

# Tractor Fire- Dozer Swamper Broken Leg Facilitated Learning Analysis



On Sunday, January 17, 2021, Texas A&M Forest Service (TFS) resources responded to the Tractor Fire in Burnet County, Texas. During initial attack operations, a dozer swamper (ground man) suffered a broken leg after being entangled in brush being pushed by the dozer. The patient was extricated from the tree in which he was entangled and immediately transported to the hospital.

*“It was at that point I accepted I was going to die.” -John*

## Narrative

At 1407 on January 17, 2021, TFS resources were dispatched to the Tractor Fire in southern Burnet County. Resources included a type 2 dozer and crew with a DZIA (Eric), swamper (John), and an Incident Commander (David). David arrived on scene at 1611. John and David arrived with the transport and service truck at 1748. This delay was due to a miscommunication on the address of the fire. Unified command was established between the local fire department and TFS. Contact information was exchanged between David and the local IC, and all radio communications were moved to an interoperability channel. Fire activity was minimal, but due to heavy fuel loading and forecasted winds, it was determined that the northern end of the fire needed to be secured. After briefing, the dozer crew began constructing direct fireline beginning on the left flank working toward the head of the fire.



**Figure 1: Accident Site. Photo taken at approximate dozer location at last time of verbal communication with swamper. Hand tool with flagging indicates the location of the dozer blade contacted the swamper.**

Operations remained normal throughout the majority of the fire, with John leading the dozer on foot. His primary responsibility was to locate the fire edge and identify any hazards or obstacles. Obstacles included a number of fences and several drainages that consisted of thick live oak, juniper stands, and several large slash piles. Communication between Eric and John on how to mitigate these obstacles was clear and concise. The operator and swamper utilized their radios, however John had been experiencing issues with a malfunctioning push-to-talk button on his Bendix King (BK) DPH handheld radio throughout the evening. His radio was in a holster attached to the chest strap of his line pack, not in a chest harness.

On more than one occasion, John was forced to remove a glove in order to depress the button far enough in to transmit. Eric, the operator, asked John on several occasions about either his location or an obstacle. John then responded with a flash from his flashlight to identify where he or the obstacle being addressed was located.



## *“I lost you. Where you at?” - Eric*

At approximately 2200, the dozer crew met David at the heel of the fire. David brought Eric and John dinner, and they discussed the upcoming piece of line. It was identified that 80% of the fire had been lined. The crew would need to push through a juniper thicket to a cross fence, then follow cold black through an open field to complete the line. After a short meal break, Eric continued line construction while John rode with David in his truck to the cedar thicket. David and John discussed the location of the fence and where to cut it. David left John with the dozer and began to drive around to the field the dozer crew would be working toward. It was around this time that David also tied in with the Fire



**Figure 2: The swamper’s radio, found at the accident site still inside the holster. The radio fell off when the pack was removed during extraction from the juniper.**

Department Incident Commander, and they agreed that containment of the fire was close to being complete and that the fire department could clear the scene. The fire department cleared the fire scene at 2233.

## *“If I can see that dozer, the dozer can see me.” - John*

John led the dozer into the cedar thicket and worked ahead to locate the fence. When John found the fence, he began working on cutting the wire strands. David approached John at the fence from the open field. The two conversed briefly and discussed the location of the fire’s edge through the field. David then turned and began to walk back to his truck that was parked to illuminate the cold black that the dozer would be tying into. The fence that John was cutting had grown up into a juniper and was difficult to work on. As John completed the fence-cutting, Eric called for John on the radio to request his location. John responded with a flash from his flashlight. Eric then radioed, “Okay, I got you.”, after observing the flashlight signal. John then turned to continue to work on the fence, with the dozer approximately fifty feet behind him. John had been located towards the right of the dozer, but in order to remove some wire from a t-post, he relocated to the left. This put John directly in front of the dozer. At the same time, Eric continued to push line toward the area John had just signaled from.

Hearing the dozer, John realized that the dozer was getting uncomfortably close. John attempted to run left but his egress was blocked by heavy junipers. John grabbed for his radio on his chest as the dozer pushed him into a juniper tree. The dozer continued to move forward, pushing John further into the tree and down toward the ground. John continued to struggle for his radio, fencing plyers still in his left hand, while screaming “Eric, stop! Eric, stop!” As the dozer continued to push, John realized that he was so entangled that he could no longer reach his radio.



As David reached his truck, he heard a sharp scream from John. David grabbed his handheld radio, keyed it up, and started telling Eric to stop repeatedly while running toward the dozer. Eric stopped pushing and immediately asked David what was going on. David, arriving at the blade of the dozer, saw a leg sticking out from the brush pile being pushed. He immediately began to ask, “John are you okay?” John answered that he was alive. David quickly assessed John’s situation and determined that there was no part of John under the dozer’s blade. David then instructed Eric to slowly back the dozer up and not lift the blade. Eric then set the hydraulic and parking brake and exited the dozer. It was at that point he saw John’s leg sticking out of the brush pile.

***“I just killed somebody. I killed my ground man.” -Eric***



**Figure 3: The juniper that the swamper was entangled in. Note the limbs that were removed during the patient extraction.**

Both Eric and David began assessing John’s injuries, and it was determined that John would need medical support. Due to the fire department leaving the scene, David called the Fire Department IC on his cell phone at 2236 and notified him of the accident. Immediately after the call from David, the local IC called their dispatch on the radio to notify them of the incident and request an ambulance. The Local IC and one brush truck then returned to the fire location. Arriving back on scene at 2243, the brush truck staffed with one firefighter/ EMT went direct to the accident site while he began patient care. He also grabbed a hand saw and helped Eric and David with the extrication of

John from the juniper. In order to dislodge John from the juniper, Eric had removed his line pack and the hand tool that was stored on it. As John was removed from the juniper, he began to complain of pain in his left leg. Eric then kneeled on one leg and sat John on his knee to support him. With John initially stabilized and an EMT on scene, David began notifications of the accident. David contacted the Agency Administrator (AA) and notified him of the accident. David then completed a Medical Incident Report (8-Line), and it was determined the transport priority was a Priority 2- Yellow. David contacted TFS dispatch at 2256 to notify them of the incident and relayed the 8-Line.

***“I don’t ever want to be waiting on that call (about the condition of an employee) again.” -Agency Administrator***

The ambulance arrived at the accident scene and made patient contact at 2255. By 2303, the ambulance was en route to the hospital with John. After evaluation at the hospital, it was discovered that John had broken his left femur, but no other injuries were discovered. The Agency Administrator requested that David assist Eric with

securing the transport and dozer and then have him return to his home unit in the service truck. David and Eric cleared the fire at 2357. David traveled to the hospital to check on John and complete all forms needed for workers compensation. Once David was told by hospital staff that John was stable, he traveled to a nearby hotel to rest overnight (RON). The AA also ordered a Critical Incident Stress Management (CISM) Team early that morning for everyone involved. The CISM Team was mobilized Monday, January 18, 2021.

After David and Eric mitigated their time, both returned to the fire. David patrolled the fire and worked with the local FD while Eric loaded the dozer on the transport. The fire was turned back over to the local FD at 1541 and David and Eric returned to their home units. John was released from the hospital on the afternoon of Monday January 18, 2021. On the morning of Tuesday January 19, 2021, the CISM team met with the individuals involved with the incident.

## **Lessons Learned**

### **What are we expecting from our swampers?**

John had been on several fires with various operators in the branch within his 6-month career with the agency. He was given clear expectations of his role as a swamper by his home unit but had limited experience working without direct guidance. Are we spending enough time training our new swampers on expectations of working with dozers? Are we asking too much of new swampers? Are we separating the roles of an HEQB and a swamper? Are there opportunities for new employees to work with tenured staff to gain experience on fire?

### **Communications Between Operator and Swamper**

Even though communications went well between resources on the fire, it was identified that the swamper had trouble using his handheld radio with a gloved hand. The combination of a bulky radio holster and fire gloves made it difficult to key up the radio on several occasions. Are we checking our radios before response? Do they work as expected with harnesses/holsters? Where are you keeping your radio?

Non-verbal communications between operator and swamper are common on the fire line. Are we establishing these non-verbal cues before engaging on the fire? Do we sometimes cut corners with these cues when verbal communication is necessary?

### **Medical Incident Report (8-Line)**

The IC said that, because of his training with 8-line simulations, he felt familiar and confident in gathering documentation for dispatch and the Agency Administrator. This also gave him the confidence to remain calm and make clear decisions during a high-stress incident. In a medical emergency, patient care is priority. Utilizing the 8-Line process is important, but the ultimate goal is stabilizing a patient and transporting them to a patient care facility. Are we familiarizing our staff with appropriate medical procedures and local capabilities?

### **Staging EMS**

While we want to release our volunteers and downsize resources as the incident dictates, the use of local knowledge and the ability to rapidly request EMS ultimately led to a positive outcome and quick extraction time on this incident. Are we releasing our resources too soon? Do we have the ability to request an EMS unit to stage on location during initial attack fire operations?

## **Night Operations**

Although the VFD had stopped forward progression and there was minimal fire activity, it was determined that securing the fire's edge was necessary after considering the expected fire weather for the following day. As firefighters, we often work well into the night and take more risks as we move into night operations. Are we mitigating risks while maintaining heightened situational awareness and communications? Are we letting our guard down the closer we get to completing line construction due to becoming complacent?

## **PPE**

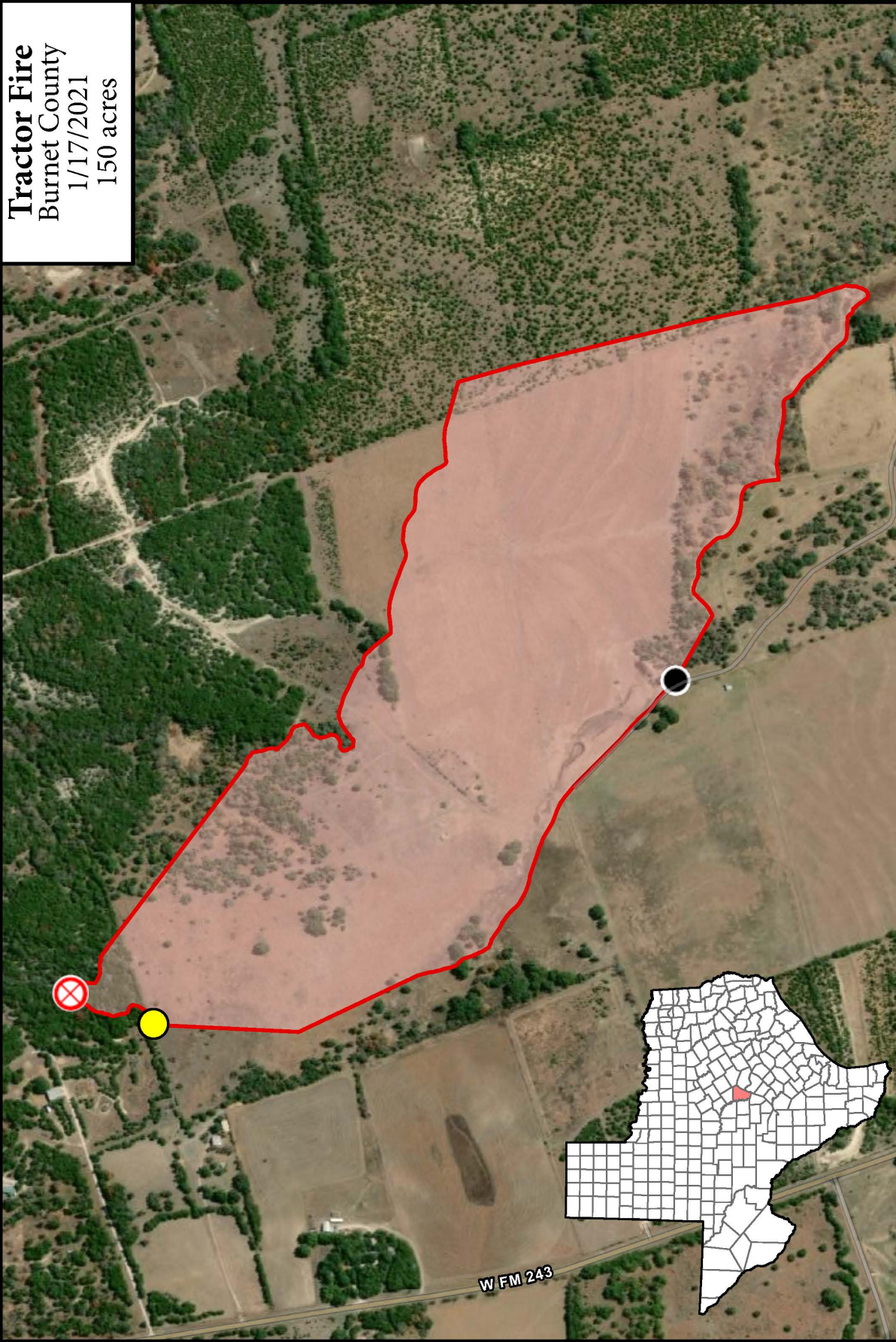
The swamper was wearing all of his PPE including gloves, a head lamp, and red flashing light. Multiple times during the FLA, the dozer operator mentioned limited visibility due to dust, cedar pollen, and thick brush, coupled with night operations. The swamper was working in close proximity to the dozer at the time of the incident. Remember, just because you can see the equipment does not mean they can see you. Are we training personnel to maintain a safe distance from equipment? What additional steps can be taken to ensure the operator knows the position of the swamper and their intended direction of movement?

## **Critical Incident Stress Management (CISM) Team**

A CISM Team was requested for the individuals involved with the incident. Although the injury sustained was not life-threatening, the event was traumatizing for the individuals involved nonetheless. The "what-ifs" will often be played through an individual's mind after experiencing an event such as this one. The individuals noted that talking to the CISM Team was very beneficial and set the tone for the FLA team to follow.



**Tractor Fire**  
Burnet County  
1/17/2021  
150 acres



0 0.25 0.5 Miles

N

Emily Mitchell | TFS EOC | 1/28/2021

Esri Community Maps Contributors, Texas Parks & Wildlife, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USDA FSA, Geolyse, Maxar

- Accident Location
- Dozer Line Anchor Point
- ⊗ Fire Origin
- ▭ Fire Perimeter

