



Tree Strike to a Type 6 Engine on a Prescribed Fire

Background

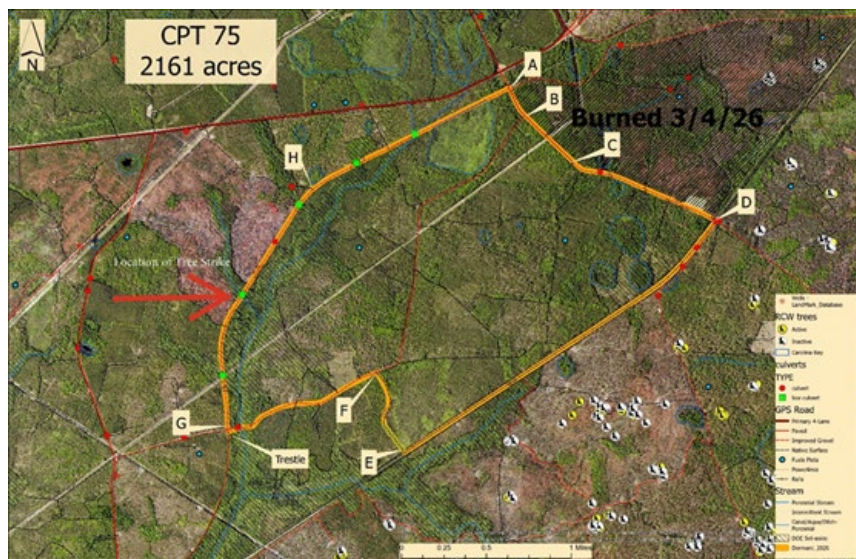
On March 10th, 2026, the Savannah River Forest conducted a prescribed fire in Timber Compartment 75. Ignitions on the 2,161-acre unit were completed at approximately 1500 hours. At a point when the Holding Boss felt comfortable that containment lines were adequately secured, an After Action Review (AAR) was conducted for the prescribed fire operations.

The Burn Boss then left the Holding Boss as point-of-contact on the burn and released resources unnecessary for continuing mop up. Holding resources and some extra lighters joined together to mop up and secure the burn's perimeter.

Engine 603 was assigned to patrol and mop up a section of the unit's northern side from Point A to Point G (see attached burn map). One firefighter from the ignition team had joined Engine 603. It was therefore staffed with two.

Operations were normal, with mop up consisting of extinguishing cat-faced trees, stump holes, and heavy fuels still burning along the containment lines. Other water-capable pick up trucks and a water-equipped UTV were patrolling and mopping up on other portions of the prescribed fire.

Points A, H, and G are along a 2.9-mile stretch of Trestle Road, an old railroad grade. It has a gravel surface. At the point of the tree strike, it is elevated about 12-15 feet above the ground level with vegetation and trees growing on the steep road bank. The burn unit consists of various aged pine stands, wet drainages, wet Carolina Bays (oval-shaped depression wetlands), oak, and hardwood understory.



The Timber Compartment 75 Prescribed Fire operational map.

Narrative

At approximately 1700 hours, Engine 603 with two firefighters on board identified a hazard tree that needed to be mitigated. There was fire burning at the base of the tree as well as fire progressing up the tree's bole. The tree was on the downhill side of the elevated roadbed.

The driver positioned Engine 603 so water could be used from the hard line to cool the hazard tree for a proper size-up. The firefighters completed a size-up of the tree. It was decided that the tree was too complex for either of them. Calling a more experienced sawyer would be the best course of action.

At approximately 1705 hours Engine 603's driver contacted the Holding Boss via radio to request his assistance with the hazard tree assessment. Ten minutes later, the Holding Boss arrived. He and Engine 603's driver went down to the base of the hazard tree for a proper size up.

At approximately 1720 hours, the Engine 603 driver placed his hand on the tree, felt movement, and realized that it was falling unexpectedly. He yelled: "Tree's coming down!" to the Holding Boss who was standing directly beside him. Both the Holding Boss and the driver quickly ran up the embankment—just in time to look over and see the tree strike Engine 603.



The bole of the hazard tree after it had fallen.



Image shows the angle at which the tree struck the engine.

Two additional firefighters were "observing" from Trestle Road about 20 yards in front of the engine. At the warning yell, they retreated farther away from the front of Engine 603.

The 29-inch DBH dead pine tree struck the engine at an approximate 45-degree angle, contacting the rear box compartments—causing significant damage to the box body.

This 55- to 60-foot tall pine had a broken top. It had no limbs and appeared to be very straight. Its lean could not be determined from the road. One firefighter later stated the lean was "undiscernible" unless you were standing directly beneath the tree.

The prescribed fire's burn leadership, following agency procedures, made notifications in a timely manner to the duty officer, forest supervisor, deputy forest supervisor, regional safety officer, Department of Energy representative, and forest fleet manager.

Contributing Factors

The tree had fire in a crack about three feet above the smoldering cat face at its base. The engine remained in its initial position on the road after extinguishing the smoldering base and was within falling distance of the tree. The tree was in an area that is known to remain wet with streams, Carolina Bays, and swampy areas. This

moisture can lead dead trees to rot at the base more quickly than normal. Also, it is possible that recent freezing temperatures may have contributed to weakening the tree.

Lessons Learned and Shared

- 1.) **Ensure apparatus are positioned outside the potential fall zones when assessing hazard trees.** Once the snag was identified as a hazard that needed to be mitigated and after the tree had been cooled, the apparatus could have been repositioned outside potential fall zones while further assessment was ongoing. Firefighters appropriately **recognized the tree as a hazard** and requested supervisory assessment when it exceeded their comfort level. This positive action reinforces the importance of engaging qualified personnel early and aligns with the lesson to ensure apparatus are positioned outside potential fall zones when assessing hazard trees
- 2.) **The initial accident notification should be made through Dispatch as an Incident Within an Incident (IWI).** In this incident, the initial notification was a cell phone call to the Burn Boss. The area had marginal service. Information was unclear as the call was disconnected. (The Holding Boss later drove to a different location for better cell service.) Using the radio repeater system ensures wider resource awareness, accurate time stamps, and creation of an IWI in WildCAD. After notifying Dispatch, a phone call to leadership can provide further details.
- 3.) **Reinforce situational awareness around hazard trees through training.** The firefighter’s use of a loud, clear verbal warning *“tree’s falling!”* and their previously identified escape route demonstrates strong situational awareness. Their successful movement to safety supports the lesson to reinforce situational awareness around hazard trees—including lean, fire-weakened bases, and slope influences—and to consider wider exclusion zones and training scenarios involving escape route planning. Opportunities for circulating this information may be to incorporate it into local tailgate safety sessions, saw trainings, or annual refreshers and to train on hazard-tree size-up with apparatus placement drills.
- 4.) The engine and scene were **photographed and documented prior to chainsaw operations**, providing valuable incident information. This supports and enhances the broader lessons on proper assessment, documentation, and safe operational sequencing when working around hazard trees.

Outcome

Engine 603’s rear driver-side compartment sustained damage. However, there were no injuries to the involved firefighters. Engine 603 was found to be safely drivable and was relocated (~¼ mile away) and secured for removal during the next day’s shift. Operations concluded without further incident.



TEAM MEMBERS

Anthony Rojo

Brandon Hughes

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