

## Summary

During initial attack operations on the Shearwood Creek Fire in Jasper County, Texas there was an incident involving a tree strike to a UTV. While tracking down pre-existing fireline, a UTV was struck by a tree that was unknowingly cut and pushed by a Caterpillar D6T with a shear blade. There was substantial damage to the UTV, however, the operators of the dozer and the UTV did not sustain any injuries during the incident.

*“I heard a crack and then I was on my side” - Swamper*

## Conditions

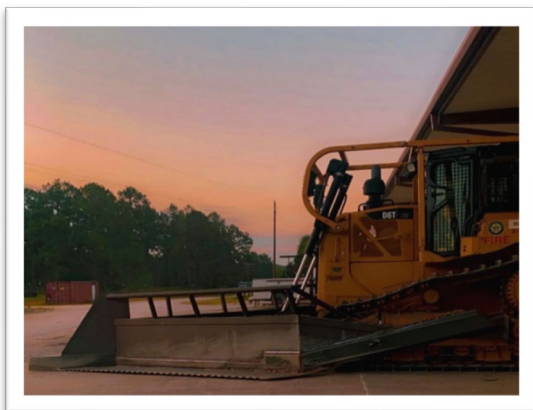
The Shearwood Creek Fire in Jasper County burned an estimated 3,000 acres with extreme fire behavior, including crown fire and spotting out to ¼ mile. Weather observations at the nearby Jasper County airport were temperatures of 107 degrees, relative humidity of 21% and wind speeds of 8-12 MPH. The fire was impacted by outflow winds from a nearby thunderstorm with winds shifting out of the south and gusting to 22 MPH. The fire occurred where extreme fuel dryness was present in Southeast Texas.

## Narrative

On August 24<sup>th</sup>, 2023, at approximately 12:45, Jasper County Sheriff’s Office requested assistance from the Texas A&M Forest Service (TAMFS) on a wildfire with numerous homes and structures threatened near County Road 32 & TX-63. TAMFS resources arrived on scene and began initial attack on approximately 35-40 acres burning with moderate to high fire behavior in a young (5-year-old) loblolly pine plantation with a grass/brush understory and adjacent stands consisting of predominantly pine plantation of various age ranges.



*Shearwood Creek Fire - August 24, 2023*  
*Photo Credit: Bobby Kiskin*



*Caterpillar D5T with shear blade*

Multiple resources including tractor plows, engines, and aviation were utilized during firefighting operations.

The fire was transitioned to a Type 3 incident at 14:00. Following the transfer of command, the ICT3 requested a Type 1 Dozer equipped with a shear blade (DZ1). This specialized piece of equipment has the ability to rapidly establish fireline in pine timber fuel models by shearing large diameter pines with a large fixed ‘V’ blade (13.6’ wide and 20’ long) with cutting edges along the bottom. This resource was staffed by a qualified Initial Attack Dozer Operator (DZIA) and a swamper, qualified as FFT2, on a UTV.

## UTV Tree Strike

### Rapid Lessons Shared

DZ1 and crew arrived on scene at 18:15 and were briefed by the ICT3. They were tasked with working the left flank of the fire (DIV Alpha) from County Road 32 to County Road 34. They constructed fireline until they reached County Road 34, then they turned around and widened the line back to their starting point at County Road 32. After completing this assigned section of line, DZ1 and crew were asked to track to the right flank to assist DIV Zulu due to an increase in fire behavior caused by a wind shift. Dozer crews along DIV Zulu were experiencing high fire behavior with frequent spotting. Around 23:00, DZ1 was instructed to high track (not blade) from the DIV Alpha/Zulu break, along established dozer line (approximately 14 feet wide), to the most active part of the fire and tie in with the heavy equipment working in that area. Some resources initially assigned to DIV Zulu were moved to other priorities causing a downsize on that DIV.



*Dozer Operator's view as he approached the creek*

*“There were so many lines, in the black and indirect, with the worst dust I’ve ever dealt with.” - Dozer Operator*



*Photo showing steepness of drop off into creek*

While tracking down the established dozer line, the area proved to have compounding difficulties related to navigating the correct path. Numerous spot fires had previously occurred along this division creating a “web” of firebreaks. Additionally, dark conditions with no active fire along the fireline and an exceptional amount of dust being stirred up by the tracks of the dozer made it challenging to stay on the correct line. After “getting lost” a few times by selecting the wrong section of line to travel down, the operator asked the swamper to take the lead on the UTV so the taillights could be seen through the dusty conditions, which would help them navigate the fireline until they could reach the active section of the fire.

At approximately 24:00, the UTV went downslope towards a creek, making a sharp right turn. The swamper noticed a narrow creek with a steep bank (15-20’ drop) after making the turn and stopped to radio the operator of the hazard. While the swamper was reaching for the radio, he heard a crack immediately followed by the UTV being rolled over by the tree strike.



## UTV Tree Strike

### Rapid Lessons Shared



*UTV immediately after tree strike*



*Damaged UTV after recovered from fire*

The operator had lost visual of UTV lights after the UTV went downslope. He progressed downslope and made the sharp right; DZ1 inadvertently sheared a 16-inch Diameter at Breast Height (DBH) 100-foot-tall pine tree. The operator did not feel the dozer shear the tree but saw the tree fall in front of DZ1. He looked out and saw the taillights of the UTV turned vertically and immediately got out to assess the situation.

*“I could yell but he had zero time to react to it, it came down so fast.” - Dozer Operator*

Climbing down, the operator saw that the tree had landed on top of the UTV and flipped it over on its side. He checked on the swamper and discovered that he appeared to be uninjured, although his foot was caught in the UTV. The operator assisted the swamper with removing his boot, which freed him from the UTV. After regrouping, the ICT3 was notified of the incident. The ICT3 checked on the firefighters, and after determining that they were safe, made the proper notifications to agency administrators around 00:23. The swamper and operator were able to drive the UTV back to the DIV Alpha/Zulu break and both were released for the evening. Both returned to the fireline the next day.



## Lessons Learned

### 1. Specialized Equipment Use

The ICT3 understood the value of the equipment in the fuel type, given the fire behavior. The shear blade doesn't get used frequently due to the lack of fire conditions that warrant the need for it. Because of this, there isn't widespread familiarization of the equipment outside of the crews that work with it frequently.

- How familiar are you with the specialized equipment available to you in your region? Do you seek training opportunities with that equipment?

### 2. Gaining Hands-on Experience

Due to the limited number of personnel with experience operating near the equipment and the infrequent nature of conditions that warrant the use, gaining hands-on experience is a necessity when opportunities arise. The nature of the fires that the equipment responds to is often during rapidly deteriorating conditions in high-stress environments.

- How can we gain hands-on fireline experience without compromising safety?

### 3. Communications / Span of Control

Resources on DIV Zulu were limited, and those that were available were either moved to address the imminent need of the fire or were reallocated to address other priorities. Moving into an area not seen in daylight, and without having communications with anyone who had, the operators had challenges navigating that DIV. DZ1 and crew worked independently to meet the objectives set by ICT3.

- How do you obtain Situational Awareness when resources aren't physically there when you change locations?

### 4. Night Operations

Conditions were unfavorable with the multitude of lines, no active fire, and dusty conditions. When the incident occurred, DZ1 was not constructing fireline, it was merely moving from one place to another. The UTV was the only viable source to scout the path to where the equipment was needed. The UTV was equipped with stock lighting.

- How do you make yourself more visible at night? Is your multiuse equipment set up for the fireline?