

An OVERVIEW of Response to TLAER Incidents

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INTRODUCTION - TLAER™ (Technical Large Animal Emergency Rescue) scenarios occur all over the world, in daily use of animals as well as in disasters. Scenarios may require specialty training, equipment and understanding of large animal behavior to properly extricate the animal. But it is possible to provide assistance to animals in many scenarios with field expedient equipment and hand tools. It is the understanding of animal behavior and appropriate use of the animals' anatomical features that contributes to greater success than knowing how to cut with a tool.

EVERY DAY EMERGENCIES. Every day, large animal emergencies occur somewhere in the world. The lay person thinks it is all about getting the animal out of its predicament. But it is also about the victim's medical status and the provision for safety of the responders.

It is **CRUCIAL** to build a relationship with your local emergency responders. They have equipment and resources that you will not have to deal with on TLAER scenarios – especially barn fires and trailer entrapments. Coordination with Local Emergency Response is important to begin a relationship **BEFORE** the disaster or emergency. This could be training events, attending meetings or drills, or as simple as making an appointment to tour the local firehouse and for them to tour yours. They should be invited to your facility to evaluate it and make recommendations on evacuation procedures and response to barn fires. Training and equipment is always a challenge for emergency responders to provide for their staffs, you might be able to provide a short training course of TLAER ideas for them at your farm.

SCENARIO: A llama attempts unsuccessfully to jump a fence, landing on top of the fence over a wire that is electrified. He is found at morning feeding time – it is unknown how long he has been there overnight. What are you going to do if you were the owner? Would your first call be to emergency responders? Who else on the farm can assist? What is next?

SOLUTION: Turn off the electric fence, and place a halter and lead on the llama for guidance and control. Then cut the fence with appropriate tools – by cutting the bottom rail, first then the middle one – the animal cannot get any more injured by them, and minimizes chance of injury to you. The top fence rail will still holding up the llama; cut it last and allow the animal to move forward. Medical attention will be needed for this animal – it will be severely stressed and is at high risk for penile injury.

The Semantics:

Trapped / Extrication Technical Rescues are not the same as the *Neglect/Starvation Rescues*. Neglect/ Abuse/ Starvation Rescues occur worldwide and may require the expertise of emergency responders that are trained in TLAER™, but demand heavy skill sets, specialty equipment and significant logistics. The best example is the recent incident in Montana, where over 700 neglected Camelids were awaiting help, and another in Montana in the same time period – where over 700 horses were abandoned and awaiting assistance.

Insurance – for animals that are insured (especially exotics, valuable breeding animals, horses) you should request that the insurance company be contacted – and although in most jurisdictions the opinion of a veterinarian is sufficient for disposition (first aid, euthanasia, or definitive treatment). However – the insurance company DOES NOT drive the incident scene – they simply should be taken into account. They will want pictures and evidence as well as police reports, veterinarian comments, etc. There are numerous large animal ambulances operating in the US that charge a fair fee for their services at the rescue scene, as well as transport to definitive veterinary care.

Legal Responsibilities of Owners – animals are property, life, and environment – all things that the fire service is sworn to protect. But YOUR animals are the LEGAL responsibility of YOU. For those reasons – owners are encouraged to have a plan for evacuation, shelter in place and transportation of their animals in an ALL HAZARDS protection and response plan.

The PURPOSE of large animal technical rescue is to “*Move the victim without causing harm to the victim or the rescuers*”. Seems simple, doesn’t it? Sometimes that is what gets people in trouble on incidents, by ASSUMING that it is simple. Many incidents are very difficult to solve. Be realistic and be prepared that animals MAY DIE despite your best efforts. But they WILL DIE if you do not make the effort.

The problem is that animals don’t realize humans want to help them live, their instinct tells them they can only rely on themselves and their reactions for survival. Successfully convincing animals (especially Camelids) to do something “your way” often requires a reverse psychology and PATIENCE is the key to gaining the animal’s trust.

Animal handling skills are crucial. Animals are predictably UNPREDICTABLE, especially in rescue environments. As an example, *Opposition Reflex* results from pulling on the head of any animal - they pull back. This is an ineffective technique and the biggest mistake that most animal handlers make. It actually will result in the animal fighting HARD against any efforts to guide them in a particular direction. Halters are for GUIDANCE and DIRECTION, not as a handle or anchor point.

The two biggest obstacles on TLAER scenes:

- Frantic, distressed owners and bystanders (DON’T BE THIS PERSON!)
- Emergency response personnel that are inexperienced in large animal rescue aspects

CALL IN the Professional Emergency Responders

- Extricating PEOPLE victims
- Providing expertise in heavy and special rescue scenarios
- Providing exposure protection for rescuers on scene
- Setting up and running Incident Command normally falls to them based on jurisdiction authority

- Setting up scene security, restraining irrational people
- Regulating traffic flow around wrecks and incident scenes on the road
- Providing humane field euthanasia to animals determined to be dangerous to humans or unsalvageable medically, or under advice of a veterinarian

CALL IN the Veterinarian and Staff

- Triage animal victims, sedate animals if indicated
- Initiate first aid and treatment if possible
- Direct emplacement of equipment (halter, webbing, slings, etc.) on animal
- Report to Operations officer and liaison with animal owner (if present), may not be used to working under Incident Command structure.
- Providing humane euthanasia to animals determined to be dangerous to humans or unsalvageable medically.

Role of Large Animal Owner ON SCENE - Animal care is the ultimate responsibility of the OWNER, your prevention and preparation will minimize the effects of any disaster on animals. There are many people who will refuse to leave without their animals, and consider them to be their children.

Understand that owners may be frantic, irrational, frightened, feel helpless, and very angry with themselves as well as the situation. Typically, people in these emotionally charged situations have poor decision-making skills and may say accusing or mean things to responders trying to assist the animals. Sometimes the owners have guilty realizations that it was something they did or failed to do that caused the animal to get into the situation (left the gate open, drove the trailer recklessly, dropped a cigarette butt, etc.) and this can lead to them being very depressed.

Owner WILL be emotionally upset, try distracting them to talk with a person and ask them questions, ask them to stay out of the incident scene operations area, or asking them to stay with the veterinarian to discuss the animal's issues / status. Give them a task to complete that will assist with the rescue effort (tell them to call their veterinarian, get hay and grain to feed to animal, get a blanket or hot water and towels) to distract them from what is going on with the rescue effort.

MAKE A DECISION: CHOOSE SELF RESCUE or TECHNICAL EXTRICATION RESCUE

Self Rescue: These are simpler rescues that allow the animal to assist with its own rescue, to make egress from some type of confinement. It might require rescuers to remove obstacles such as trees that are blocking the path to firm ground or safe egress. Self rescues feature the use of assist devices on the body of the animal to assist with the animal's movement towards safe ground. Since prey animals need their legs to move and use their head and neck to balance, pulling on anything other than their body will cause them to fight your efforts. Note that an animal must be physically capable of self rescue with assistance – geriatric, exhausted, and medically compromised may simply lay there and not use their musculature to move.

Technical Extrication Rescue: The rescues that require more than simple removal of obstacles around the animal and making a path out of the incident are called technical rescues.

- Trench (any area of confined space with mud or dirt that requires shoring of the sides before going into that dangerous space with the threat of collapse or subsidence)
- Vertical Lift (requiring overhead and mechanical systems or equipment to effect the physical removal of an animal up and out of a rescue scenario)

- Confined Space (technical rescue of the animal involves going into spaces that are difficult to enter and to egress, or feature poor lighting, hazardous gases, and obstacles)
- Low/High Angle (rope rescue systems are utilized to move a victim that is inaccessible with any other method – such as down a sinkhole or on the face of a cliff)
- Structure Collapse (involves going into areas where failure of an overhead structure such as a building, wall or component has occurred or has the possibility of occurring – such as overloaded snow barn roofs or an overturned trailer being cut up to access animals)
- Unstable Ground (any ground surface that will not support the weight of a large animal or rescuers – includes mud, septic tanks, and surface ice rescue components)
- Water (rescues that occur in flat water, swift water, and tidal areas)
- HAZMAT / DECON (rescues that occur in or near hazardous materials such as gases, liquids)

These types of rescue are considered by the Fire Service worldwide to be very dangerous and require specialty training, certification and equipment to participate in. Interestingly, Large Animal Emergency Rescue often involves one or more of these types of rescue.

There are only a FEW forbidden methods of TLAER extrication (considered so because they can cause severe injury or death). These are:

- Ropes around the head, or neck
- Failing to protect the head during a rescue attempt
- Ropes around legs without padding
- Pulling entire animal by the tail
- Winches attached to any body part
- Chasing animals
- Dragging on abrasive surfaces (gravel, asphalt, etc.)
- Incorrect landmarks for a field euthanasia attempt
- Tying an animal on a TLAER scene, and/or leaving animal unattended

Trailers ARE Confined Space and Structural Collapse Rescues

Stabilization of trailers even if they are on a flat surface is required for all scenarios, and especially for a trailer that might be almost on its side against a tree or embankment, and can be simply arranged with lumber and webbing straps. Do not allow anyone into the trailer or under / near the trailer until it is stabilized and cribbed with lumber so that it doesn't fall on a person or shift with the weight of horses / cattle moving inside.

An External Approach to accessing the victims in a trailer is preferred because safety for humans is paramount. This method requires more specialized equipment as extensions of the arm (poles with attachments for cutting, etc.), some cutting equipment, and perhaps sedation of the animals. An Internal Approach where rescuers go into the trailer is a faster method, but without sedation of the animals first, can compromise safety for humans and increases stimulation of animals inside. Sometimes a combination of both methods works best.

Never open the back doors until there is a plan for containment if the animals as they get out. The inside of an overturned or wrecked trailer may be very different from what you are used to. Consider that often the top animal(s) will be crushing down on the bottom one(s) and that the windows that are now the floor and obstacles inside the trailer become destructive to legs that fit through them. Animals that are tied may be

handing from the roof, or tied to the floor. Rescuers must make access carefully to allow animals that can get up and move to get out into secondary containment.

Trailers will be overturned in cross-winds higher than 35 mph, or slick ice conditions. Trailers may be trapped in evacuation traffic, have engine problems, run out of fuel, etc. In disaster scenarios, “Simple” emergencies like a blown tire or running out of fuel can have significant effects on traffic and evacuation efficiency. A fundamental issue with accident prevention is that many owners do not perform preventative maintenance on their transports.

Barn Fire and Wild Fire Rescue:

What it takes to make a fire: FUEL, OXYGEN and an IGNITION SOURCE. We can't do much about the oxygen, but we can limit fuel (hay, straw, combustible fuels, wood) in barn management and design, and minimize ignition sources (cigarette butts, flames, electrical sparks) in barns and around facilities. Barn fires are one of the most common local emergencies to affect Camelid owners. PREVENTION is actually the only way to combat these situations due to the danger of entering burning buildings and the rapid propagation of fire in agricultural facilities. Only certified fire fighting personnel should be entering burning buildings because they have training, equipment and airway protection to do so.

Barn Fire Rescue as shown in the movies usually involves an Inside Aisle Rescue where the person saving the animals run down through the barn and leads them out. Although this appears to be a fast method of extrication, it is VERY dangerous, and cannot be recommended due to the chemistry and physics of fire spread. Fires increase in size exponentially, and the first part of the barn to fail is the roof trusses, causing the interior aisle to be the worst place to be. Also, having to look for people in the barn distracts the professional emergency responders from fire suppression.

Instead, barns should be designed and built to allow an Outside Door Rescue which is not as dangerous to human rescuers and also represents a very fast method of extrication where the doors to the stalls open to the outside as well, unfortunately not all facilities have access on the outside wall. Animal facilities should have OUTSIDE WALL access to the animals to allow doors to be opened and the animals to egress the building via a FIRE LANE – where a person can open the doors to the inside stalls early in the progression of a fire, then all the animals are chased by a person out a fire lane into a safe enclosure far from the barn. Animals have to be chased because they will stay in the barn even with an open door because that is their safety place – not because they are dumb. When removed, Camelids should have water sprayed over their bodies to destroy any embers that might have fallen on their coat.

An example of a barn that is extremely well planned with respect to fire safety would be one that has:

- Electrical in Conduit and no extension cords, updated electrical service at panel
- Warning Signs, reflective stall numbers
- No Smoking signs and a policy that allows no lighted tobacco on the property
- Strobe lights and audible alarm to alert locally of fire, tied into local fire response system
- Lights, fans and electrical appliances are high quality and directly tied into electrical service
- 10 pound fire extinguishers clearly marked and placed at several locations in and out of barn
- Egress is provided every 50 to 75 feet down hallway , not just at both ends of barn
- Stall doors open to the inside, and another set of stall doors to the outside
- Wide aisle with minimal obstacles
- Excellent ventilation with overhead fans and open construction to allow heat to escape

Research has shown that when firefighting students attempt to get animals out of a barn in practice smoke at a training event, the biggest difficulty is first FINDING the animals, then getting a halter and lead rope on them with gloves on in the dark smoke, then orienting and moving them out of the barn. In the smoke from a barn fire, the human eye can barely detect a llama, especially if it is lying down, but firefighters have the equipment to be able to find the live ones, such as an infrared camera. Then attempting to catch and halter an animal that may be very upset takes precious minutes to perform.

Wildfire response requires a plan for two very different scenarios – the people that evacuate with their animals to shelters out of the area, and those that will shelter in place. Shelter in Place often arises because the pathways to get out have been blocked, or people who choose to stay because of minimal resources that are available for transportation, especially for large numbers of animals. However, shelter in place planning requires attention to detail for minimizing fuel and sparks that might fall into both property and facilities, and understanding there will be no access to assistance until after the fire front passes the location. The intensity of the disaster also effects the decision whether to stay or to evacuate.

Evacuation is the preferable choice for most people to get out of the way of danger for any known disaster, understanding that saving human lives is most important, while property and things can be replaced. The catch is that they must have advance warning system in place. With increased technology that is easier today, but still not a perfect science. Owners need transportation for all their animals – many times there will be no second trip.

Making Hard Decisions:

If the animal has obvious external injuries, possible internal injuries and is recumbent due to exhaustion – how would you treat it? This is where triage must be implemented – how many animals are involved in the scenario? How many can be actually helped? How many people are available to assist? Do not let animals lay there to just die. If there are only one or two animals, your resources may allow you to salvage all of them. If there are thirty animals burned after a wildfire – you may be severely limited in your choices and resources. Euthanasia can be provided in a field environment by owners who are prepared.

The most common TLAER related first aid scenarios:

- Severe Lacerations
- Fractures
- Burns / Inhalation injury
- Foreign Object Trauma
- Shock
- Hypothermia
- Heat Stroke / Hyperthermia

Burn Injury first aid should start with evaluating the severity of the wounds in triage, the extent of first aid will be to use a water spray to stop any burning cinders in the coat from continuing to burn. Administer pain control, burns are extremely painful. Wound infections will follow in definitive care, be as sterile as possible if bandaging or covering wounds. Hypovolemia, shock and respiratory difficulty is common in large animals after barn or wildfire exposure and commonly doesn't develop for days. Further cleaning, exploration, lavage, debridement, suturing, and final bandaging should be done at veterinary facilities.

First Aide Equipment For Large Animals: Get recommendations from a experienced veterinarian to build a kit for your personal use in TLAER and disaster scenarios. Drugs for use under the express direction from a veterinarian may be dispensed to owners in certain cases.

The BASIC Large Animal First Aid Kit (minimum recommended inventory):

- Trauma pack (bandages, dressings, antiseptic ointment, gauze)
- Fluids, i.v. sets, needles & syringes

- Rectal thermometer
- Stethoscope
- Diapers (absorbent, clean, thick padding)
- Scissors, knife, multi-tool
- Lubricant, hobbles
- Elastic bandage, gauze, pads, cotton
- Spray bottles, wound cleaner
- Space blankets
- Duct tape, electric tape
- Epinephrine 1:1000

Perform A Basic Clinical Exam: To perform, you must have a few supplies--a thermometer, a stethoscope, and a watch that allows you to count seconds. Use your powers of observation to determine what is normal or abnormal behavior. NORMAL Parameters of Temperature, Pulse and Respiration are important to memorize. Knowing about NORMAL teaches us a lot about ABNORMAL – which is why veterinarians and their technicians learn to spend time OBSERVING the animal first – getting an idea of the character of breathing, movement, attitude, and degree of possible pain.

Animals do not always vocalize when in pain, their instinct tells them that vocalizing increases risk of being pulled down by predators. Prey animals cannot “cry” like humans, but no noise from a camelid DOES NOT mean they are not in pain. They have the exact same neurological design as humans do, and probably have sensations of pain very similar to ours.

Euthanasia should be performed in a logical and orderly manner to minimize pain and suffering in the animal and reduce chance of injury to personnel. In the field, humane euthanasia will have to be performed by emergency personnel, owners, as well as veterinarians. Appropriate disaster scene and incident management includes a plan for humane destruction of large animals that cannot be saved. When properly employed, euthanasia in the field is humane and can be implemented safely.

Euthanasia in TLAER scenarios should be considered:

- Poor to grave prognosis for injuries after triage and veterinary examination
- Severe extent of injuries, multiple organ system involvement
- Severe shock, blood loss, amputation, evisceration of organ(s)
- Unresponsive to pain management
- Dangerously combative (especially to Responders), aggressive, neurologic signs

CONCLUSION:

If you think it WON'T HAPPEN – you are mistaken. It happens to good people and beautiful animals. **They are worth our efforts to prepare because it is only a matter of time and statistics before it happens to you.**

RESOURCES:

NFPA 1670, NFPA 1006, NFPA 150 National Fire Protection Association Standards

Technical Large Animal Emergency Rescue, Gimenez, Gimenez and May. Wiley-Blackwell, 2008.
<http://www.amazon.com/Technical-Large-Animal-Emergency-Rescue/dp/0813819989>

June, 2007 **AVMA Guidelines on Euthanasia** http://www.avma.org/issues/animal_welfare/euthanasia.pdf

Federal Emergency Management Agency: **FEMA Independent Study Program: IS-10 Animals in Disaster, module A&B; and Livestock in Disasters**, Emmitsburg, MD, 2008, Emergency Management Institute. <http://training.fema.gov/IS/>

Emergency and disaster planning at Ohio animal shelters. Decker, et.al.
Journal of Applied Animal Welfare Society, 2010;13(1):66-76
<http://www.ncbi.nlm.nih.gov/pubmed/20017047>

Syllabus – Awareness, Operations, Technical level TLAER Training.

How to Effectively Perform Emergency Rescue of Equines, Gimenez, Gimenez, Baker, and Johannessen. Proceedings AAEP, 2002 <http://www.ivis.org/proceedings/aaep/2002/910102000276.PDF>

Animal management in disasters. St Louis, 1999, Mosby. Heath, SE
<http://searchgear.com/animalmanagementindisasters.aspx>

White Paper on Technical Large Animal Emergency Rescue. National Fire Academy, Lindroth, R.
<http://www.usfa.fema.gov/pdf/efop/efo39315.pdf>

Veterinary Disaster Medicine. Wiley-Blackwell, 2009. Wingfield and Palmer ,
<http://www.wiley.com/WileyCDA/WileyTitle/productCd-0813810140.html>

Veterinary Disaster Medicine: Working Animals. Wiley-Blackwell, 2010. Wingfield, Nash, Palmer and Upp, <http://www.amazon.com/Veterinary-Disaster-Medicine-Working-Animals/dp/0813810175>

National Veterinary Response Team application

<http://www.phe.gov/Preparedness/responders/ndms/teams/Pages/nvrt.aspx>

Lessons Learned READY.GOV document “BEST PRACTICES - Shelter Operations: Pet-Friendly Shelters”

<http://www.ready.gov/sites/default/files/documents/files/FEMAPetShelteringbestpractices2007.pdf> and

<http://www.ready.gov/animals>