:

Equipment and Readiness:

- Land Rescue Operation (LRO) Paramedics will be issued individual (rapid access) gear and must become familiar with the divisions rigging pack, medical pack and assortment of other rescue devices.
- Special Operations Rescue Paramedics are the first personnel recalled to duty in the event of a large Mass Casualty Incident (MCI), Weapon of Mass Destruction (WMD) event or large scale weather event that can potentially impact the systems response capability. For this reason at certain times personnel will be issued take-home equipment including PPE. The SPECOPS Paramedics should maintain their gear and PPE in a serviceable condition at all times. Any issue equipment that is not ready for immediate use should be reported to the appropriate Special Operations Division Specialist for repair or replacement.
- The primary focus of Special Operations Division Paramedics is threefold: first, **access and assess** the patient; two, prioritize and communicate with the rescue support team; and third, employ appropriate medical treatment in the rescue environment. As such, each team member shall be thoroughly familiar with the rescue medical pack, rescue rigging pack, and **all** rescue/recovery devices.
 - Assortment of Rescue Litters (Stokes)
 - SKED Stretchers
 - LSP Halfback (Miller)
 - Tripods
 - Etc...

Regional Familiarity:

- Each team member will be responsible for awareness of “trouble spots” within our 700 sq./mi response area.
- Each rescuer will know common access and egress points into the Brazos River area near Hwy 290 and Hwy 105, and have a working familiarity of the Lake Somerville Parks (especially Yegua ATV area)
- Periodic on-duty exercises will be conducted to confirm each rescuer’s readiness to respond and familiarity with his or her response area.

On-Duty Training:

***NOTE:** Continuing education and scenario based training are the cornerstones of professional development in rescue personnel. WCEMS Special Operations Paramedics should strive to remain current in their knowledge and skills of land rescue operations.

- Although all Special Operations personnel are required to attend rescue training, not every aspect of each rescue discipline can or will be covered annually. In addition, failure to routinely practice and become sufficiently familiar with the available rescue equipment may result in a false level of confidence for the rescuer.
- It is the **responsibility of each individual team member** to ensure that he/she maintains proficient in the LRO arena.

Rescue Clearance To Practice (RCTP):

- Before a Rescue Paramedic can operate in an independent status he/she must complete the Rescue Orientation Training Program, and have the recommendation of the assigned Command Staff overseeing the SPECOPS Division.

Safety:

- Of primary importance on all rescue scenes is the safety of the rescuers and bystanders.
- All Personal Protective Equipment (PPE) shall be safety checked by the rescuer and the rescuer's partner prior to the beginning of the rescue evolution.
- No rescuer shall be deployed without a designated plan for self-rescue and assisted rescue.
- All rescue systems shall be thoroughly inspected by the Head Rigger and Safety Officer prior to their use.
- Safety Officer selection should be based upon that individual's technical background as well as his or her ability to maintain oversight of multiple operations concurrently. The safety officer may be a normal MICU crew member (non SPECOPS) if absolutely necessary however its always best to utilize an SPECOPS Division member or the primary rescue departments safety officer (i.e. Brenham Fire Department)

Scene Size-up:

- Each technical rescue, whether simple or complex, shall first require an adequate size-up to determine what resources need to be utilized. Proper size-up should allow for multiple contingencies should the rescue evolution change after the initial rescue effort has begun.
- Listed below are the essential elements that shall be considered prior to initiating any rescue effort.
 - Location and number of victim(s)
 - Ability to communicate with victim(s)
 - Best access- walk down, walk down with hand line, walk down with prussik self belay, rappel, lowered via lowering system
 - Slope of terrain
 - Stability and type of ground

- Distance to victim(s)
- Alternate access routes
- Need for edge protection
- Objective hazards- rock fall, environmental
- Working room for rope systems and belays
- Egress- continue down with victim(s) or raise up

Accountability:

- The rescue scene by its very nature lends itself to increasing complexity due to the number of unknowns that are presented. What at first appears to be a seemingly simple litter evacuation can quickly evolve into a multi-agency coordination nightmare. As such, keeping track of all resources involved in such incidents can also become increasingly cumbersome. Without the adequate organization and tracking of personnel and equipment, the resulting interaction with more than a single response agency can be catastrophic. In the best of these circumstances, equipment or personnel may end up merely being misallocated. In the worst, rescuers may suffer personal, potentially life-threatening injuries. In order to reduce our exposure to these pitfalls, some system of accountability should be set in place that keeps track of our resource management.
- Within the Washington County EMS Departments' personnel accountability can be accomplished by having the Medical Command or his/her designee collect the system identification badges and verify the roles of those entering or exiting the rescue scene. Consequently, upon arrival at a technical rescue scene it is imperative that **all** individuals check in with Medical Command prior to beginning any portion of the evolution.
- In addition, noting the resource flow into and out of the rescue scene allows us to more easily track equipment location as well as to recognize the need to request additional equipment. Simple steps such as these afford us the opportunity to minimize the potential for personnel injury and equipment loss, two of the many variables on the rescue scene that remain within our control.

***NOTE:** Documentation should include the names, unit assignment, time in and time out for all personnel operating on the rescue.

Post Incident Debriefing:

- Whenever possible, a brief informal debriefing should immediately follow any LRO event. During this meeting, all personnel involved in the incident should be gathered together and invited to express any questions, concerns or observations made regarding any part of the rescue evolution.

- A brief review of the events should be conducted rather than an in depth discussion of rescue principle and philosophy. Personnel should be encouraged to bring up questions regarding safety concerns as well as provide compliments for specific actions or personnel.
- If issues arise during this debriefing which are cause for concern and are believed to merit greater scrutiny, a formal rescue critique should be scheduled for a later time with the entire rescue system (including the primary rescue department – Brenham Fire Department).

***NOTE:** In extraordinary or unusual rescue operations it is often beneficial for all field personnel to receive a brief report of “lessons learned” from the incident. The EMS Medical Command, unless working under unified command officer, should forward the pertinent information to the Special Operations Lieutenant for distribution to the field and command staff.

Performance Measures:

- It is an expectation that all actions performed and all equipment utilized during a Technical Rescue will be thoroughly documented in the Equipment Log. **This form is to be completed no later than the end of the shift during which the LRO occurred.**
- A SPECOPS After Action Report may be filled out by any SPECOPS member who was on scene at the incident. The SPECOPS AAR can simply be emailed to the division specialist and EMS Director unless computer related problems are noted. In these rare occasions a hardcopy should be utilized and completed. The primary purpose of the report is to detail the actual events of the made by the resuce paramedics as well as equipment maintenance and safety. This report will also require an accompanying CAD printout for proper submission, if one is available.
- If specific maneuvers were performed during the course of the Technical Rescue (i.e. rappelling, 4:1 haul system utilized) they should be included in the narrative portion of the AAR.
- Any equipment issues that arise as a result of a rescue operation (i.e. lost or damaged equipment, equipment failure, or lack of appropriate equipment) should be reported to the Special Operations Division Specialist as soon as possible.

LRO Response:

Washington County EMS will respond a primary MICU ambulance initially to any response. As the need for Specialized training or equipment is identified the initially responding crew will request the assistance of the Special Operations Division by notifying communications of the need. Normally this will result in a simultaneous dispatch of the Brenham Fire Department who is the primary rescue department and is responsible for managing the application of the rescue technologies. Due to the Brenham Fire Department managing the technical

systems of the rescue on most LRO's it may be applicable for a single member of the special operations division to respond. The on call Rescue Paramedic will determine if other resources from the division is required.

Position Statement:

- Rescue is not a proprietary responsibility of any one agency. It is a multi-discipline operation and requires the involvement of a variety of emergency response agencies to effectively and efficiently evacuate and care for a victim / patient.
- Because of the dynamics of the rescue process, a well-integrated team approach using the national model for "Incident Management" is essential to a successful outcome for all participants.
- Rescue Calls include any incident in which the principal, uncontrolled problem is one or more people trapped by any means other than a criminal act such as hostage-taking. Rescue Calls include vehicle extrications, technical rescues (high-angle, trench, structural collapse) and wilderness rescues.
- The Command group should decide based upon many factors (patient condition, access/extraction times, hazards etc) to implement one of the following strategies:
 1. Get the rescue paramedic to the patient or
 2. Get the patient to the rescue paramedicThis is difficult to define in a guideline but should be implemented on what is in the patients best interest.
- The initial focus of the rescue paramedic will be locating and accessing the patient, determining patient priorities of the rescue, the required medical treatment during rescue, the preferred evacuation methodology (i.e. backboard, stokes, etc.), providing patient protection throughout the operation and communicating this information to EMS Command.
- EMS Command will communicate these priorities to the Unified Command group and adjust them accordingly, giving due consideration to the input and capabilities of the on scene support agency. EMS Command, in agreement with the Unified Command group, will then designate the appropriate evacuation method for the patient.
- Fire Command is charged with providing assistance in getting EMS to the patient and managing the application of their rescue technologies according to patient priorities and medical evacuation needs. If a preferred evacuation methodology cannot be implemented, Fire and EMS should confer and select an alternative action.
- Air rescue operations will be managed directly by EMS Command in consultation with the Unified Command group.

Calls outside of Washington County / Out-of-system Responses:

- WCEMS may respond to a mutual aid request from any public safety agency or other appropriate authority from a jurisdiction in any County adjacent to Washington County. The SPECOPS Division is no different and may abide by normal mutual aid agreements.
- BFD will provide mutual aid rescue assistance outside of the City of Brenham or to any adjacent county upon request from WCEMS. Due to the uniqueness of the SPECOPS Division and the obvious amount of comfort of working with Brenham Fire Dept. It may be necessary and should be considered if the SPECOPS Division of WCEMS is utilized outside of our response area
- The WCEMS rescue paramedic will set the initial patient access, treatment and rescue priorities and communicate them to EMS Command, again giving due consideration to the input and capabilities of the on scene support agency.
- The on-scene EMS Command will communicate these priorities to Incident Command, if one has been established. EMS Command should communicate patient priorities throughout the rescue to Incident Command and designate the appropriate evacuation method for the patient.
-

Low Angle Rescue:

- Commonly known as “slope evacuations”, a low angle rescue operation shall be defined as an evacuation that does not poses the steep angle required for the evacuation device (i.e. stokes litter, SKED) to hang from or be solely supported by a rope system. Common locations for such evacuations are flood control channels and creek/river banks. While the litter tenders support the majority of the weight of the evacuation device, a rope system is still required to move the victim and rescuers up or down the slope.
- The dividing line between low and high angle operations is not precise and must take into account factors such as weather, footing and manpower. The generally accepted guideline is considered to be a slope approximately equal to or less than 60°.
- The system required for low angle rescue operations will be dependent upon the angle of the slope, the number of personnel available to haul and the footing available to the litter tenders. **Consider the following:**
 - If the angle or footing of the slope is such that the load (litter and tenders) must be pulled by the haul line, a mechanical advantage system should be rigged.
 - If the haul line is not needed to pull the load up the slope but is to be utilized as safety in the event that the tenders slip, a standard belay should be rigged.
 - For a downhill slope evacuation, a standard belay should be utilized. For additional information on belaying techniques, refer to the materials listed in Appendix B.

- Patient packaging for low angle rescue operations shall be the same, whether evacuation is to proceed up or down the slope. Using the stokes litter, the patient shall be secured via the standard torso rigging. **The patient shall also be secured to prevent movement towards the foot of the litter. Using the SKED litter, the standard securing method shall be employed to both secure the torso and prevent victim movement toward the foot of the litter. In both instances, rigging to prevent patient movement toward the head of the litter is not needed.**
- Facing uphill, the litter tenders will raise the litter by simultaneously leaning back on their carrying straps while lifting the litter. The litter tenders shall then proceed backward down the slope as they would during a rappel, or forward (upslope) to the designated transfer point.
- No additional safety or belay line shall be required.
- No additional safety line or harness shall be required for the patient.
- Six (6) litter tenders should be attached directly to the litter, the lead rescue paramedic secured at the head end. For attachment purposes, a webbing loop or a pick-off strap shall be used by each tender. Leaning back, the tenders will be able to use their weight to assist in lifting the patient.

***NOTE:** In most circumstances, six (6) litter tenders should be utilized for a low angle rescue operation. However, as the angle of the slope increases, more of the load will be suspended by the haul line, resulting in the need for fewer litter tenders. Additionally, as the angle of the slope increases there is less room alongside the litter for all of the litter tenders.

High Angle Rescue:

- For purposes of comparison, a high angle rescue operation shall be defined as an evolution that, due to the severity of the incline of the terrain, requires the evacuation device to hang from and be solely supported by a rope system. In contrast to a low angle rescue operation, the litter tender(s) are suspended entirely by the attached rope system as well.
- If manpower allows, the Command personnel should delegate the roles of Safety Officer and Head Rigger. It is then the responsibility of the Safety Officer, or in his absence the appropriate Command Officer, to determine scene safety. This having been established, no portion of the operation shall commence prior to the inspection and approval of the Safety Officer.
- Throughout the performance of a high angle evolution, keep in mind the following:
 - The Safety Officer shall be responsible for the safety check of the Primary Medic's PPE and his or her anchor prior to that medic's deployment.
 - The Primary Medic shall deploy carrying the field medical kit (Medical Rescue Pack). Additionally, a backup retrieval plan for the medic shall be decided prior to the medic's deployment (a way out).
 - A specific Operations area shall be clearly defined and secured prior to the commencement of any rescue activity.
 - The method of evacuation of the patient should take into account the patient's current condition and stability as well as the type of

terrain and climate conditions. Pre-planning prior to commencement of patient evacuation (i.e. know what will happen next if the patient is lowered) should be communicated to all field personnel.

- Consideration should first be given to lowering the patient. This may involve a simple pick-off maneuver, horizontal or vertical litter lowering or, only as a last resort, an unassisted victim lowering.
- If lowering is not an option due to terrain or patient care considerations, a haul system may be used. This shall include a safety belay line in addition to the main line and mechanical advantage system.
- It is the goal of WCEMS Special Operations Division to have a qualified Rescue Paramedic attending to the patient at all times throughout the rescue operation. As such, a qualified Rescue Paramedic shall remain with the patient unless safety considerations or size limitations prohibit this. Ideally, the Primary Paramedic should maintain patient care continuity throughout the entire operation rather than passing patient care responsibility to another.
- Patient packaging for evacuation shall take into account the following:
 - Patients packaged in the SKED or stokes litters shall have a safety belay line attached directly to some manner of victim harness.
 - Horizontally packaged patients shall have an “emesis line” included in their rigging.
 - Horizontal patient packaging shall include patient rigging to prevent movement towards the head end, foot end and top side of the litter.
 - Vertical patient packaging shall include patient rigging to prevent movement towards the foot end and top side of the litter.

Confined Space Rescue Operations:

- When required or as applicable, all rescuers associated with the Washington County EMS Special Operations Division will adhere to the principles outlined in the Occupational Safety and Health Administration (OSHA) Permit-Required Confined Spaces Standard (29 CFR 1910.146).
- Rescuer safety is of primary importance and should dictate the pace and direction of the incident. The following points should be considered when preparing for and performing any confined space rescue:
 - Air quality of the confined space shall be the primary concern during scene size-up. As such, air quality determination shall be

made by qualified personnel prior to **any** entry into a confined space, whether natural or industrial.

- If the air quality of a confined space is in question or determined to directly present a hazard to the rescuer, a self-contained breathing apparatus (SCBA) will be worn by all who make entry. Additionally, ventilation of such an environment will be performed if deemed safe and appropriate.
- Rescue personnel who make entry into a confined space shall be required to wear a full-body (Class III) harness. Additionally, an emergency retrieval line shall be attached to each rescuer who enters a confined space unless its attachment hinders or endangers the rescuer. This will allow for emergency retrieval should the rescuer become injured or otherwise incapacitated and not be able to exit the confined space unassisted. It is the responsibility of the Safety Officer to ascertain that all rescue personnel making entry have these elements in place.
- Patient packaging for confined space evacuation parallels that for high angle rescue operations. Refer to the High Angle Rescue standards for guidance in appropriate patient packaging methods.
- A method of communication shall be established prior to entry into **any** confined space. This may be by radio, landline or alternative signaling methods (i.e. predetermined signals using tugs on a cord). Whenever possible, a backup system of communication should be in place.

Appendix A

WCEMS Special Operations Division Rescue Rigging Pack

- Class II Seat Harness
 - Applicable chest harness must be available on site which enables Class II seat harness to be Class III full harness.
- Land Rescue Operations Helmet
- Goggles (eye protection)*
- Prussik Loops (02 ea) emergency ascending
- Aluminum Locking Carabiners (04 ea)
- Figure Eight Descender
- Aluminum Non-locking Carabiners (02 ea)
- 1" Tubular Nylon Webbing (02 ea x 20') - minimum
- Gloves-
- Whistle*
- Knife*
- Light source x2
- SKED – complete with ropes, carabiners, etc...
- Pulley system (1 minimum)

- Anchor Plate
- 150ft ½” static pro series rope (2 minimum)

* - personal equipment / not issued by WCEMS

** - The SPECOPS Rigging Pack is housed in the SQUAD 1 .

WCEMS Special Operations Division Medical Rescue Pack

- Rapid Intravenous Pack
- Multi-trauma dressings
- Assortment of BLS Oxygen delivery devices
- Advanced Airway Equipment
 - Including Intubation, Combitube, & Surgical equipment
- Hemodynamic monitor equipment
- Tourniquets
- Pain management Pharmaceuticals
- Quick Clot
- Cervical collars

*Appropriate monitoring equipment will be made available by the initial responding crew or the medical command staff. The equipment listed above is a overview not a detailed list and the MRP – medical rescue pack can be adjusted as needed. The medical rescue pack will be small and lightweight.

Appendix B

Reference Materials For Land Rescue Operations

On Rope: North American Vertical Rope Techniques, by Bruce Smith and Allen Padgett, National Speleological Society, new edition, 1996.

Engineering Practical Rope Rescue Systems, by Michael G. Brown, Delmar, 2000.

CMC Rope Rescue, edited by James A. Frank, CMC Rescue Inc., 1998.

Swiftwater Rescue: A Manual for the Rescue Professional, by Slim Ray, CFS Press, 1997.

Confined Space and Structural Rope Rescue, by Michael Roop, Thomas Vines, and Richard Wright, Mosby-Year Book, 1998.

High Angle Rescue Techniques. 2nd Edition, by Tom Vines and Steve Hudson, Mosby – Year Book, 1999

First Due Trench Rescue, by James B. Gargan, Mosby Lifeline, 1996

Wilderness Medicine 3rd Edition, by Paul S. Auerbach, Mosby – Yearbook, 1995.

Mountaineering, The Freedom of the Hills, by Don Graydon and Kurt Hanson, The Mountaineers, 1999

Rescue 3 International Swiftwater Technician Manual, by Jim Segerstrom and Barry Edwards, Rescue 3 International, 1997.

Competency Assessment Lesson Plan

Topic: Ropes, Knots, and Anchors

Time Line: 4 hour

Materials: PPE
Individual knot cords
Rescue equipment
White board
Animated (CD) instructional guide

References:

Objectives: **This course will also serve as the supplement SOG's for the LRO Division.**

At the conclusion of this ca-lesson, the participant will:

- Have basic knowledge of the rescue knots and rigging techniques used in Washington County LRO field operations
- Know the tensile strength ratings and safe working load (SWL) calculations for ropes and webbing utilized
- Demonstrate the ability to tie the following knots and understand their general application(s):
 - Square knot
 - Figure 8
 - Figure 8 on a bite
 - Figure 8 follow through
 - Double Fishermans
 - Prussik Hitch
 - Munter Hitch
 - Clove Hitch
 - Water knot
 - Butterfly
 - Bowline
- Demonstrate the ability to rig a "hasty harness" on a patient or rescuer
- Demonstrate the ability to rig the following anchor systems
 - No knot anchor
 - Webbing wrap (3 pull 2)

PPE Requirements:

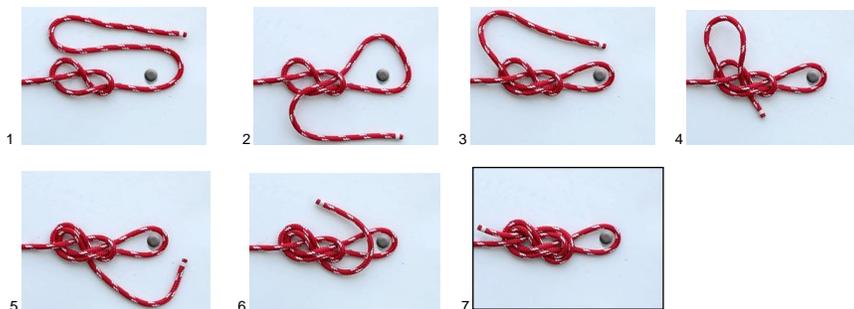
All LRO Paramedics should wear appropriate clothing for objectives. Typically long pants, boots and shirt are required. LRO Paramedics should wear helmets, gloves, and appropriate harness to meet objectives.

Knots

- Square Knot: WCEMS will utilize this knot to tie off a webbing used “hasty harness”. The square knot should be finished so that the tails are on the same side (top or bottom) of the knot. IF the tails are opposed the knot will not bear any weight.



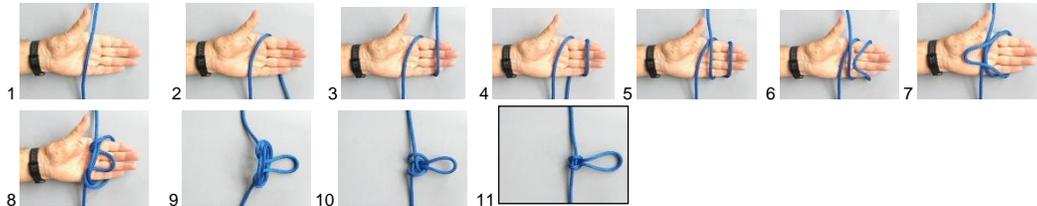
- Figure Eight Knot: The foundation knot for the special operations program at WCEMS. This is the foundation for the family of 8 knots. Do NOT confuse this knot with the overhand knot. The Figure 8 knot holds approximately 80% of the rope's strength.
 - Figure 8 Follow Through (tracer): Used to form a secure loop around a fixed object. Most off applied to anchoring quick rappel lines, or anchors on top of structures when carabiners are in short supply.



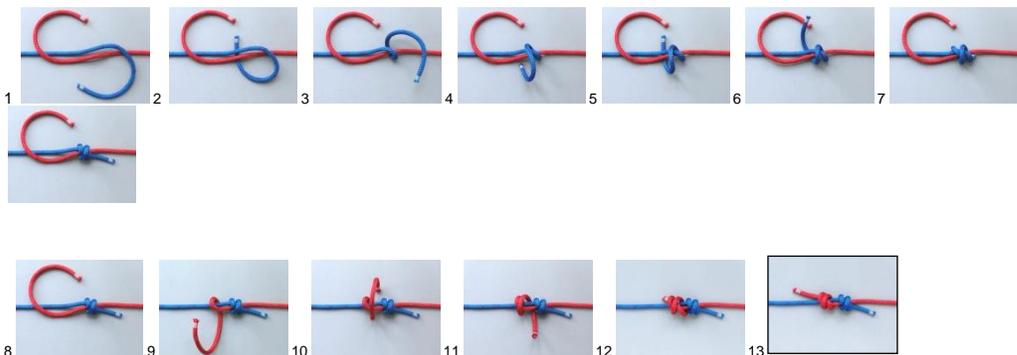
- **Figure 8 on a bight:** Used to form a secure loop in the end of a rope. Do not confuse this knot with an overhand on a bight. This loop is the primary knot for LRO Division Paramedic to tie into their harness and to anchor using no knot anchor systems.



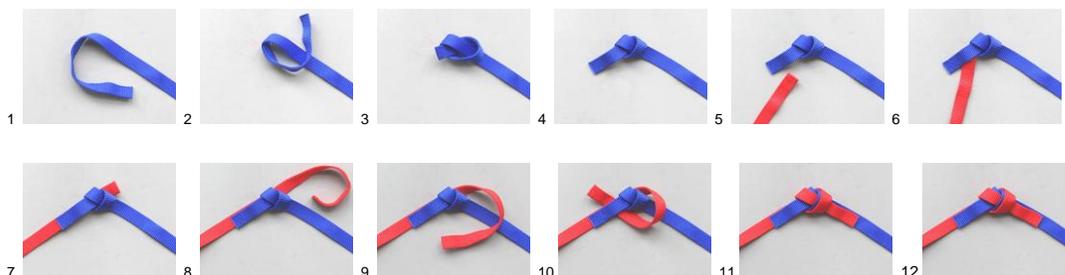
- **Butterfly Knot:** The butterfly knot will be the knot of choice for the LRO Division when tying a midline knot for load purposes. This knot is preferred due to its bi-directional capability – meaning when tied properly the butterfly knot can be loaded and pulled in either direction without adversely affecting the integrity of the knot.



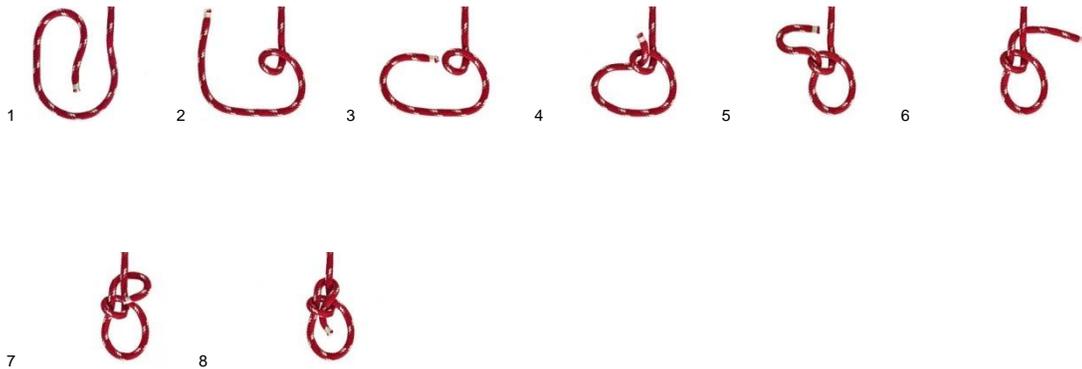
- **Double (or Triple) Fishermans' Knot:** Used to form a secure continuous loop in a rope or cordage. It will primarily be used by the LRO Division to make prussik loops. It can be used for tie off purposes as well if needed. Just remember when loaded it is a very difficult knot to untie.



- **Water Knot:** Used for joining two ends of webbing together. Only use this knot with Webbing.



- **Bowline:** The bowline is used to tie a loop in the rope that will not slip or decrease in size when placed under a load. Typically used to connect to a patient extraction device such as a SKED during but has multiple uses. The Bowline is an easier to untie knot that has been under a load than a figure 8. It holds approximately 60% of the ropes strength.



- **Prussik Hitch:** A friction knot that is essential to the LRO Paramedic functioning in this austere environment. It will be used primarily as an emergency ascending technique as well as progress capture device. Remember due to the heavy friction when utilized during heavy loads the prussik cords should be inspected after each use and discarded if damaged.



Special Operations Rescue Paramedic

Land Rescue Operations - Competency Guide (LRO)

5-09

“Hasty” Harness

- The Hasty Webbing Harness enables a temporary lifting harness seat to be constructed from a piece of webbing strapping. This harness should be utilized on patients needing extracted that may not be immobilized on a stretcher, backboard, etc... It can also be utilized for a quick rescuer harness should there be a need.
- Utilize approximately 20’ of webbing.



Anchor Systems

- No Knot Anchor Technique



- Wrap 3 – Pull 2:



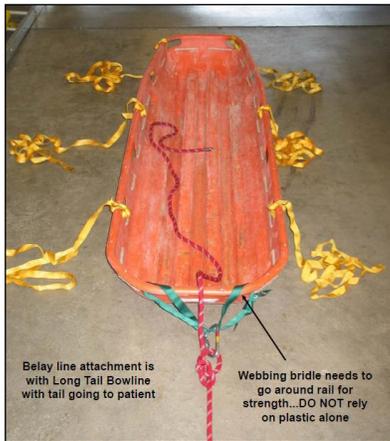
Special Operations Rescue Paramedic

Land Rescue Operations - Competency Guide (LRO)

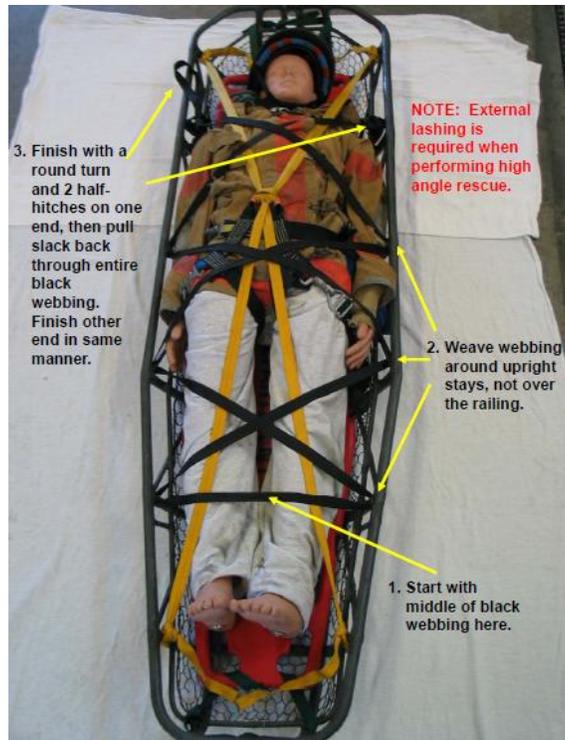
5-09

Patient Packaging: Proper patient packaging is of the highest priority for the LRO – Paramedics. The patient must be properly safeguarded against further injury either from the rescue itself or improper movement and have the ability to be treated during rescue phases. It is the LRO – Paramedics responsibility to ensure these goals are met.

Low Angle Rescue Operations (General Litter Concepts):



Steep Angle Rescue Operations are defined as greater than



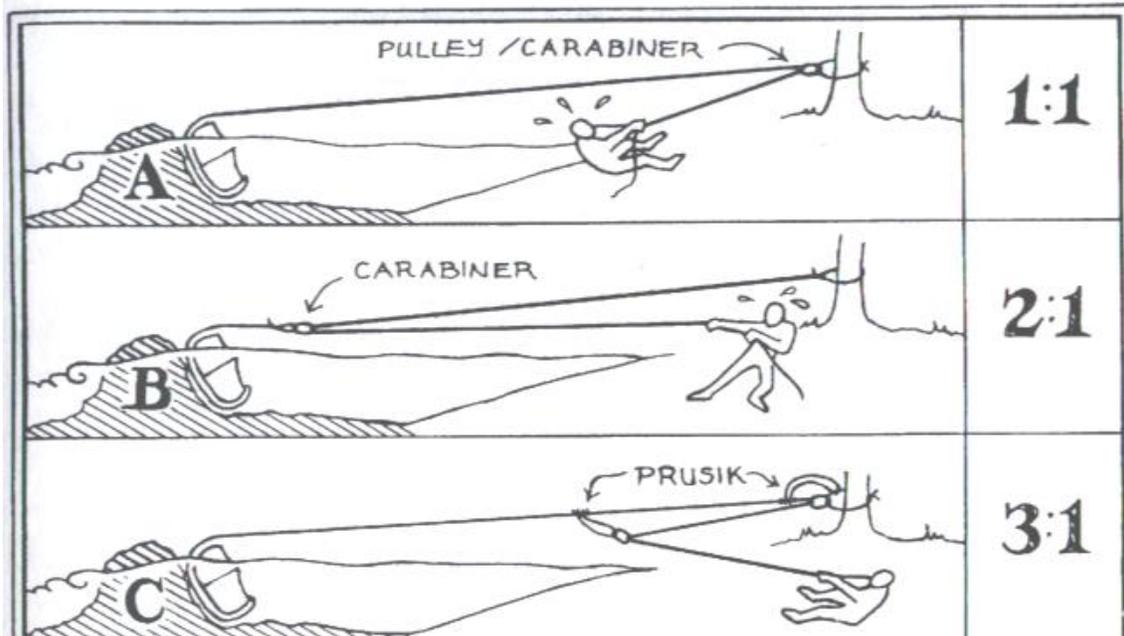
Special Operations Rescue Paramedic

Land Rescue Operations - Competency Guide (LRO)

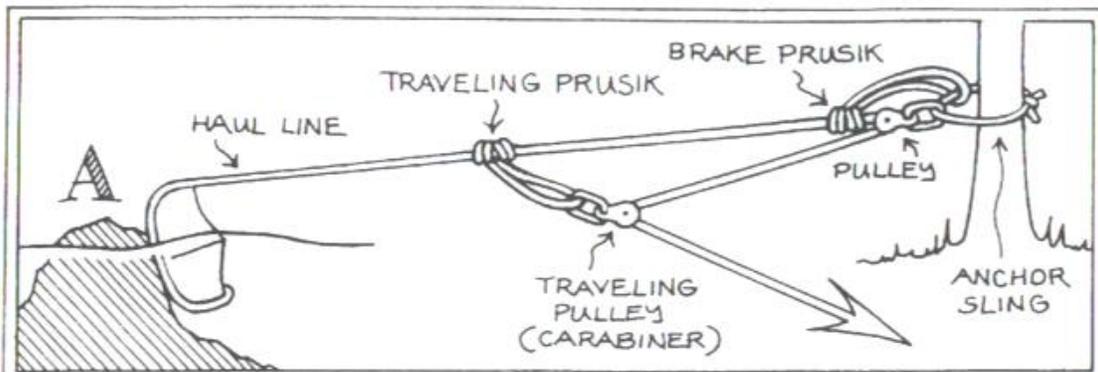
5-09

Rigging a Mechanical Advantage System: All members of the LRO and BRT SOD will be competent in rigging a mechanical advantage system (MAS) appropriate for moving heavy loads with minimal man power. The RP's involved with LRO and BRT will utilize the following MA systems as a general rule.

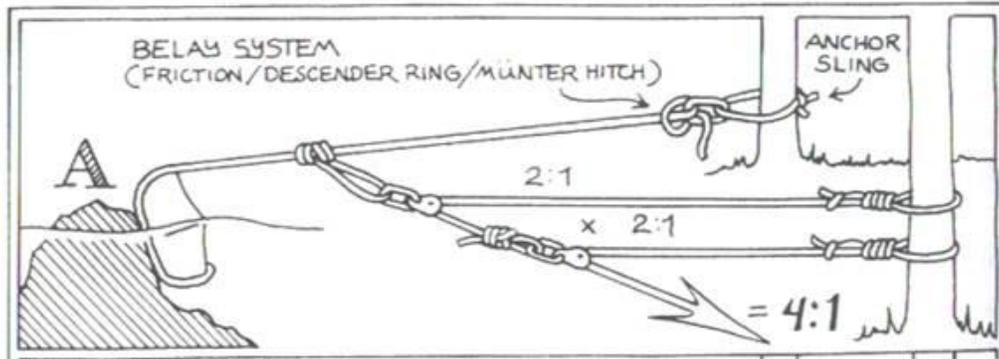
The 3:1 Z-rig is one of the most commonly used MAS. A 3:1 means it takes approximately 100lbs of force to raise 300lbs of load. The mechanical advantage system is accomplished by using a pulley attached to the load known as a traveling pulley. An additional pulley may be attached to the anchor. The following diagram demonstrates MA systems progressing from 1:1 – 3:1 using one rope (haul line). It should be a general rule that all haul systems be backed up with a safety capturing device that will work hands free. The standard will be a prussik or double prussik capturing device.



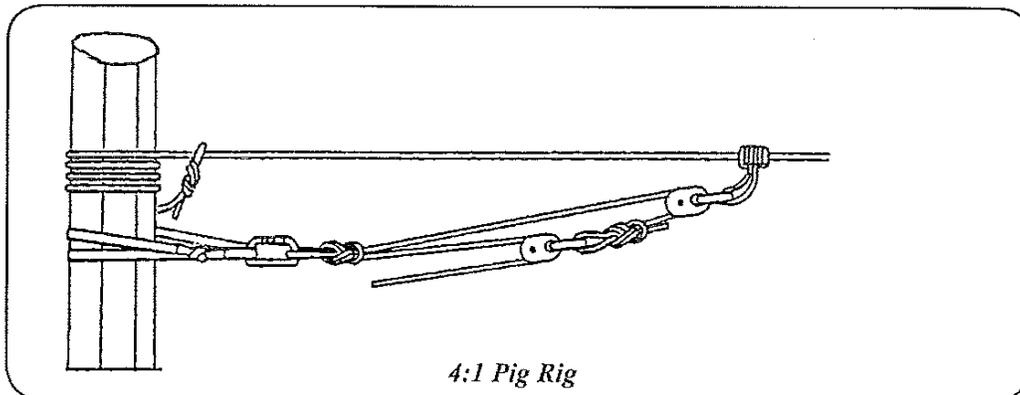
3:1 Z Rig



The 4:1 pig rig (aka piggyback system) has a higher mechanical advantage yet the same hardware as the 3:1 Z rig. The main difference is a separate rope from the load to the anchor is used. This allows the same hardware to be moved to tension multiple lines or it can be used to remove tension from the main line. Keep in mind that a 4:1 is nothing more than a 2:1 combined. The picture below illustrates this concept.



The picture below demonstrates the standard that rescue paramedics within the SOD will demonstrate competency in.



Score		Justification		
0	Did not perform task; performed task with serious safety issues or only under absolute direction of the preceptor			
1	Performed task safely and effectively, but required some coaching			
2	Performed task safely and effectively; no instruction needed			
KNOTS		0	1	2
	Simple Figure 8			
	Figure 8 on a bight			
	Figure 8 follow through			
	Double Figure 8			
	Double Fishermans			
	Prussik Hitch			
	Water Knot			
	Butterfly			
	Munter & Clove Hitch			
	Bowline			
Harness		0	1	2
	Ability to safely deploy and utilize department level III Harness			
	Ability to utilize a "hasty harness"			
Anchor Systems		0	1	2
	No knot anchor system			
	Webbing wrap (3 pull 2)			
Patient Packaging		0	1	2
	Places "hasty harness" onto patient			
	Places helmet, eye, and other PPE onto patient as required			
	Places patient onto immobilization device (OSS, Miller halfback, long board)			
	Places patient appropriately into evacuation device (SKED/Stokes)			
	Secures patient in such fashion as to still be accessible for continuing medical care throughout rescue			
	Considers patient injuries when packaging patient			
	Assures rescuer tender line			
	Assures patient safety strap			
	Can deploy "yosemite" bridle and emesis line			
Mechanical Advantage System (MAS)				
	3:1 Z-Rig			
	4:1 Pig Rig			
	2:1 Haul System			
Comments				

Washington County EMS Special Operations Division – Advanced Life Support Bike Patrol (ALS-BP)/ATV

The ALS-BP/ATV division of WCEMS SPECOPS is the oldest division in the entire program. The methodology was originated in late 2000 with a goal of providing early advanced care in large crowded areas where ambulances were not easily accessible. Again, the goal is no different than any other area of our special operations program – the ability to provide advanced care paramedic within 5 minutes – is still the overall mission. The success of this program gives further evidence that early advanced care is a key to successful patient outcomes.

ALS-BP/ATV Team Member Selection:

Although there are no “physical fitness standard” requirement for the ALS-BP/ATV, the ALS-BP/ATV member must demonstrate the ability to safely ride and maneuver a mountain bike to assist in staffing of these events or operate an ATV. The members are not subjected to the entire physical fitness standards previously defined. It is suggested that (but not mandatory) that they be capable of performing a 10k bike ride safely in order to staff an event on a bike. Every employee that is hired at WCEMS is automatically a part of the ALS-BP/ATV program. The special operations Lieutenant is responsible for the care and upkeep of the program.

It is not a requirement to be a fully functioning special operations rescue paramedic to participate in this section of the SPECOPS Division.

Team members should also demonstrate exception people person skills due to the high profile situations they will be in. The ALS bike team should be proactive in bicycle safety and injury prevention and should be an active participation in parades and other high profile functions.

Event Coordination:

The addition of the special operations trailer allows more flexibility within the program. We are now capable of transporting, storing and repairing the bikes while at an event. The Special Operations Lt. is responsible for assuring all equipment is in the trailer and functional prior to an event. Upon arrival to the event the bike team members should fully deploy the med-rehab tent, tables, water, first aid kits and chairs. This will serve as a first aid and rest station for the ALS-BP/ATV members and public. It is acceptable and almost recommended that the first aid station be manned by one of the members unless an emergency occurs. The other team member should be patrolling the event for better access.

ALS-BP/ATV events are scheduled by the administrative secretary. The administrative secretary will normally fulfill any contract obligations and then forward the event information to the EMS Lt. in a timely manner to allow for proper staffing.

The EMS Lieutenant that will be on duty the day of the event will review any pertinent geographical and other pertinent information to the assigned ALS patrol crew prior to the event. Such things as equipment familiarity, transportation of the bikes, bags, and unit inspection should be included in the briefing.

Bike Security:

- a) All the bikes and accessories bought or owned by Washington County will be housed at the Washington County EMS station. This is for security of the bikes and also to keep them out of inclement weather.
- b) No one is permitted to utilize the bikes without permission from the on duty Lieutenant.
- c) In the event that a member of the bike team is needed on an ambulance during transport as a 3rd attendant. The bikes will be left with another bike team member or law enforcement officers for security.
- d) If both team member should have to leave the event then all equipment should be locked inside the SPECOPS Trailer.

Bike Maintenance:

- a) Routine bike maintenance will be conducted as follows and more as seen fit by the bike committees. The bike will be taken to BCS bikes who provides FREE maintenance on the bikes after each event that the bike program is utilized. This will assist in ensuring safety as well as maintaining the bikes.
- b) A maintenance officer will be appointed to oversee the maintenance of the bikes who will assist the assigned Lieutenant in this arena.

Uniforms:

- a) The current ALS-BP uniforms are not issued uniforms. They include a cool net red uniformed style bike shirt and black pants or shorts or a regular duty uniform if staffing the ATV. The on duty ALS-BP/ATV crews also have communications equipment available to aid in safety.

Patient Care:

- a) WCEMS ALS-BP/ATV personnel will follow the already existing ALS and BLS protocols when functioning as a bike team member.
- b) QA/QI will be performed per the WCEMS normal QI process.
- c) EMS units will be summoned under normal policies and can only be cancelled by the EMS Employee who is working as a bike team member.

Bikes:

The bikes utilized by the WCEMS ALS-BP program will be of high and safe quality. The bikes are an all terrain type bike with exceptional capability for handling and carrying supplies.

ALS BIKE SUPPLY LIST**CENTER POUCH****BOX 1**

2-Lidocaine 100 mg
1-Epi 1:10 1 mg Pre fill
1-Atropine 1 mg
1-Epi 1:1 30 mg vial
1-Adenosine 6 mg
1-Nitro 0.4 mg bottle
1-Bottle Child ASA 81 mg tablets
3-Blunt cannulas- also 3 more in separate box

BOX 2

2-Sodium Bicarb 50 mEq prefill
1-Dextrose 25 g prefill
2-each color blood tubes
5-Amonia inhalants
1-Pen light.
2-1cc syringe
2-3cc syringe-one of each in box 3
2-20cc syringe-one of each in box 3
4-18 gauge needles

BOX 3

1-Benadyrl 50 mg prefill
1-Thyamine 200 mg/2ml
1-Narcan 4mg/10 ml
1-Labetalol 100mg/20ml
1-Albuterol 2.5 mg/3cc
1-Epi 1:1 1mg ampule
1-Oral glucose 15 g
1-Activated Charcoal 15g
1-tube injector
1-Lasix

CENTER TOP POUCH

1-60 gtt drip set

NARCOTIC KIT

2-Valium 10 mg-PFS

2-Morphine 3-10 mg-PFS

2-Fentanyl 1-100 mcg (ampule)

2-Versed 5 mg vial

LEFT POUCH INSIDE

1-ALS Airway Kit

1-I.V. Box

2-touriquets

2-of each catheter

5-preps

1-normal saline

1-glucometer

1-10 gtts

1-60 gtts

cont.

LEFT POUCH OUTSIDE

1-Bag of Electrodes with Razor

1-Quick Combo Adult

1-Quick Combo Pedi

1-3 lead harness

RIGHT POUCH

LP and / or AED with visible treatable screen

1-Report Taking Device

Washington County EMS EMS Immunization Program (EMS-IP)

Introduction:

In the wake of September 11th, 2001, Washington County EMS formed what is now known as the "Special Operations Division" of the county's EMS Department. This division was formed in attempts to deal with the unfortunate and abnormal situations that are, at times, outside of the normal training of the Paramedic curriculum. In 2003 due to the possibility of a bioterrorism incident occurring in our country, the WCEMS department partnered with the Texas Dept. of State Health Services (locally) to assist in the smallpox vaccination program. Several of our team members were vaccinated with smallpox vaccination. Since this time numerous "white paper" studies have shown the effectiveness of paramedics administering vaccines. The results have been overwhelmingly positive for numerous reasons. First, Paramedics are already trained in both the cognitive and psychomotor objectives of medication administrations. Paramedics routinely administer subcutaneous, IM, and Intravenous medications in their day to day profession. Paramedic education involves didactic, laboratory, clinical, and field instruction totaling approximately 1,200hrs beyond that of the entry level emergency medical technician. Some states are allowing EMT's to administer vaccines. Our special operations rescue paramedics undergo an additional eight hours of training in vaccination and administrative paperwork issues. The training is sponsored by the Texas Department of State Health Services Immunization Programs Department.

As EMS continues to evolve into an "**expanded scope of practice**" and to meet its community needs more EMS Vaccination programs are highly likely. With funding cuts and budgetary concerns for state funded agencies more and more local healthcare issues are being dealt with within its local healthcare community. The mobility, existing training, and available advanced life support equipment make EMS extremely useful as a vaccination program.

The program's goal is:

- To have the ability to perform our own (in-house) vaccines to existing and new hire employees
- Ability to provide vaccinations to other public safety personnel if needed (police, fire, government officials, etc...)
- Assist the public health agencies with mass vaccinations in lieu of a bioterrorism or pandemic event
- We are also a TVCP Provider (Texas Vaccine for Children Provider) which enables us to provide "free" vaccines that are required by law for infants and school aged children.

Our Special Operations Division is focusing on the **mobility of this program**. Our paramedics are accustomed to working in adverse conditions on a daily basis. Our paramedics will bring the mobile TVCP program to the "door" so to speak of underserved or "hard to reach" areas of our county to children who may otherwise go unvaccinated. EMS has the advantage of bringing healthcare interventions to the public wherever it is, rather than depend on the public to travel to a more controlled setting.

Authorization: Special Operations Paramedics (only)

While there is no physical fitness standards for this area of our SPECOPS Division only paramedics trained in the vaccinations and vaccination program are allowed to participate in the program. Paramedics giving vaccines must follow this outline exactly and are to be familiar with

all aspects of this protocol. The guidelines were developed with medical direction input, Centers for Disease Control guidelines, and the assistance of regional DSHS representation. **Only paramedics within the department have automatic authorization.** Other who have been trained by the Division Specialist may participate in emergency situations as authorized by the EMS Director or Division Specialist. All vaccinations are standing orders and do not require physicians orders.

Patient and Vaccine Information:

- Informed consent is required
- Only a parent or legal guardian can consent for the immunization of a child (not a babysitter, not a grandparent, not a sibling, etc...) per Texas Family Code 32.001.
- If there are any concerns about a patients vaccination schedule or eligibility, refer the patient to the local DSHS nurse or the patients primary care physician
- Refer to the individual vaccine package insert for dosage information. Different vaccine manufactures will recommend different amounts of their product.
- Refer to the individual vaccine package insert for proper vaccine handling and storage recommendations. State requirements for ordering vaccines and other TDSHS requirements must be adhered to.
- Records of the patient eligibility screening form must be maintained on file for a period of 3 years. If requested, the records must be made available to the Texas Department of State Health Services.
- Vaccines supplied by TDSHS and administered to a child who is eligible for the TVCP program may not be charged to the child or parent. However, administrative charges for paperwork filing or supplies (syringes, band aides, etc...) may be charged up to \$14.00. It will be the policy of Washington County EMS to not charge but to ask for "donations" for supplies used.

Absolute Contraindications:

No live attenuated virus vaccines (MMR, varicella) are to be administered to the following patients:

- Pregnant female patients, or females who may become pregnant in the next three months.
- Patients or close family contacts with cancer, lymphoma, leukemia, high dose steroid dependency, or AIDS.

Procedure:

1. All parents are to be asked the following questions:
 - A. Are you the consenting adult?
 - B. Have you read the information consent forms? Do you have any questions?
 - C. Is your child well today except for a minor illness (such as a common cold)?
 - D. Is your child taking any medications?
 - E. Does your child have any allergies to eggs, ncomycin, streptomycin, or thimcrosal (antideptic containing mercury) serious enough to have seen a physician?
 - F. Does your child or anyone in the child's family have a weakened immune system?
 - G. Has your child had an injection of gamma globulin (immune globulin) during the past 5 months? Gamma globulin is often used for hepatitis A prophylaxis before international travel.
 - H. Does your child have a seizure disorder or any type of neurological problem?
 - I. Has your child ever had a reaction to vaccines in the past (e.g. allergic reaction, high fever >105°F, or shock)?

2. If “Yes” to any of these questions, vaccination should be deferred and referral made for the patient to see the county health department for further guidance.
 3. The following vaccines may be given:
 - dT: adult tetanus, diphtheria toxoid
 - DT: pediatric diphtheria, tetanus toxoid
 - DTaP: diphtheria, tetanus, acellular pertussis
 - DTP: diphtheria, tetanus toxoid, absorbed whole cell pertussis vaccine
 - Hep A: hepatitis A
 - Hep B: hepatitis B
 - Hib: conjugated *Haemophilus influenzae* –type B
 - Influenza: “flu shot”
 - IPV: inactivated polio vaccine (since January 1, 2000)
 - MMR: measles, mumps, rubella
 - PCV7: pneumococcal conjugate
 - Varicella: chicken pox
- In addition to these vaccines certain paramedics will also be trained in performing a Tb (tuberculosis skin test).
4. Administer the needed vaccines according to the table on the following page. Approved paramedics may administer vaccines to employees, to children and any other requesting parties who meet the needed requirements.
 5. Report any possible adverse reactions following immunization. Persons who administer vaccines are required by law (National Childhood Vaccine Injury Act of 1986) to report adverse events following vaccination. The Vaccine Adverse Event Reporting System (VAERS) is the reporting agency. Reporting forms and information about reporting requirements or completion of forms can be obtained 24 hours a day by calling VAERS in Rockville, Maryland, at **(800) 822-7967**.

To prevent any injuries during our vaccination clinics the standard precaution suggested by CDC and DSHS will be adhered to. Patients will be lying down or sitting down during vaccinations (in case a patient faints). A fully stocked emergency response vehicle will be on site during all clinics. This may or may not be an MICU ambulance. Our command staff response vehicles are equipped at the MICU level including all allergic reaction, monitoring, advanced and basic airway management equipment. So it is allowable to have a command staff present in lieu of a MICU ambulance.

Vaccine	Indications	Contraindications	Dosing Notes	Side Effects of Vaccine/Notes
DT (pediatric)	Child with valid medical contraindication to pertussis vaccine	Age > 7y/o	0.5 cc IM ≤ 5 yrs, give in antrolateral thigh. > 5 yrs, give in deltoid	Documentation of the valid medical contraindications to pertussis vaccine is required on the immunization record.
dT (adult)	Patients >7 y/o	Child < 7 y/o	0.5cc IM to deltoid	Some doctors recommend dT every 5 years (especially in dirty wounds).
DTaP (preferred) or DTP (alternative)	Children aged 2 months- 6 years	Age > 7 y/o Contraindication to pertussis component	0.5cc IM ≤ yrs, given in anterolateral thigh. >5 yrs, give in deltoid.	If fever >104°F, crying, or seizures then seek medical attention.
Hepatitis A	Travel outside USA, those at risk (contact with sewer water)			
Hepatitis B	All children born after Jan 1, 1991, and all susceptible children born after Jan 1, 1982 who are at least 11 years old.		0.25 cc IM ≤ 5 yrs, give in anterolateral thigh, > 5 yrs, give in deltoid	Pain at injection site. High risk patients include: IVDA, homosexual, inmates, international travelers, dialysis, group home, health care workers.
Hib	Child aged 2 months- 4 y/o	Age > 5 y/o	0.5 cc IM to anterolateral thigh	Pain at injection site
Influenza	Every fall for people age >50 y/o; women in 3 rd trimester pregnancy;; nursing home residents; persons < age 50 y/o with chronic medical conditions			Vaccination changes every fall based on prediction of what influenza strain will be most prevalent in the upcoming winter season.
IPV	All children	Age > 18 y/o <u>IPV</u> - allergy to ncomycin or streptomycin		Polio virus is shed in the stool for 6 weeks after OPV. OPV may cause vaccine-associated poliomyelitis in immunodeficient children and was replaced by IPV in Jan 2000.

MMR	Children >12 mos old. Persons born after Jan 1, 1957.	Persons born before Jan 1, 1957 (naturally immune). History of anaphylaxis to eggs. <u>MMR</u> (live vaccine)- not for pregnant females or immunocompromised patients or family members.	0.5 cc SQ in posterior deltoid	People with AIDS can still receive MMR. Rash, joint swelling, low grade fever.
PCV7	All children ≤23 mos of age, and other children between ages of 24 mos-59 mos with chronic disease or illness.		High risk children 24 mos-59 mos of age who have not been vaccinated should receive 2 doses of PCV7 given 2 mos apart.	
Pneumococcal	Patient >65 y/o Patient < 2 y/o with long-term illness with increased risk of pneumonia			A prescription is required for a 2 nd dose in the future – usually 5 years after initial vaccination.
Varicella	Children ≥ 1y/o who have not had chicken pox. If child had chicken pox when < 1y/o they need a booster. Children born after Jan 1, 1983.	Children < 1y/o <u>Varicella</u> (live vaccine)- not for pregnant females or immunocompromised patients or family members.		

Note: Follow current immunization guidelines as per the CDC and State of Texas.

How to Administer IM (Intramuscular) Injections

Administer these vaccines via IM (intramuscular) route: **DTaP, DT, Td, Hib, hepatitis A, hepatitis B, influenza, PCV7**. Administer IPV & PPV23 either IM or SQ. When you administer all vaccines, follow the age recommendations indicated in the current ACIP immunization schedule. Any combination vaccine containing one or more antigens requiring Intramuscular (IM) administration is administered via IM route.

Patient's age	Site (see illustrations below)	Needle size*	Needle insertion
Infants (birth to 12 months of age)	Vastus lateralis muscle in anterolateral aspect of middle or upper thigh	7/8" - 1" needle, 23 - 25 gauge	Use a needle long enough to reach deep into the muscle. Insert needle at an 80° - 90° angle to the skin with a quick thrust.
Toddlers (12 to 36 months of age)	Vastus lateralis muscle preferred until deltoid muscle has developed adequate mass (approximately age 36 months)	7/8" - 1" needle, 23 - 25 gauge	Retain pressure on skin around injection site with thumb and index finger while needle is inserted. There are no data to document the necessity of aspiration, however, if performed and blood appears after negative pressure, the needle should be withdrawn and a new site selected. *(p.18)
Toddlers (>36 months of age), children, and adults	Densest portion of deltoid muscle - above armpit and below acromion	1" - 2" needle, 23 - 25 gauge <small>*Red Book 2000, American Academy of Pediatrics</small>	Multiple injections given in the same extremity should be separated as far apart as possible (preferably 1" - 1 1/2" with minimum of 1" apart).

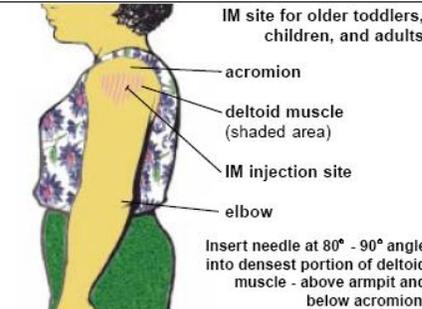


IM site for infants and toddlers (birth to 36 months of age)

vastus lateralis (shaded area)

IM injection site area

Insert needle at 80° - 90° angle into vastus lateralis muscle in anterolateral aspect of middle or upper thigh.



IM site for older toddlers, children, and adults

acromion

deltoid muscle (shaded area)

IM injection site

elbow

Insert needle at 80° - 90° angle into densest portion of deltoid muscle - above armpit and below acromion.

How to Administer SQ (Subcutaneous) Injections

Administer these vaccines via SQ (subcutaneous) route: **MMR, varicella, meningococcal**. Administer IPV and PPV23 either SQ or IM. When you administer all vaccines, follow the age recommendations indicated in the current ACIP immunization schedule.

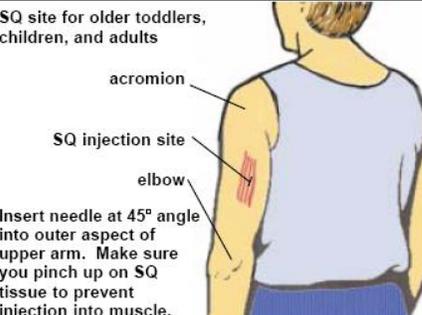
Patient's age	Site (see illustrations below)	Needle size*	Needle insertion
Infants (birth to 12 months of age)	Fatty area of the anterolateral thigh	5/8" - 3/4" needle, 23 - 25 gauge	Insert needle at an 45° angle to the skin. Pinch up on SQ tissue to prevent injection into muscle.
Toddlers (12 to 36 months of age)	Fatty area of the anterolateral aspect of the thigh or outer aspect of upper arm	5/8" - 3/4" needle, 23 - 25 gauge	There are no data to document the necessity of aspiration, however, if performed and blood appears after negative pressure, the needle should be withdrawn and a new site selected. *(p.18)
Children and adults	Outer aspect of upper arm	5/8" - 3/4" needle, 23 - 25 gauge <small>*Red Book 2000, American Academy of Pediatrics</small>	Multiple injections given in the same extremity should be separated as far apart as possible (preferably 1" - 1 1/2" with minimum of 1" apart).



SQ site for infants and toddlers (birth to 36 months of age)

SQ injection site area

Insert needle at 45° angle into fatty area of anterolateral thigh. Make sure you pinch up on SQ tissue to prevent injection into muscle.



SQ site for older toddlers, children, and adults

acromion

SQ injection site

elbow

Insert needle at 45° angle into outer aspect of upper arm. Make sure you pinch up on SQ tissue to prevent injection into muscle.



Do NOT administer any injections in the gluteus maximus area in infants and young children.

Adapted with permission from the Immunization, Tuberculosis, and International Travel Division, Minnesota Department of Health
www.health.state.mn.us/divs/idepc/newsletters/gys/admim.pdf

Department of State Health Services
 Immunization Branch
www.ImmunizeTexas.com
 Stock No. 6-27P 01/2005



Washington County EMS Medical Rehab Program (MRP)

Introduction

For over 10 years published articles and research papers have revealed that firefighter deaths from on-scene stress and heat related emergencies have not decreased. At least 50% of on-scene fatalities is stress related. Most EMS agencies have not adopted procedures to properly conduct "Medical Rehab" as a standard for agency assist calls. The days of simply responding an ambulance to the scene of a large grass fire waiting for someone to pass out are simply not working. In fact morbidity and mortality is on a steady increase. Washington County EMS with the assistance of local community support now has the capabilities to properly setup medical rehab to support any public safety agency that is required extended operations on a scene. The public safety sector (Law Enforcement, Fire, and EMS) are all extensively involved in physical stressful activities that during extended operations may require proper rehab procedures. Medical Rehab will be organized under our "special operations" umbrella however; each Lieutenant will be capable and responsible for proper setup of medical rehab if so needed. Therefore it's crucial that every personnel understand the purpose, goals, and setup of medical rehab.

Purpose:

Establish a nationally accepted methodology to ensure the physical and mental condition of members operating at an emergency or training does not deteriorate to a level that negatively affects safety of emergency responders or operations. This process will allow for crew members to maintain peak functional ability during an emergency operation. If EMS resources are overwhelmed or involved in the actual emergency then these resources can obviously not be deployed and that should be understood.

Deployment (when):

Climate and environmental conditions of the emergency scene should not be the sole justification for deployment. Any activity/incident that is large in size, long in duration, or labor intensive and may rapidly deplete the energy and strength of emergency responders should be considered for rehab deployment. Other guidelines are as follows:

- A. Heat Index above 90 degrees F
- B. Wind Chill below 10 degrees F

Process:

The process can be initiated by any public safety agency or self initiated by EMS if it appears necessary. The trailer is fully functional and stocked 24/7 with medical rehab equipment. So its deployable within 5-10 minutes of the request. The special operations team has a designed a template to be utilized on equipment placement, trailer, and ambulance placement to simplify the setup procedure. Please view attached template for further understanding

Clinical Guidelines:

The medical rehab operation will be staffed by qualified advanced care providers. The NFPA 1500 and National Standard of "vitals in – vitals out" methodology has been adopted into our rehab planning.

Initial Assessment / Medical Evaluation:

All personnel will have complete vital sign (blood pressure, SP02, ECG, Pulse Rate) including (CBT) body temperature and Carbon Monoxide Monitoring through new advanced carboxyhemoglobin monitoring devices such as the RAD 57 – CO pulse oximeter, immediately upon entering rehab operations. Rehab Paramedics will assure accountability by reporting all responders inside rehab to the (IC) incident commander. A rehab accountability form will also be utilized by the rehab paramedic. This "baseline" will guide further treatment modalities and length

of rehab. Once into the cool, rest, and re-hydration area vitals will be checked q-10 minutes until satisfactory for return to duty (RTD). Emergency personnel in general will not be “cleared” to return to duty until he/she has:

- A resting heart rate of less than 110 bpm
- An oral temperature is below 100.6 degrees F
- CO levels below 5%
 - Any patient exceeding 10% after proper rehab and clinical recovery of other vitals should be transported to the ED for further evaluation.

Rest:

Personnel should be able to rest 15-20 minutes; however, the nature of the incident or the amount of resources may dictate shorter or longer rest periods.

- Remove turnout gear or excessive clothing
- Position in “*comfort*” position

Cool:

Personnel entering the rehab operations will be cooled utilizing several methods:

- Cold wet towels to the back of the neck, arms, and legs
- Cooling chairs
- Fans

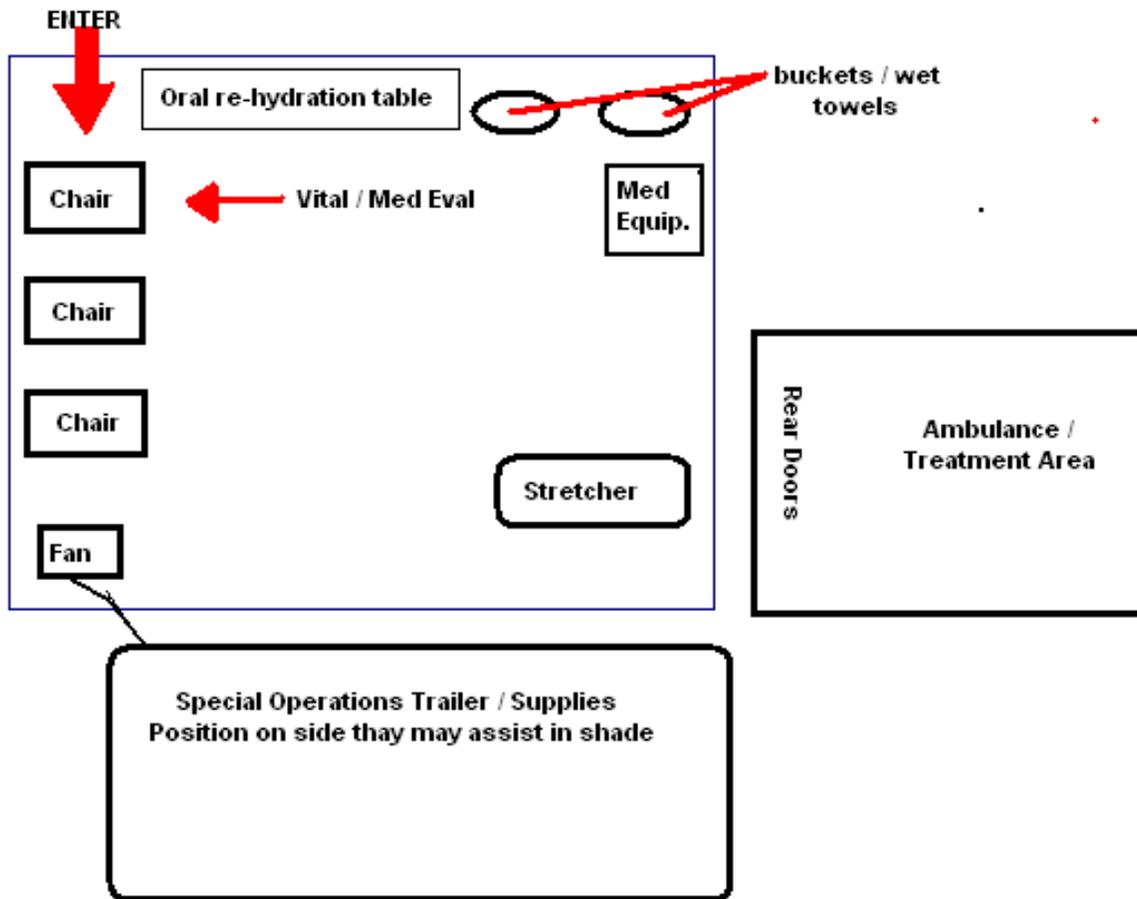
Re-hydration:

Inside the rehab operations will be re-hydration at two distinct levels. One being oral re-hydration via commercially available electrolyte replenishing fluids along with IV isotonic crystalloid solutions. Oral re-hydration remains the treatment of choice for fluid replenishment and appears to cool patients faster and lowers body temperatures easier than IV hydration. Most studies show no statistical significance in the difference of oral vs IV hydration. IV fluids should be utilized for personnel who are nauseated or are having difficulty with oral intake. Several studies (Merginet – Bledsoe) have proved that IV re-hydration is a valuable alternative for potential dehydrating patients.

Interestingly enough it takes very little loss of fluids for symptoms to persist. Symptoms of dehydration include headache, nausea, cramp can be present with as little as 1-5% liquid (60cc-300cc) loss. The body slows down, skins become flush, and pulse rate increases. However, 4% or greater liquid loss is required for thirst to occur. What this means is that personnel under stressful work environments should be made to re-hydrate when they are not even thirsty. By the time they are thirsty they can be severely dehydrated. At approximately 5% liquid loss heat exhaustion usually occurs and at 6-10% liquid loss sweating stops, dizziness (accident prone), and cyanosis, as well as simple task like speech and walking becomes difficult.

- Members should re-hydrate with at least 1 qt of fluid/electrolytes for every hour of operational work
- Paramedics may opt to re-hydrate with IV solutions but should not exceed 3L in the field.

Med Rehab Setup Template



Washington County EMS Tactical EMS Program (TEMS)

Tactical Paramedic Support agreement between Washington County EMS and the Brenham Police Department.

I. Introduction. Recognizing the dangerous conditions, and the conduciveness for injury during a tactical police deployment, an agreement for the provision of on-scene medical care is adopted by **Washington County EMS (WCEMS)** and the **Brenham Police Department (BPD)**. Just as military operations unit includes a medical contingent into its operational plans, this agreement incorporates specially trained EMS Paramedics into the BPD's tactical operations. The Tactical EMS (TEMS) Paramedics will provide medical support during training and operational missions, and would be equipped to provide immediate medical support within the inner perimeter of any tactical operation. Thus, an injured officer, civilian or suspect would be provided immediate access to medical care, despite hazardous conditions that might otherwise delay treatments. This agreement is not limited to tactical environments it includes such covert operations as meth-labs.

II. Overview. It is agreed that WCEMS will provide medical support for the BPD's "**Emergency Response Team**" in the form of paramedics and necessary on-scene medical equipment. WCEMS will further provide tactical training and safety equipment to assigned paramedics such as ballistic vests and other necessary equipment. BPD will provide co-department training as deemed necessary.

The paramedics involved in this program are all full-time employees of WCEMS and have been selected by WCEMS Command Staff and the Division Specialist. Only paramedics completing the federal **Counter Narcotics Tactical Operations Medical Support** program sponsored by the Department of Defense or a "State Approved" Tactical Medic Program course may participate. Participation in this program is voluntary and the paramedic remains an employee of WCEMS and is compensated by Washington County during actual call-outs.

BPD will incorporate the paramedics as full team members, having Brenham Communications notify the WCEMS Tactical Medic on call during all ERT call-outs. BPD requires that the paramedics continuously train with the Emergency Response Team and maintain active practice and training in the paramedic profession.

The paramedics role on the team is one solely of medical support, therefore the paramedics will be unarmed unless TCLOSE certified and positioned at the discretion of the ERT commander as the situation dictates. However, as a rule

the paramedics will be positioned somewhere just outside the inner perimeter of the objective.

III. Responsibility of the WCEMS Paramedic. The Tactical Medic serves as the "team medical officer" and refers to the WCEMS paramedic assigned to the team. His functions include:

A. Acquiring and maintaining important medical history, immunization status and current health status on each team member. The confidentiality of this information is ensured by the medical officer. He also ensures the transfer of information to appropriate medical personnel to save valuable time during the treatment of injury or illness.

B. Monitors the medical effects of environmental conditions on individuals and team performance. The tactical medic immediately brings any problems to the commanders' attention.

C. Providing field medical treatment to team members injured or taken ill while engaged in mission activity. He ensures that team members are afforded the best possible treatment and are transferred in a timely manner to an appropriate level of care. He provides humanitarian medical assistance to non-law enforcement personnel injured or taken ill during an operation until appropriate transfer to the EMS system can be safely effected. He elects when and where ambulances should be located in a stand-by mode during operations.

D. Serving as the patient advocate for officers who are treated by other medical providers. He establishes good working relationships with local Airmedical systems and with receiving medical institutions and assures appropriate integration of the team's medical program with local health care delivery system. He also keeps commanding officers apprised of his findings and recommends actions which should be taken to insure optimum outcomes for the officer and the team following injury or illness.

E. Conducting Medical Threat Assessments to determine the potential impact of medical/health factors on a mission and serving as the Medical Intelligence Officer. He serves as a health information resource for team members. The team medical officer is the commander's conscience and advisor on matters relating to the health of the team.

F. Providing medical care under the direction of the Washington County Medical Director, using specialized medical and extraction (airmed) protocols and standing orders as established by the medical director. Provides medical and operational documentation to the medical director for review.

G. Making himself available several times per month on an on-call basis to respond to ERT call-outs, responding within 20 minutes to all calls. The on-call paramedic shall carry a way of communications at all times while on-call. He will also carry a duty radio during responses to assure communications with dispatch.

IV. Responsibility of the ERT Commander. The tactical medic serves as an advisor to the unit commander, but the health and safety of the team is ultimately a command responsibility which can not be abrogated. The commander's functions include:

A. Providing command level support to the team medical officer for matters relating to health and safety. The commander should demonstrate through intent and action a true interest and concern in the physical and psychological welfare of team members.

B. Ensuring appropriate safety measures for and by the paramedic are maintained during an operation. Such as:

1. Positioning the paramedic at the scene of operation in a safe zone, but near the inner parameter of the operation.

2. Ensuring that the scene is safe and secure, as so far as is practical, prior to calling the tactical medic into the inner parameter of an operation.

3. Ensuring that victims needing medical care are brought out of an unsafe or unsecured location and taken to a safe zone for treatment by the paramedic when possible.

C. Ensuring appropriate medical coverage for all team activities.

D. Ensuring that the WCEMS Command Staff assures the tactical medic maintains his medical skills at a level higher than the average paramedic through continuing education and clinical work.

F. Facilitating implementation of the medical officer's recommendations when determined to be in the best interest of the team.

V. Goals of Tactical Medical Support Activity. Implementation of an effective tactical medical support program is directed at achieving these important goals:

A. Provide for a safer environment in which the paramedic performs his duties at the scene of a tactical operation.

B. Enhance mission accomplishment.

C. Reduce death, injury and illness, and related effects, among officers, paramedics, innocents, and perpetrators.

D. Reduce line of duty injury and disability cost to both agencies.

E. Reduce lost work time for specially trained, hard-to-replace paramedics and officers.

F. Maintain good team morale when true concern for the members' good health is realized.

VI. Training and Qualifications. Certain basic principles guide the development of a sound medical support program. These include:

A. Team medical officers that may be on the inner perimeter will be trained to at least the PARAMEDIC level and will be required to maintained current certification through the Texas Dept. of State Health Services. Team medical officers will also maintain certification in Basic Trauma Life Support (BTLS) or Pre-hospital Trauma Life Support (PHTLS).

B. Team medical officers must be familiar with, and able to effectively coordinate with the entire Emergency Medical System, from the area of operation to the receiving medical facility.

C. Tactical medics must work with the tactical team on a regular basis and must be trained to understand mission objectives, tactics used, weapons, pyrotechnics and other devices likely to be employed, and communication policies and procedures. In order to function effectively in support of a tactical team, the medic must have a working knowledge of the team, its tools and tactics.

D. All paramedics assigned as tactical medics must maintain their clinical skills by actively participating in patient care activities on a regular basis (full time EMS). A Paramedic working at a fire station may not qualify him as full time EMS.

E. Team medical officers shall complete specialized training which teaches the skills necessary to operate in the austere environment and receive federal certification as "Emergency Medical Technician - Tactical".

F. Tactical Paramedics for WCEMS must pass the Special Operations Physical Fitness Standards as set forth in the WCEMS SPECOPS Manual.

These principles and policies are hereby understood and agreed upon by Washington County EMS and the Brenham Police Department. It's further understood that WCEMS is fully responsible for training requirements, safety equipment, and medical equipment for the tactical medic support program.

Kevin Deramus, LP
WC-EMS Director

Jay Petrash, Asst. Chief
Brenham Police Department

Washington County EMS

Tactical Medic



Standard Operational Emergency Medical Guidelines

Purpose

To integrate a 6 member paramedic team integrated into Brenham Police Department tactical operations to provide immediate on-scene advanced life support medical care to tactical team members, hostages, victims, bystanders, and suspects. The nature of tactical operations creates an environment in which team members may sustain traumatic injuries during high-risk incidents.

Background

The Brenham Police Department Special Weapons and Tactics (SWAT) team is composed of highly trained officers. The team is prepared to assume full control of high-risk tactical situations, which by nature would be considered excessively dangerous or complex for conventional law enforcement officers. Due to the high potential for severe injury to officers, suspects or bystanders during these operations, tactical medical support in the inner perimeter is essential and has become an accepted national standard. Washington County EMS paramedics are highly trained in the management of acutely ill and injured patients in the pre-hospital setting. Each of these specialties requires intensive training as well as numerous hours of continuing education and hands on practice to maintain the required levels of expertise.

The need to maintain these competencies at the highest possible level resulted in the realization that an armed member of the SWAT team must be a full time active member of the team and that a paramedic must be a full time operational field paramedic. For this reason, a select group of WCEMS paramedics has been uniquely selected to provide tactical medical support for BPD SWAT. For reasons sighted above, the tactical paramedics will be unarmed unless TCLOSE certified. For medic will be fully trained by national standards (CONTOMS) or other TTPOA standards in SWAT Operations.

Goals

The goals of the WCEMS tactical medic (TEMS) program are:

- Enhance mission accomplishment
- Reduce death, injury, and illness among officers, innocents, and suspects
- Reduce line of duty injury and disability costs to the City of Brenham
- Provide highly trained and motivated tactical paramedics to support BPD SWAT operations

Team Membership

The provision of care during a tactical incident requires WCEMS tactical paramedics to face a variety of highly complex and strenuous problems. These include the potential of having to render emergency medical care under fire, or provide for the rapid extraction of casualties under hostile fire. In these cases paramedics have little or no control over distractions, cannot mitigate dangers, have limited personnel resources available, and often cannot illuminate victims. For these reasons, personnel assigned to the Tactical EMS (WCEMS/TEMS) Unit must meet a certain physical stamina requirements as set forth by the WCEMS Special Operations Division Policy. Application is strictly voluntary. The applicant must be aerobically fit and possess above average upper-body strength.

Eligibility

To be eligible to enter the tactical medic selection process, candidates must meet the following Pre-Requisites which also meet the qualifications for an outer perimeter medic:

- Minimum of Paramedic Status
- Full Time Employee with Washington County EMS
- Successful completion of Washington County EMS SOD annual PT evaluation.
- Currently assigned to Washington County EMS Special Operations Division (SOD) after completing all Division Entry Standards.
- Attends Tactical Medic training within the Department prior to attending an approved Tactical Medic Course.
- Must have 40hr Haz Mat Tech Certification and maintain this yearly with 8hr refresher course.

Physical Fitness Standards

Tactical medics are subject to annual and no-notice evaluations in-line with the Special Operations Physical Fitness Advisory. Team members will be required to maintain the above listed physical fitness standards:

Initial Training Requirements

Tactical medics will complete the following education and training within the indicated time frame:

- ❑ Review of TCC Guidelines and Phases of Care Lecture.
- ❑ Tactical Operations Sensory Overload (TOSOL) Lab training
- ❑ Patient assessment competency scenario using TCCC guidelines.
- ❑ CONTOMS or TTPOA approved SWAT Course during the first available course
- ❑ Due to the unique situations and likelihood of coming across clandestine labs with the SWAT teams. The tactical medic will be trained in hasty team decon procedures, clan lab kit monitor, and mobility / treatment while using an APR.

Continuing Training Requirements:

To qualify as a fully deployable inner parameter Tactical Medic Rescuer, the applicant shall satisfy the following criteria:

- A. All paramedics assigned as tactical medics must maintain their clinical skills by actively participating in patient care activities on a regular basis (full time EMS).
- B. Team medical members will be trained to at least a P2 PARAMEDIC level and will be required to maintain current certification through the Texas Dept. of State Health Services. Team medical officers will also maintain certification in Basic Trauma Life Support (BTLS) or Pre-hospital Trauma Life Support (PHTLS).
- C. The paramedics involved in this program are all full-time employees of WCEMS and have been selected by WCEMS Command Staff and the Special Operations Lieutenant. Only paramedics completing the federal Counter Narcotics Tactical Operations Medical

Support program sponsored by the Department of Defense or a "State Approved" Tactical Medic Program course may participate

D. Tactical Paramedics for WCEMS must pass the Special Operations Functional Fitness Standards as set forth in the WCEMS SPECOPS Manual. In addition to these cardiopulmonary standards a strength testing component (listed below) has been added to assure the medic can properly extricate a downed police officer or victim who is wearing heavy protective gear.

- 0.5 mile run in full gear (No Bag) in 7min
- 60 yard Dash in full Gear with Bag and two 30lb weights in 25sec
- 100 yard dummy drag/carry in full gear. (50 yards with one medic and 50yards with two medics) in 2min.

E. Must have a policy review with SOD specialist and exam

*Any person that meets all the prerequisites and some, but not all, of the above items may participate on the team but will not be utilized as an interior rescuer.

Continued participation

WCEMS employees recognize and agree that BPD has full and final authority over EMS employee participation as a tactical medic team member. If for any reason BPD does not support the continued participation of a team member the employee will be removed from the program at the request of the BPD Chief.

Activation of WCEMS TEMS Unit

Activation by WCEMS Tactical Paramedics for immediate call out.

- Immediate call outs will come through City of Brenham Communications via a request for assistance (RA) specifically requesting "tactical medic support".
- The on call TEMS Paramedic and the appropriate, on-duty Special Operations Division Command should be dispatched to the requested briefing or staging location.

Response Protocols

Immediate Call Out

- Upon Tactical Paramedic (TEMS) dispatch tactical paramedics will gather all gear needed and report to the staging or briefing location and or respond to the scene if directed.
- Unless otherwise directed, a typical TEMS request will deploy 2 fully geared and tactically trained medics. The two unit person response allows for an inner perimeter medic along with an outside perimeter medic.
- They will move to the designated radio channel as set by BPD all covert operations.
- In the event the call is completed without incident, TEMS Crew will remain out of service (OOS) for incident de-briefing.

- ***Pre-planned raids carried out with one SWAT team deploying as a single unit*** – In this situation one tactical medic (inner-perimeter medic) will accompany the raid team in the SWAT vehicle(s), the second tactical medic will drive the EMS Command Vehicle

to the scene, The tactical medic driving the command vehicle will follow standard procedure for monitoring the designated tactical frequency while moving to the target. Upon arriving to the target location, the outer perimeter tactical medic will move up to the target and position himself for clear visibility of the SWAT Teams entry point and positioned by an outer perimeter armed officer for security.

- **Pre-planned raids carried out with SWAT deploying as two separate teams when the target is within a 10-mile radius of BPD headquarters** - Under these circumstances the tactical medics will accompany the SWAT teams in the SWAT vehicles and both will function as inner perimeter medics. The on shift Lieutenant will be responsible for out perimeter details.

Medical Resource Information

- ❑ TEMS Paramedic will maintain information on all Hospitals in Brazos Valley as well as air medical assets.
- ❑ TEMS Paramedics will also serve as the medical information officer for the BPD SWAT operators and officers. The Medical information officer will be responsible for having a working knowledge of the medical history of the SWAT Operators through a periodical review of the medical information forms (MIF).
- ❑ TEMS Paramedics will also be responsible for a medical information briefing for pre-planned raids, HRWA, or other events that the SWAT Commander or

Weapons Handling Guidelines

Due to the unique and high-risk nature of the tactical environment, the potential exists that a tactical medic may be required to handle, secure or safety various types of munitions and weaponry.



This guideline is intended for the sole purposes of the WCEMS Tactical Medic to be able to:

- ❑ **“Check, clear and safe”** any weapons which may need to be secured prior to or during the attempt to provide pre-hospital care to suspects or incapacitated law enforcement officers.
- ❑ Maintain knowledge, comfort and the ability to handle and safely discharge a weapon for defensive postures and to provide lethal protection for the lives of himself/herself, the patient and/or incapacitated SWAT team members.
- ❑ All weapons training and handling will be provided under the direct supervision and approval of the BPD SWAT team or approved designees.

Additional Training

As part of the annual training, WCEMS Special Operations Tactical Medics will attempt to attend a weapons handling and familiarization course provided by the BPD SWAT team.

Lethal Weapons Discharge

Should a tactical medic be confronted with a situation under direct hostile fire, the WCEMS Tactical Medic may secure and return lethal fire when their life or the lives or welfare of their patients or incapacitated SWAT team members is clearly in jeopardy and no obvious possibility of safe retreat or other self preservation measures exist.

The following decision making matrix will be utilized for such purpose:

- a) *Am I under direct hostile fire?*
- b) *Does clear un-impeded visualization of the threat exist?*
- c) *Does the ability for safe retreat, cover or concealment exist?*

- d) *Do circumstances exist where alternate protective measures are not possible or readily available? i.e. the immediate arrival of additional law enforcement personnel or return cover fire by SWAT Team Sniper personnel)*
- e) *Does a "fear of loss of life" for you, the patient or an incapacitated SWAT team member clearly exist?*

Less than Lethal Weapons Discharge

The WCEMS Tactical Paramedic personnel should have no need to provide "Less than Lethal" return fire for any reasons other than in a training environment or circumstance when no other weapon exists for self preservation or defense as outlined in the "*Lethal Weapons Discharge*" matrix.

Media Contact

Tactical medics are not to talk to representatives of the media at anytime about the operation, organization, or events surrounding activations or any aspect of operations or missions. All requests for information or interviews will be directed to the BPD Public Information Officer.

Additional Duties

- Each division of the WCEMS Special Operations Division has a division specialist assigned to the division. The division specialist works under the supervision and communication of the SOD Lt and EMS Director. The responsibility of the specialist is to ensure the smooth operation and growth of the tactical medic program.

Areas of responsibility include;

- ***Physical Fitness*** – Duties will include administering and documenting annual physical fitness evaluations.
- ***Medical oversight*** – Duties will include; a review of the tactical medical SOC appendix, a review of the tactical medical modules, completing tactical medical modules for each tactical medic, and a review of all PCR's completed during tactical operations.
- ***Training*** – Duties will include coordinating training with the BPD SWAT training POC, establishing and posting a training calendar, monitoring training attendance, and maintain tactical operational modules for each team member.
- ***Logistics*** – Duties will include quarterly inspections of tactical equipment (helmets, gas masks, body armor, vests, radios), and maintaining an inventory of tactical equipment.
- ***Special Operations Lieutenant*** – One of the WCEMS Lieutenants will be assigned responsibility for oversight of the tactical medic program and should work closely with the division specialist on all project and concerns. He/she will also provide Command timely updates on any ongoing issues involving the program.

Emergency Medical Care (EMC) Guidelines:

All medical care performed by authorized tactical medics will conform to the letter and spirit of the Washington County EMS System Clinical Operating Guidelines (COG's) unless otherwise stated.

There are considered to be three stages of medical care delivered in the tactical environment:

Care Under Fire:

Emergency medical care rendered in an unsecured inner perimeter. Care will be limited only to those interventions and treatments required to correct immediate life threatening conditions. The goal is to correct life threatening conditions and to facilitate the evacuation of the victim to a location of cover or out of the direct fire zone.



- ❑ Patient is under imminent threat
- ❑ Care is rapid, abbreviated, and austere
- ❑ Primary goal is get patient out (1st choice: Auto-extraction 2nd choice: Rapid extraction)

Care and priorities in this section includes:

- ❑ **Defend self and patient** - Protect your patient from further injury and be prepared to defend yourself. Stay low at all times
- ❑ **Cover and concealment** - If no cover is available, the casualty should not move and make as little noise as possible so as not to draw fire.
- ❑ **Stop life-threatening hemorrhage** - Control major hemorrhage using a tourniquet with life-threatening bleeding (actively spurting or rapidly free flowing) is present.
- ❑ **Remove patient rapidly, if possible** - Decide how you will move this patient (mode of carry, drag the patient, use of extrication bag, etc.) Depending on the situation, patients must wait for care. Consider yelling (or whispering if situation dictates) for injured to attempt crawl to a safer area, if they are able to do so.
 - **Auto or rapid extraction** - Don't be overly concerned with spinal immobilization while under fire. The average time to immobilize takes several minutes and the hazards may far outweigh the gains. Drag along the long axis when spinal trauma is of concern.

Tactical Field Care:

Emergency medical care rendered in an area that has less immediate threat than the direct fire zone. This area is still posing threats and caution, cover, and concealment should be utilized.

Care and priorities in this section includes:

- ❑ **Assessment**
- ❑ **Ventilatory support** – Use BVM and airway adjuncts if apneic or greatly depressed respirations, pleural decompression for suspected tension pneumothorax, Bolin Chest seal for open and or sucking chest wounds.
- ❑ **Other treatments:** Treatments that the tactical medic deems appropriate for immediate stabilization and/or correction of any life threatening condition and will not unduly expose the medic, victim, or covering officers to additional danger. Appropriate treatments may include IV, Bandaging, Quick Clot, Analgesics if available, and Hypothermia Prevention.

- ❑ **Re-Assess** – Recheck tourniquet application(make sure time applied is marked) Pt vitals if able, Airway adjuncts that may be in place, If chest seal was used then re-check for possible pneumothorax that may have developed.
- ❑ **NOTE: Cardiopulmonary resuscitation (CPR) Resuscitation**, during hostile situations, for victims of blast or penetrating trauma who have no pulse, no ventilations, and no other signs of life will not be successful and should not be attempted.

However, casualties with torso trauma or polytrauma who have no pulse or respirations during TFC should have bilateral needle decompression performed to ensure they do not have a tension pneumothorax prior to discontinuation of care.

If the Scene has been secured, then the Tactical medic should resort to daily field medicine and treat all pts accordingly including CPR if needed.

Tactical Evacuation Care:

This phase involves the movement of the victim to the ambulance and to a definitive care facility. If the scene has not been secured, then caution should still be utilized by the evacuation team due to posing threats.

Care and priorities in this section include:

- ❑ **Re-Assess Victim and interventions prior to movement.**
- ❑ **Determine the mode of movement** – will the ambulance come to you or will you go to the ambulance.
- ❑ **Delivery of pt to Ambulance** – Upon passing pt care to the ambulance crew, provide a complete pt report to the in charge paramedic including injuries, interventions, and responses to interventions. Direct ambulance where to transport the pt to. (Brenham Airport to meet with PHI, Direct transport to St Joseph in Bryan, or SWB). One Tactical Medic should accompany the crew if an injured officer is the victim. This medic should make every attempt to stay with the officer until arrival at the Emergency Room.
 - **Note:** Transport the officer's helmet with him/her and advise the crew of the medical ID Tag in the back of their Helmet.
- ❑ **Continued Interventions** - Any Interventions needing to be provided at this time may be done so in accordance to Washington Co EMS Protocol. Once pt is in the ambulance and out of harm's way, all protective clothing may be removed.

Important Note about Patient Assessment

When providing care in an environment in which light or noise might endanger either the patient or tactical/ medical operators the performance of a typical, complete patient assessment may be limited. Specifically, the ability to obtain a complete medical history through questioning, a complete physical exam through visual inspection, and diagnostic analysis, including blood pressure, ECG monitoring and pulse oximetry, may not be realistic in a tactical situation.

Tactical Medical Operators within the Washington County EMS system are authorized to perform and base treatment decisions upon limited patient assessment in the described situations with the understanding that a complete patient assessment, appropriate to patient condition, will be completed when the patient and tactical medical operator are extricated from the high-risk environment.

Important Note about Special Assessment Situations

The nature of tactical operations also creates special assessment situations in which the tactical medical operator may perform a patient assessment via 'remote control' via long distance operation, verbal interrogation, or yes/no questioning. Additionally, the tactical medical operator

may be required to provide specific patient care instructions to non-EMS personnel to provide life saving interventions when the tactical medical operator is unable to access the patient.

- Tactical Medical Operators within the Washington County County EMS system are authorized to perform and base treatment decisions upon patient assessments that are performed via remote means when the tactical medical operator is unable to access or assess the patient in person. This assessment may be performed via any communications means available and should be augmented, whenever possible, by visualization of the patient from a position of cover.
- Tactical Medical Operators within the Washington County EMS system are authorized to provide patient care instructions to non-medical providers in those situations when the tactical medical operator is unable to access the patient. These directions may be provided via any available and functional communications means.

Treat and Release Kit – During times of training or extended operations, the treat and release kit may be utilized by Tactical Medics to treat illness or injuries that can commonly be treated or prevented with over the counter medication. Tactical Medics are to utilize this kit in accordance with the Washington County EMS protocol's.

CANINE (K-9) EMERGENCIES



The care and safety of a police dog is a number one priority with handlers. The animal is normally a valued member of the officer's family and is loved and cared for like a child, but is owned and maintained by the City of Brenham. When not on duty, the canine lives with the handler. And in fact, it is common that the animal can often be found sleeping at the foot of a bed occupied by the handler. An extremely special bond is developed during training and throughout the work environment. The tactical medic must know how to provide emergency medical care to a canine and be able to carry the appropriate medical supplies in the event the animal itself becomes injured or ill during a mission. These protocols were designed with the primary focus being on providing advanced canine emergency of injured police dogs while in the line of duty. Only system medics of the Washington County EMS Special Operations Tactical Medic Division shall utilize these advanced care

protocols. The application of any advanced protocols by other system providers in a non-tactical or **non-police dog emergency is prohibited.**

Ambulance Transport of Police Dogs

As Police dogs are sworn officers they should be afforded the same care and transport options as their human counterparts when available. The ambulance transport of an injured or ill police dog to an emergency animal center is left to the discretion of the senior tactical medic present on the scene who must take into account on-going scene stability, animal to ambulance location, other transport options available (PD vehicle specifically designed for police dogs), and provision of care for police officers still present on scene. As a general rule, transport is reserved for humans first, canines second, but both carried by EMS.

It should be understood that the tactical paramedics working for Washington Co EMS are not Veterinarians or Veterinarian Assistants. They are only able to provide the skills they possess through their Paramedic and specialized training provided by Dr. Panko for the K-9. The Paramedics that will be assisting in the care of the K-9 will attempt to seek further training from

the primary Veterinarian caring for the K-9. These protocols should only be used for the K-9 possessed by the Brenham Police Department.

The first K-9 owned by the Brenham Police Department is a Belgian Malinois. His current BPD Badge number is 3108K. He receives his commands in the Dutch Language. Officer Pierce with BPD will be the primary handler of this K-9. In the event that Officer Pierce is injured or unable to handle the K-9, Sgt. Todd Jacobs or Officer Klehm shall act as a secondary handler of this K-9 as they have both had previous K-9 training. Let it be noted that no one should ever show any aggression, including friendly aggression, towards Officer Pierce. The K9 will take this as a need to protect Officer Pierce and could possible attack.

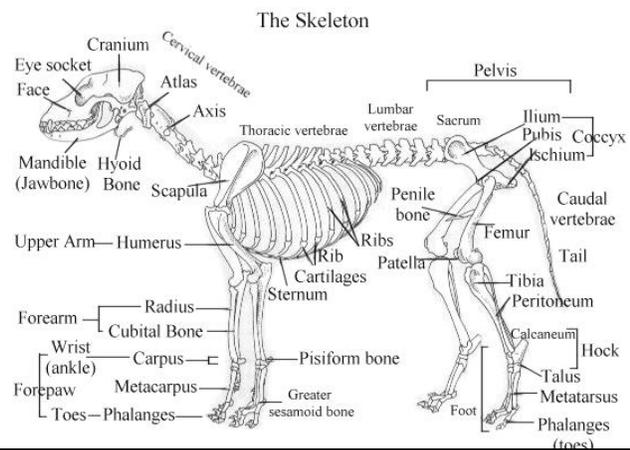
It is planned to keep Sammy at a weight of around 75lbs (34kg). His current Veterinarian is Dr Panko with the Brenham Veterinarian Clinic (979-836-2472). Dr Panko has provided Washington County EMS with his personal cell phone number (979)203-4661. In the event that Sammy is injured and requires transport by ambulance, the destination for this transport will be the Brenham Veterinary Hospital located at 2455 Hwy 290 W Brenham, Tx 77833. EMS will need to make every attempt to call Dr Panko and advise him that Sammy has been injured and is coming to his facility.

The second K-9 owned by the Brenham Police Department is a German Shepard. His current BPD Badge number is 3105K. He receives his commands in the Czech Language. Officer Klehm with BPD will be the primary handler of this K-9. In the event that Officer Klehm is injured or unable to handle the K-9, Sgt. Todd Jacobs or Officer Pierce shall act as a secondary handler of this K-9 as they both have had previous K-9 training. Let it be noted that no one should ever show any aggression, including friendly aggression, towards Officer Klehm. The K9 will take this as a need to protect Officer Klehm and could possible attack.

It is planned to keep Ronny at a weight of around 75lbs (34kg). His current Veterinarian is Dr Panko with the Brenham Veterinarian Clinic (979-836-2472). Dr Panko has provided Washington County EMS with his personal cell phone number (979)203-4661. In the event that Ronny is injured and requires transport by ambulance, the destination for this transport will be the Brenham Veterinary Hospital located at 2455 Hwy 290 W Brenham, Tx 77833. EMS will need to make every attempt to call Dr Panko and advise him that Ronny has been injured and is coming to his facility.

SWAT Medics will be required to do yearly Clinical Orientations with the Brenham Veterinary Hospital to update skills training. EMS SWAT Medics will also be required to review the vehicle that the K9 will be patrolling in to observe all of its functions as well. Let it be noted that the drivers side rear door is the door of choice to load and unload the K9's.

A specialized kit is attached to the molly system of the tactical entry bag for K9 medical care.



The skeleton is a jointed structure of bones controlled by muscles. It supports the whole anatomy and contains the central nervous system. It also stores minerals and marrow for the body's use.

These protocols will cover:

General Assessment
Signs of Shock
Heat Injuries
Wound Management
Venomous Bites and Stings
Splinting
Multi Trauma Injuries
IV access
CPR
Airway Management
Emergency Drugs and Algorithms
Additional Medications

General Assessment:

Rectal Temp – 101- 102F
Pulse – 80-120 BPM (Larger Breed 60-80 BPM)
Resp – 18-34 RPM
Gums – Pink
Cap Refill - <2 sec. (1-2 sec avg, check in the gum)

Signs of Shock: Early

Pale to white Gums
Dry Lips
Weak Rapid Pulse
Cool Extremities
Agitation/Restless
Collapse
Labored to Heavy Breathing
Rapid Heart Rate
Blood Pressure will be elevated or decreased depending on fluid loss.



Signs of Shock: Late

Dilated Pupils
Respiratory Depression
Cap Refills >4 sec
White Mucus Membranes
Rectal Temp <98F
Faint Pulse
Faint to No Menace (blinking of the eye when hand is moved towards it) Response
Weak Heart Beat
Purple Tongue
Cold Extremities
Decreased Blood Pressure

Heat Injuries:

K9's use their respiratory system to dissipate heat. Signs of K9 experiencing heat injuries are rectal temp of 105 – 110 F, Vomiting, Collapse, Ataxia, Red Mucus Membranes, Warm Extremities, Panting, Possible Purple Gums/Tongue.

Treatment goal is to lower the core temp.

1. Towel the dog off with Wet Towels
2. Fan Air
3. Stop cooling the dog when the rectal temp reaches 103F

Note: Do not give antipyretics!

4. Wipe Alcohol on Pads of Feet, Groin, and Axillary Area.

5. Run IV line through cool water and bolus fluid at 20-25mL/Kg. (monitor BP and Heart Rate)
6. Maintain O2 if needed.
7. Consider cold water enemas.

Wound Management:

A K9 will not be able to be definitively treated for wounds in the pre-hospital setting. A follow up or immediate transport to the primary Veterinarian will be required. Paramedics in assisting in the care of the K9 can assist with preventing further bleeding by:

1. Apply direct pressure.
2. Elevate the affected area.
3. Compress on the pressure points. Pressure points are located inside the proximal portion of the fore and hind legs. The pressure point on the tail is located on the underside of the base.
4. Tourniquets if necessary.

Venomous Bites and Stings:

Dogs may come into contact at times with venomous insects and snakes. This can cause edema with loss of airway. These injuries should be treated symptomatically.

1. Remove stingers.
2. Apply cool compress.
3. Administer Benadryl PO/SQ 1-2mg/kg
4. Administer Dexamethasone 2mg/mL at 0.2 – 0.4 mg/kg IV or as listed on bottle.
5. Fluid if necessary. 20-25mL/kg.
6. Assess for Shock

Snake Bites:

1. Be prepared to place an airway.
2. Treat for shock. Give Saline bolus 20-25mL/kg.
3. Immobilize the affected area and keep below the level of the heart.
4. Benadryl PO/SQ 1-2mg/kg
5. Dexamethasone 0.2-0.4 mg/kg IV or as listed on Bottle.
6. Transport for Antivenin care depending on the snake. Try to identify the type on scene.

Splinting:

Remember that unlike other injuries that a dog may receive, a simple fracture will probably not cause any sedation to the K9. Fear and agitation may be present in the dog's character. Be cautious of the dog trying to bite during care. It may be necessary to restrain and or muzzle the dog during splinting.

1. Splint in place unless grossly deformed. **If hard to place the splint, leave alone until assessed by veterinarian**
2. Be sure to splint the fracture and include the joint above and below the fractured site.

Note: Sam splints are ideal for splinting fractures on dogs.

If the dog is noted to be limping with no noted deformities, this could be indicative of a sprain or strain injury.

1. Apply ice to the affected extremity.
2. Administer Buffered ASA only 10-20mg/kg for pain and anti-inflammatory.
3. Rest the K9.

Multi Trauma Mechanism Injury:

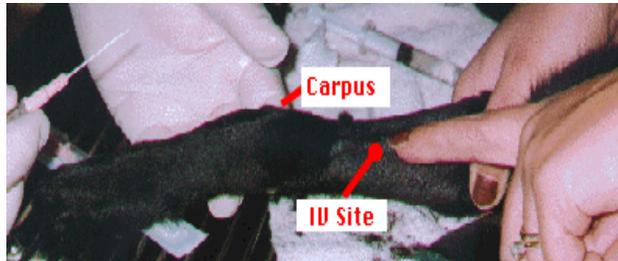
When a K9 receives an injury resulting from a significant MOI, spinal cord and intracranial damage should be suspected. To assess for the injuries, the Paramedic should note movement of all extremities. Also, check the dogs withdraw reaction by pinching the toe at the base of the nail. Watch for the dog to bite due to scared and natural reflex. Assess anal tone. The paramedic can check LOC by assessing the AVPU scale. Intracranial Injuries can be assessed by Menace, Pupillary Light Reflex, Position of Eyes, and Responsiveness.

Treating shock should focus on the basic principles of:

- ABC
- Adequate Ventilations.
- Hemorrhage control.
- Keep the K9 warm.
- IV fluids as needed.

IV Access:

When achieving IV access on a dog, Washington County EMS recommends using the cephalic vein. Remember that the skin is tougher than human skin and the veins will roll easier. IO access can be achieved on any flat surface of a bone. Saline will be the fluid of choice for Washington County EMS.



If signs of shock are present and volume replacement is needed:

1. Give fluid bolus of 20-25mL/kg using 22-18g IV cath.
2. Repeat until signs of adequate perfusion
 - a. Urine output of 1-2mL/kg/hr
 - b. Improved Mental Status
 - c. MAP of 80-90

CPR:

CPR may be preformed on the K9 during periods of cardiac and traumatic arrest. Hand placement will be just behind and above the foreleg/elbow on the chest wall where the chest is at its widest. Each compression should be 2-3 inches depth.

When providing ventilations:

1. close the dogs mouth
2. wrap your hands around the dogs snout
3. blow forcefully into the nostrils
4. look for the chest rise.

Note: Watch for the dog to bite if metal status is regained.

The CPR ratio should be 15:2.

Intubate for more effective ventilation. This may be easier to provide effective ventilations.

Airway Management:

Remember that a dogs trachea is larger than a humans. When selecting an ET tube, select one that is 1-2 sizes larger than calculated for the K9.

1. Place dog in Sternal position.
2. Wrap the tongue with a gauze and pull out of the mouth.
3. Depress the epiglottis with a size 3-4 miller blade in an anterior motion.
4. Insert the tube through the cords.
5. Secure with gauze.

Note: If having to induce paralysis on the K9, Sedate with 0.2 – 0.6mg/kg IV Valium. Paralyze with 0.22mg/kg of Sucs.

1. The Proper Tidal volume is 8-10cc/kg.

Emergency Drugs and Algorithms:

Standard ACLS guidelines should be followed. Drugs should be weighted based. If given a drug via ETT, then double the dose. Atropine 0.02 – 0.04mg/kg can be given for bradycardia IV, IM, or SQ.

Epi High Dose is 0.1 – 0.2mg/kg IV

Epi Low Dose is 0.01 – 0.02mg/kg IV

Defibrillation Sequence should be 100J, 200J, 360J. (use plenty of gel)

In case of a seizure or cocaine ingestion causing a seizure, Valium 1-2mg/kg rectal or can be given. Or IV Valium at a dose of 0.5 -1mg/kg. Valium concentration is 5mg/mL.

PO valium can be given at 0.25mg/kg for sedation if needed.

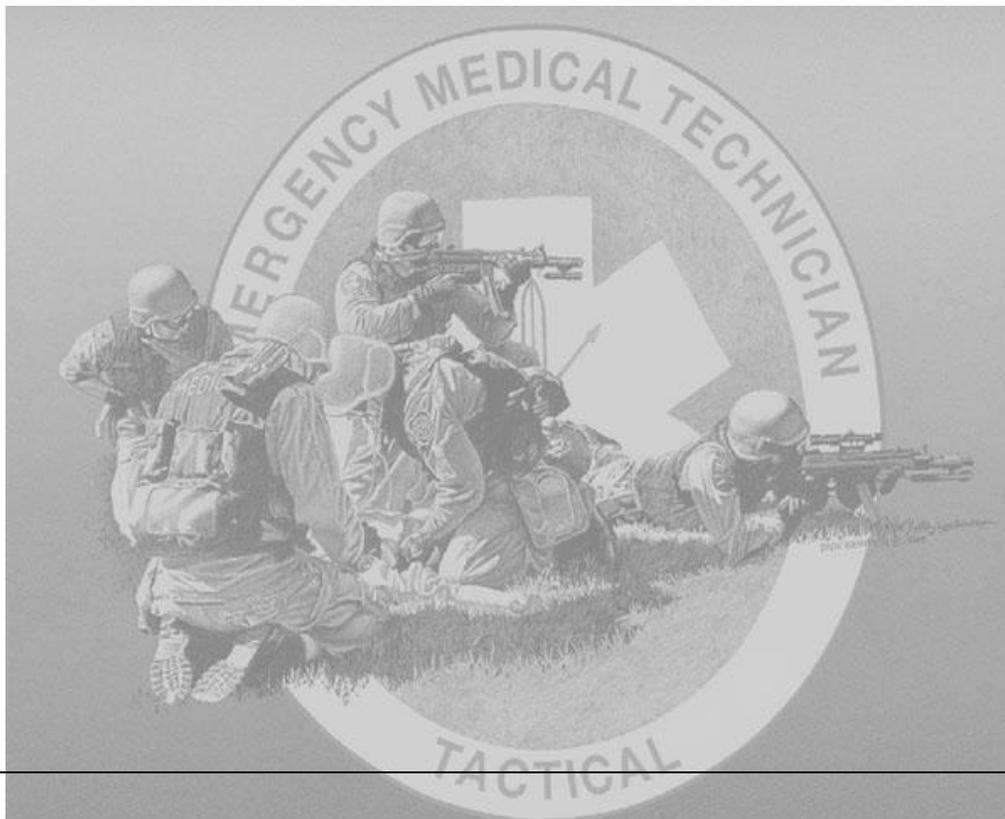


Additional Medications:

ASA (Buffered) – 10-20mg/kg

Morphine – 0.5 – 1.0 mg/kg IM, IV, or SQ for pain.

Fentanyl – Loading does 2-5mcg/kg IV followed by Infusion at 2-5mcg/kg/hr.



Washington County EMS Water Rescue Operations (WRO)

Introduction

As mentioned in the 2007 and 2008 annual report to Commissioners' Court the special operations division of the EMS Department has been working towards a functional water rescue unit for nearly two and half years. While our goal was to have a functional unit in early 2009 we (mid 2009) began the final stages of procurement and implementation phases of the program. In late 2008 we sent 3 paramedics to the TEEX Curriculum of Swift Water Rescue Technician level training. The three paramedics were the building blocks of the program. Armed with knowledge the division began consulting with leading experts in the field. We would like to thank two departments for their help in development of this program – Austin Travis County EMS and LCRA. They have been instrumental in the success of our program. Today the SOD Boat Rescue Program has swift water rescue technician paramedics, boat operator trained paramedics, and rope rescue technician paramedics that make up the BRT for Washington County EMS.

Purpose:

Establish a recognized professional water rescue component for Washington County. The County has two major water ways that over a million visitors a year enjoys for recreational purposes. The boat program will be the only *rapid response* boat rescue program servicing our area. Our goal is to be able to deploy a functional boat program to any area of our county within 5 minutes and have it on site within 15 minutes.

The primary purpose of the program is to access, assess, and treat anyone who may become injured, stranded, or need assistance on the waterways or during a flood within our jurisdiction. The secondary goal is to be able to provide assistance to any public safety department such as the Sheriffs Office, TPWD, or any other department who may require a boat to access or perform certain job related duties (such as a search for potential victims or violators).

The department will extend training offerings to all public safety groups in attempts to make this program even more successful. As we all know our departments are understaffed and the more people trained in operating this program will allow a more responsive unit.

Our long-term goal of the program was to be not only an asset to Washington County but the State by becoming a task force water rescue component as well. This has been accomplished as well.

Crew Configuration: Unlike some water rescue boat teams our program will always have the ability to deliver the highest level of pre-hospital care in the State of Texas. One **rescue paramedic** within the division will **ALWAYS** accompany the boat in any response mode (recovery, search, rescue, evacuation, etc..). A minimum of 2 BRT Members are required for daytime operations and a 3 BRT Members for night operations (BO – Boat Operator, AB – Agile Bowman, and RA – Rescue Attendant / Swimmer).

Deployment (when):

The Water Rescue Division will deploy during any water incident where the program may enhance operations on the scene. The initial responding EMS, FD, or Law Enforcement units should request the boat as early as possible during any drowning, accident, or potential injury on any waterway. This includes ponds, lakes, or flood prone areas. The department will also stand up a strike team to staff the boat during any potential natural disasters such as impending Hurricane, flash flooding, or even the *potential* to have flash flood. The RP's and Boat Operators will also be required (as other areas of the division) to perform quarterly training. Typically this will be performed with the boat on Lake Somerville or by deploying into the Brazos River. The division

will attempt to use days when high waterway usage is expected in our region (Labor Day, Memorial Day, etc...) for these days. As to provide a faster response to potential victims.

Standards:

The special operations division will not stray from our belief that training is paramount for these special operations. The water rescue operations **will be no exception**. The boat operator does not necessarily have to be an EMS employee. However, only an EMS employee will be authorized to trailer/tow the boat unless authorized by WCEMS Command Staff. The County departments are small therefore, it's important to allow other public safety departments the opportunity to assist in these operations. For that reason we gladly welcome any Fire Department, LEO, or other public safety department into our training opportunities. However, we **do not** believe lowering any standards benefits the program and in fact may risk ultimate failure. Any department wishing to assist with staffing will be required to complete the same standards set as listed below. The boat will be deployed at all times with a "Boat Operator" and a WCEMS "Rescue Paramedic".

Static Water Rescue:

The boat operators who operate the boat will complete the following requirements (NOTE: **if the boat is deployed into swift/moving water than all occupants in the boat must be certified swift water technicians**)

- Maintain Special Operations P.T. standards and other standards for SOD division.
- Maintain Division Specific Functional Fitness Standards
 - 300 meter swim in 8min or less
 - 10 min of treading water
- Completion of WCEMS Boat Operator Day 1 Training.
 - Successful Completion of the departments Zodiac Hypalon Boat In-service Training
 - Successful completion of the boat operators training for static water.
- Perform 8 hours of zodiac boat training every year.
- Haz Mat Technician Level Training that must be maintained by a yearly 8hr refresher course.

Dynamic Water Rescue:

The rescue paramedics (RP's) who staff the boat during Dynamic Water Rescue response will be required to successfully complete the following requirements along with the above requirements:

- Must maintain all above specified competencies.
- Maintain Division specific Competencies:
 - **25 meter rescue swim** (Participants must swim with PFD on, then they will swim 25meters to a floating manquin, they will then rescue swim 25meters back to starting position)
 - **50meter full gear swim** (Participants will don all equipment including dry suits helmet, and PFD and then swim 50meters)
 - **Boat Flip** (Participants will start out in the boat. Time starts when the boat is flipped upside down. Participants will have to upright the boat and get back into the boat. Once in the boat, time will stop)
 - **50/50 swim with Life Jacket** (Participants will don a PFD, they will offensive swim and defensive swim the length of a pool two times)
- Completion of WCEMS SPECOPS Orientation training program for Water Rescue Operations by the Division Specialist.
- Successful Completion of Rescue Clearance To Practice (RCTP) Competency Forms that apply to the Water Rescue Division.
- Successful Completion of the departments Zodiac Hypalon Boat In-service Training
- Applicable (open/swift) Boat Operators Course

- Technician level knowledge and competency as outlined by National Fire Protection Association (NFPA) for Swift Water Rescue Technician Level Training.

As of May 28, 2010, the department boat based rescue operations became a functional part of the Texas Task Force 1 water rescue division. Any member of the SOD that wished to become a part of this deployment process must also have Technician level knowledge and competency as outlined by NFPA for Rope Rescue Technician Level Training.

SCOPE

During the past several years, there has been an increase in the number of water rescue incidents in the Washington County area. This is in part due to the continued influx of people unaware of the dangers associated with large volumes of water. Water rescue incidents generally occur because victims either knowingly enter the water, or otherwise find themselves in the water and unable to remove themselves from the dangers associated with that body of water. There is always a possibility of more victims becoming stranded because of the good intentions of caring citizens, and/or untrained rescue personnel, trying to help. The scope of the WCEMS BRT is designed to provide rescue to potential victims in static and dynamic water environments. It is outside the scope of SOD/BRT training level to perform any ice, dive, and surf related rescue. (NFPA 1670 9.3.2) (NFPA 1670 9.4.3.4)

PURPOSE

Water Rescue operations present a significant danger to Rescue personnel. The safe and effective management of these types of operations requires basic to very specialized considerations. This procedure identifies some of the considerations that must be included in managing these types of incidents. It shall be the policy of the Special Operations Division of Washington County EMS to not allow any personnel to participate in water rescue activity without the use of proper safety equipment and training.

DEFINITION

For the purpose of emergency response, a water rescue shall be defined as any incident that involves the removal of victim(s) from any body of water other than a swimming pool. This shall include rivers, creeks, lakes, washes, storm drains, or any body of water, whether still or moving. (NFPA 1670 9.2.3(1))

TACTICAL CONSIDERATIONS

All potential water rescues will be dispatched as water rescue (WR). A usual dispatch will include first out Medic Unit Response, EMS Command on Call for SOD (special operations divisions) boat rescue deployment, along with the local FD for other technical rescue resources. The first arriving unit will also assess access to the water and inform responding SOD Team. The WCEMS SOD Boat Rescue Team will be staffed with two appropriately trained (Boat Operator, SWRT, Rope Rescue Tech) (NFPA 1670 6.3). A water rescue assignment will include one EMS Command Officer. (NFPA 1670 9.2.3 (2)) , (NFPA 1670 9.2.3 (4))

Due to the potential danger of these types of incidents, it is imperative that the first arriving senior officer assumes command and a joint command structure is utilized due to multi-entity response required.

For any personnel operating in the hazard zone, the minimum PPE for rescuers will be:

1. Appropriate PFD
2. Thermal Protection if required
3. Helmet Appropriate for water rescue operations
4. knife or wire snips
5. Whistle
6. Contamination protection such as dry suits, gloves, etc...if indicated.

BRT Members and Swiftwater Rescue Paramedics should always take a PFD device to the victim when approaching. Never assume the victim already has one on.

All Boat Operators and BRT Members will have the training and ability to assess moving for safe and unsafe characteristics for safe operations. Examples of water characteristics and features that should be identifiable include eddies, downstream/upstream "V"s, standing waves, laminar/helical flows, confluence, cushion/pillows, and swift-water classifications. (NFPA 1670 9.3.6(1)).

COMMAND RESPONSIBILITIES

After assuming Command, Command must secure the immediate area and assure that no more citizens enter the water. Well intentioned, untrained citizens can quickly become victims. (NFPA 1670 9.2.3 (5)) A detailed interview with witnesses should be performed. Separation and isolation interview techniques should be utilized. (NFPA 1670 9.3.5 (1)) Command must identify the problem and make a decision whether to operate in the rescue or recovery mode. (NFPA 1670 9.2.3 (7))If operating in the rescue mode, Command should consider all of the potential hazards to rescuers and victims.

Command should consider the risk/benefit factor. A risk/benefit factor is a subjective decision that weighs the benefits of what is to gain versus what can be lost if the worst happens. If the benefit is high, and the risk to rescuers is low, Command should move forward with the action plan. If the risk is high to rescuers and the benefit is low, Command should discuss with the Boat Rescue Team and EMS Command to develop an action plan to make recovery. (NFPA 1670 9.2.3 (6)) Command shall identify and establish a hot, warm, and cold zone for the incident, using the following criteria:

- Hot zone shall be the body of water;
- Warm zone shall be 25 feet from the edge of the water;
- Cold zone shall be the area beyond the 25-foot mark;

If Command is operating in the rescue mode, a quick assessment of the hazards associated with the water must be made (i.e., speed, temperature, hydraulics, debris, and possible contamination) (NFPA 1670 9.3.9.2 (1)) .

General hazards associated with water search and rescue operations can present the Rescue Paramedics at Washington County with uniquely challenging situations. The Command Staff and BRT should consider the following potential hazards during real and simulated training to its members.

(1) *Utilities*. (which include electrical, gas, propane, or any other type of utility)

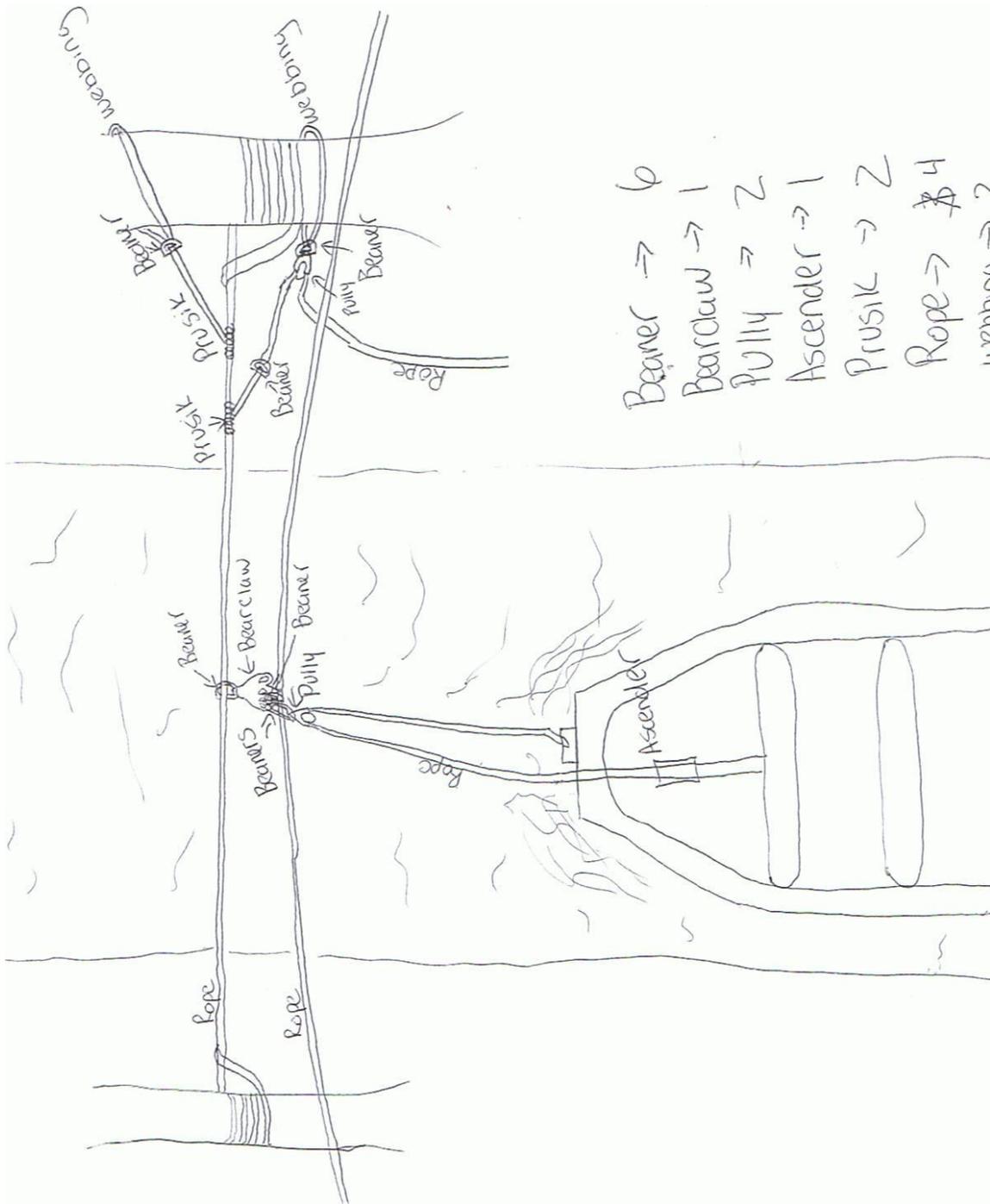
(2) Hazardous Materials and Personal Hazards: should be looked for during a water rescue event. Personal hazards such as trip points that can cause seemingly insignificant falls can put an entire BRT out of service. First arriving units should inspect the ground and shoreline not only for rescuer potential injury but also for boat puncture possibilities.

If the victim can be seen, Command should determine if the victim is in immediate life-threatening danger or is relatively safe and secure for the moment. If the victim is in immediate life-threatening danger, rescue must be quick. The BRT will be trained in able to employ rapid extrication of accessible victims and deploy rapid rescue plans for those that are not easily removed from the environment. (NFPA 1670 9.2.3 (6))

Rescue options will be considered and executed in order from low risk to high risk. The least invasive way to solve a problem (rescue) is usually by talking the victim to safety. This should be the first approach analyzed by the Command Staff and SOD. However rescue teams are developed and deployed due to unreachable victims that cannot self rescue and the order of low risk to high risk rescues will be: "**Reach-Throw-Row-Go-Helo**" shall be the proper order of execution to effect rescue. If possible, Reach the victim with whatever means possible (i.e., pike pole, stick). If the victim were too far out in the water to reach something, Throw would be the next option available. Throw the victim a throw rope bag. All Boat Operators that participate in the County EMS Boat Rescue Program shall be proficient in rescuing victims utilizing a throw bag. The victim should grab the rope, but not tie it around himself/herself, and the rescuer will pendulum belay victim to shore. If the victim cannot be reached by means of Reach or Throw, Command should consider waiting for the swift water tactical rescuers before committing personnel to the rescue.

The Boat Operators and Rescue Paramedics that are a deployable part of the SOD will be trained by TEEX / USAR and train frequently in tension diagonals, zip lines, as well as self rescue and survival swimming techniques. (NFPA 1670 9.3.9.2 (2,3,4))

The following is a one example of a rope system utilized with the BRT to remove victims from hazards such as low head dams, vehicles partially submerged, etc...



Beamer → 6
 Beardlaw → 1
 Pully → 2
 Ascender → 1
 Prusik → 2
 Rope → 4
 wearing → ?



This SOG is only a guideline and there are multiple types of rope systems that can and does work it is the responsibility of the BRT and SOD to know, understand, train, and be able to deploy these systems should the need arise. (NFPA 1670 9.4.9.1 - .2) It will routinely be a BRT and BFD (or primary responding FD) Rescue decision as to the type of rope system used for rescue. However, the BRT will attempt to train routinely with BFD or other rope rescue departments to make it a smooth and successful rescue.

The following options are considered technical high-risk operations that require specialized training and equipment. Row is the next rescue operation for consideration. Boat base operations can be a safe and effective means of rescue with proper training and equipment. The Washington County Boat Operations Program is designed to be a rapid and safe rescue option. Literally hundreds of hours of training are required and indicated for safe boat operations. If the WCEMS Zodiac Hypolon inflatable boat is not available, Go should be the next consideration.

Any time a rescuer is placed into the water to effect rescue, it is considered to be a dangerous operation. Rescuers can be at extreme risk. Prior to placing a rescuer in the water, Command and the rescuers involved should consider the risk/benefit factor again. Downstream safety operations should be deployed at this time. If the hazards associated with placing a rescuer in the water are too high, Command should consider the use of a helicopter (Helo). These are extremely time consuming rescuers and typically the victim does not have that type of luxury.

If a water rescue operation turns into a long technical operation, Command should consider sectorization. Command should consider the need for the following groups during swift water or search operations.

Upstream Group. This group consists of personnel whose responsibility would be to watch for and advise Command of any obstacles and/or hazards (i.e., top loads, suspended loads) that may be floating downstream and may hinder the rescue operation.

Downstream Group. This group consists of personnel whose responsibility would be to be prepared to rescue victims and rescuers that may be swept downstream. All personnel in this group should have a throw rope bag in hand. There should be downstream personnel on both sides of the river.

River Right/Left Group. Command should assign personnel to the opposite bank that the operation is being conducted from. Personnel assigned to this group will be responsible for rigging the opposite end of a rope rescue system being set up.

Rescue Group. Personnel assigned to this group are responsible for developing an action plan with Command that is within the scope of the training and SOG's of this manual. Once the action plan has been developed, rescue group will be responsible for executing the plan in the safest possible manner.

Resource Group. Command should assign one individual from the BRT to Resource Group. Resource sector will be responsible for securing and assigning any equipment needed for technical rescue operations. Resource Sector will be responsible for retrieving and inventorying any equipment issued for the operation. Resource Sector will log all rope used for the operation on the rope log cards assigned to that rope.

Medical Group. Personnel assigned to Medical Group will be responsible for providing ALS treatment to victims removed from the water. This will typically be an assigned and dedicated WCEMS Medic Unit that is solely responsible for the patient care once the patient is in the warm zone (out of the water).

BOAT BASED SEARCH OPERATIONS

The water rescue division of Washington County will utilize multiple ways to assist in a water borne or shoreline assist search for PIW's (person in the water) or lost vessels. The type of mission will ultimately dictate the type of search but ultimately it will be the responsibility of the Boat Operator or Command Officer. A risk / benefit analysis among the boat crew and command should be performed. It is acceptable for daylight boat based searches in static water to be accomplished with a two (2) person boat crew (a Boat Operator and Agile Bowman both trained to WCEMS standards). However, if night operations are performed then a three (3) person crew is mandatory. WCEMS will utilize the accepted US Coast Guard Search Patterns for boat based searches unless otherwise directed by command staff.

The two most commonly utilized search patterns that WCEMS will utilize is the (1) trackline search and (2) Victor Sierra search patterns. The VS search pattern is termed a "sector search pattern" and will be used when datum is established with a high degree of confidence but the search object is difficult to detect, such as a person-in-the-water. The search unit passes through datum several times, each time increasing the chances of finding the object. The pattern resembles the spokes of a wheel with the center of the spokes being datum. Datum should be marked by the first arriving search crew as early as possible by a Data Marker Buoy or other floating device. This provides a navigation check each time for the boat operator and allows for proper drift of the victim or lost vessel. There are 9 legs in the search pattern. Should the object still not be found the crew should re-search using the same pattern only shifting the starting point 30 degrees to the left.

The other type of search pattern is called the trackline search. This search is good for a missing object that was known (or thought) to be traveling between two distinct points.

Crew Configuration and Responsibilities:

For boat based search operations there shall be a minimum of three personnel on board for night operations. At the discretion of the Boat Operator it is acceptable to utilize 2 trained crew members during daylight searches. (AB, RS, and BO).

- The agile bowman's primary responsibility is to "search" visibly for the victim and objects in the water.
- The "rescue swimmer" will be assisting the boat operator in the search pattern layouts and heading directions along with visibly searching the water or shoreline.
- The "boat operator" has the primary responsibility of overall crew safety and operation of the boat.

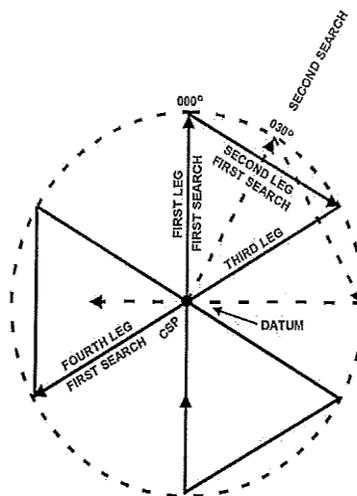


Figure 15-11
Sector Single-Unit (VS)

**Standard Operating Guidelines
Johnson Training Tower – Rappel & Technical Rescue
Facilities**



Purpose:

The Johnson Training Tower located at Washington County EMS was designed to meet several needs within the EMS Department. We believe a “Rescue” is not a proprietary responsibility of any one agency or department. It is a multi-discipline operation and requires the involvement of a variety of emergency response agencies to effectively and efficiently care for a victim or patient. History has shown us many times over that the earlier advanced care is initiated the better off the patient will do. We believe this Tower will allow for that very thing, multi-disciplines training together for the betterment of their fellow man. Most of what we do in EMS is in confined areas. With that said, our goal is to use the tower for normal EMS training evolutions to include moving spinal immobilized patients using long spine boards up/down stairs, using stair chairs and rescue tarps to facilitate moving of patients along with performing advanced life support procedures while working in confined spaces. In addition to this we plan on incorporating the tower into our new hire process in lieu of using cub stadium stairs. This will prevent travel and allow our entire hiring process to be performed on location. In addition to this our Special Operations Rescue Paramedics are trained in many technical rescue disciplines including technical rope rescue at the NFPA Technician level. The goal of the Rescue Paramedic is to gain access to the patient within 5 minutes of arrival, treat at the advanced level during the rescue evolution and proper care for the patient during transportation to the medical facility. This tower will allow for proper in house competency testing of all these skill sets. Our Swift Water Boat Operators are also dual trained at the Water Rescue Technician Level and Rope Rescue Technician Level. These highly trained Paramedics are a member of TTXF1 State Water Rescue Division and must also stay competent in many technical procedures. The design of the tower was specific to allow all of the above competencies to be trained accordingly. The Facility has also specifically been designed to allow for multi-agency training with the Brenham FD, Brenham PD, and any other public safety needs.

The following SOG’s are to assure proper safety precautions are utilized while performing training evolutions using the Johnson Training Tower at Washington County EMS. We believe that high risk low frequency training is a must. Our philosophy is the things you do more you train less for and the things you do less you train more for. For this reason we have developed guidelines that shall be followed unless direction from the OIC (officer in charge) or EMS Director states otherwise. High risk training is inherently dangerous and it is understood that extreme dangers call for extreme caution. This is no different than gaining intravenous access on a HIV + patient. You know the risk is high therefore you take all necessary precaution to prevent any contamination. However, even with the best safety regiments there are times when accidents will occur. The training performed by the Special Operations Division (SOD) is no different than this example.

Facility Description:

The Johnson Training Facility was made available by the generous donations of late Roberta Cole Johnson of Brenham Texas. The main tower is a 4 pole tower constructed of 55’ poles with a top deck of approximately 38’ in height. The tower has a full decked wall with a simulated window on the second. The decked rappel wall has multiple

climbing hand grabs to allow for simulated rocky environments. A center stair well is in the middle of the tower to allow for ease of access to both the 38' top deck and the approximate 25' middle level deck. Multiple "bomb proof" anchor points are positioned on both the upper and lower levels. The lower level is designed to allow for pick-offs, confined space training, SWAT Tactics and multiple other evolutions as well. A two pole satellite tower also designed with 55' poles with a top platform for free rappelling at approximately 38'. The two structures are connected with a 35' horizontal pole which will allow for multiple types of traverse rescue operations including highlines. The towers will be secured for general safety by a locking door and decked walls up to 12' to preclude the general public from accessing the towers without a key. Both structures have a roofs, cantilever systems and lifting boom capabilities. The towers are engineered approved and will undergo a rigorous annual certification process.

Safety:

Safety is of paramount importance to all SOD Members involved in technical rescue or technical patient access operations. A safety briefing will be conducted before all training evolutions performed on this site. Just as any other operation, a completed Incident Action Plan (IAP) must be completed and signed by the SOD Lt, EMS Captain or the EMS Director prior to engaging in any training exercises at the Johnson Training Facility. It is recommended that this form be completed 24 hours in advanced. However, it is understood that this may not be possible at all times. Safety will be stressed constantly throughout the training evolution. Any individual, regardless of rank, is obligated to stop training if he/she observes an unsafe act. All rescuers will observe the following procedures:

- a. Loose clothing and equipment will be secured
- b. All knots will be tied by the individual and checked by the OIC prior to each rappel or evolution.
- c. Rescuers will climb the tower or move to the edge of the rappel site only when told to do so by the OIC.
- d. On the tower all rescuers will be "clipped" into safety line guide wires and only at the OIC command direction will unclip only from safety lines.
- e. A safety line will be kept on top of the tower at all times during training evolutions. This line will be for the OIC to make any rescues of students during an evolution should an incident occur.
- f. Gloves, helmets, and appropriate PPE will be worn while performing training using the Johnson Training Facility
- g. All ropes & harnesses will be inspected after each evolution and logged or removed from service if deemed necessary by the OIC.
- h. A safety line (rope) will be utilized during any vertical rescue operation. Only single rescuer operations (such as rappels / pick-offs) etc... shall be

permissible to utilize only a single rope. However at the OIC discretion these activities may also use safety lines depending on the comfort level of the training and expertise of the individual rescuers and OIC.

- i. The OIC will have proper communications on his/her person at all times during the training evolution.

Tower Inspection:

Washington County EMS will conduct a yearly safety certification of the rappel tower and facilities. A team comprised of the Rope Rescue Inc. Inspection team and the Special Operations Lt. / Tower Instructor will conduct the inspection. An annual certification will be awarded to the tower by the safety division of Rope Works Inc.

Personnel on-site required for training:

Officer In-Charge: For any evolutions with WCEMS Rescue Paramedics at the Johnson Training Tower an officer In-charge must be present. An officer in charge is tasked with the overall safety of the entire operation. An officer in charge must have completed the tower instructor course (**TIC**), be technician certified in technical rope rescue, and have a perfect score on the LRO Competency skill sheet for WCEMS. It will be made very clear on the IAP form as to who the OIC is. This is extremely important when evolutions are performed with multiple personnel who qualify at the OIC. The OIC is responsible for letting the on duty Lieutenant know of the training and evolution and assuring all IAP Forms are completed for the evolution.

Belay Control Officer: Must be ropes rescue operations level certified and have received a belay and evolution briefing from the OIC. There will be a belay control officer on each rope during ALL rappel or technical operations.

Paramedic: Must be certified TDSHS and currently cleared to practice with the WCEMS Department. Must also have ready bag or equipped Command Vehicle on site.

When outside public safety agencies is using the tower for training evolutions they must have an individual **trained up to the OIC standards or have a WCEMS OIC Trained individual on site** for the entire evolution.

IAP - Purpose: The purpose of the SOD/IAP form is to have a proactive plan that will enable the department to solve any unfortunate accident(s) that could occur during a live training evolution / field training exercise (FTX). The IAP should be filled out by the Senior Special Operations Paramedic or Command Staff. A copy of the IAP should be given to the Special Operations Division Lieutenant twenty four (24) hours in advance of the training to receive appropriate signatures authorizing the evolution.

WCEMS-Special Operations Division Incident Action Plan (IAP)	1. Incident Name	2. Date Prepared	3. Time Prepared

4. Operational Period (Date and Time)			

5. General Control Objectives for the Incident (include Alternatives)			
1			
2			
3			
4			
5			
6			
7			
8			

6. Weather Forecast for Operational Period			

7. Explain what Safety Precautions that will be taken during the FTX:			

8. Catastrophic FTX Failure: Explain the steps that will be taken should a serious emergency occur during the FTX			

ICS-Equivalent (202)	9. Prepared by:		10. Approved by (Lt. or Command Staff))

