Virginia Department of Forestry

Accident Investigation Report

Wildwood Road Fire, Dozer Incident

April 21, 2023

TABLE OF CONTENTS

ACCIDENT INFORMATION

ACCIDENT: Dozer Incident/Injury

LOCATION: Wildwood Road Fire, Essex County, Virginia

DATE: April 21, 2023

ACCIDENT INVESTIGATION TEAM

TEAM LEADER/ LEAD INVESTIGATOR:

Chad Briggs
Safety/Training Coordinator, Virginia Department of Forestry

EXECUTIVE SUMMARY

On Friday, April 21, 2023, at 14:35 hours, Essex County dispatched a reported brush fire near the intersection of Ashdale Road and Wildwood Road in Center Cross, Virginia.

The Virginia Department of Forestry (DOF) had been monitoring a 2.3-acre wildfire in that same area that had taken place on Monday, April 17, 2023. This fire was subsequently controlled and extinguished by employees of DOF and local fire departments. Some hot spots remained, and the fire area was patrolled and mopped up over the course of the next several days.

On Friday, April 21, a weather system brought warm/dry and extremely windy conditions to the area. This weather system enabled a small smoldering area to rekindle and cause fire to escape into previously unburned fuel.

DOF personnel began arriving on scene shortly after local fire department units and immediately began helping local VFD units control the fire. Included were two area foresters one serving as incident commander, a water quality specialist, a forestry technician and assistant director of fire and emergency response operations. Several DOF dozers and a contracted SEAT were also being utilized in the control efforts.

The area forester was given the task of looking for “jumps”, fires outside the current control lines. A jump of approximately 2 acres was located and the water quality specialist operating Essex 50 (identifier for the John Deere Bulldozer seen on the cover page of this review) joined the area forester with control efforts. Upon completing that task, the area forester thought smoke was seen in a previously unburned area of 5-year-old pines and mixed thick under brush off Wildwood Road. The water quality technician and ESS-50 accompanied the area forester to this location.

Both parties traveled a gravel road just off Wildlife Road to gain better access to the possible “spot fires”. The operator/ESS-50 entered the pine/underbrush area to conduct a reconnaissance overview. The area as stated previously was a 5-year-old pine stand containing thick under brush. This fuel type was more than 4-5 feet tall, this impeded visibility from the dozer cab of the ground below.

(Refer to Map #1)

ESS-50 entered the pine/brush fuel type and conducted its spot fire reconnaissance. With no fire found, ESS-50 began to return towards a grass roadway that would connect it to the gravel road and its original entry point. As ESS-50 approached the grassy road, it suddenly and without warning dropped in excess of 5 feet down causing the blade which was lifted several feet up to allow for tramming through the pine and brush to strike the ground. This sudden striking of the blade on the ground caused a sudden stop of the dozer, ultimately causing the operator to lurch

forward. This sudden lurch forward caused the operator's seat belt to become unfastened and allowed the operator to strike their face and head on the dash area.

(Refer to Map #1)

This event occurred at approximately 18:37. The dozer operator called the area forester who was the incident commander on the radio and reported he was "hurt". The incident commander answered the operator and asked if he needed an ambulance, the dozer operator replied "yes". The incident commander immediately communicated with the fire department command to send the on-scene ambulance to the aid of the dozer operator. The incident commander communicated with the assistant director of fire and emergency response operations to become the incident commander of "incident within an incident". The incident commander communicated with the SEAT which was still operating on the fire to aid in locating the dozer. The SEAT communicated that he had located the dozer and it was tramming toward the gravel road.

The ESS-50 operator was able to tram to awaiting emergency personnel where he was treated for a facial laceration and neck injury and loaded into an awaiting ambulance. He was then transported to VCU Tappahannock Hospital. The assistant director of fire and emergency response operations followed the ambulance to the hospital.

FINDINGS

Finding 1:

The fuel type was thick and difficult to navigate in a dozer, it would have been impossible for a person to safely walk through this fuel type while acting in a capacity as a "dozer lead".

(Refer to Photo #4)

Finding 2:

The operator was wearing all required PPE during the incident, which included a helmet and his prescription glasses.

Finding 3:

The operator admitted to using his seat belt during the incident but was unsure if it fastened completely. The seatbelt was inspected after the incident by the Eastern Region maintenance technician and the safety/training coordinator. There were no defects found in the fastening latch.

Finding 4:

As noted, the fuel in which the operator was conducting reconnaissance was extremely thick and hard see through completely to the ground from the dozer cab.

(Refer to Photo #4 and #5)

Finding 5:

This thick fuel caused the operator to not see the drainage ditch prior to the entering the grassy road. The dozer suddenly dropped approximately 5 feet after striking the unseen drainage ditch.

(Refer to Photo #1, #2 and #3)

Finding 6:

This drop of approximately 5 feet caused the dozer blade to strike the ground in the ditch. It had been raised several feet to allow it to tram through the fuel during the reconnaissance. Striking the ground in the ditch caused the dozer to come to a sudden stop.

Finding 7:

This sudden stop caused the operator to lurch forward subsequently causing the seatbelt to unlatch and allowing the operator to strike his face and head on the dash area.

Finding 8:

The dozer operator had 37 years of employment with DOF. During that time, the operator has responded to numerous wildfires and operated a bulldozer countless times. Therefore, lack of experience in dozer operations can be ruled out as a cause.

Finding 9:

A collaborative investigation was conducted by both DOF safety/training coordinator and a member of the Loss Controls Innovations workers compensation group. A situation in which a Nomex fire shirt was partially inserted into the dozer seatbelt buckle upon which the buckle was then attempted to be fastened. By all accounts, the seatbelt did appear to be fastened, but when the seatbelt was tugged away from the buckle it immediately unfastened. This would have been the same type of force placed against the seatbelt when the operator was thrown forward against the seatbelt during the sudden abrupt stop. Thus, proving the operator's assumption was correct. The seatbelt appeared by all accounts to be in the latched and secure state, but this was not the case.

Finding 10:

The Wildwood Road had a variety of complexity not often seen in Virginia. The fire was spotting in multiple places due to winds. Air resources were being utilized on the fire. These characteristics along with the usual fire control activities combined with a serious injury to a firefighter could have easily overwhelmed any incident commander. The incident commander maintained control of all firefighting forces and got immediate medical help for the injured firefighter. This is a prime example of great decision making and confidence under pressure.

Finding 11:

In many cases, it is good to use a dozer lead/swamper on wildfires, this is a case where it would have been more hazardous to place a person on foot in front of the dozer due to poor visibility.

RECOMMENDATIONS

Recommendation 1:

Dozer operators must always check and double check that their seatbelt and other safety features are in proper working order before beginning any dozer operation.

Recommendation 2:

A new warning sticker will be printed up and placed on the dash of every DOF dozer. This sticker will be bright orange and black and remind operators to check and recheck that the seatbelt is properly latched.

Recommendation 3:

It is important to always have a medical plan for any incident location. This can range from on-scene medical personnel to medical personnel with emergency transportation.

Recommendation 4:

Anytime there is a serious near miss, injury, or fatality on an incident. An investigation must occur, this will start with proper notifications, statements from witnesses on scene and pictures of the incident scene before too much of the area is disturbed. This must all take place as soon as incident stabilization allows.

PHOTOS AND MAPS

Map #1 – Wildwood Road Fire Map. Incident occurred within the green highlighted area and red highlighted area denotes fire perimeter.

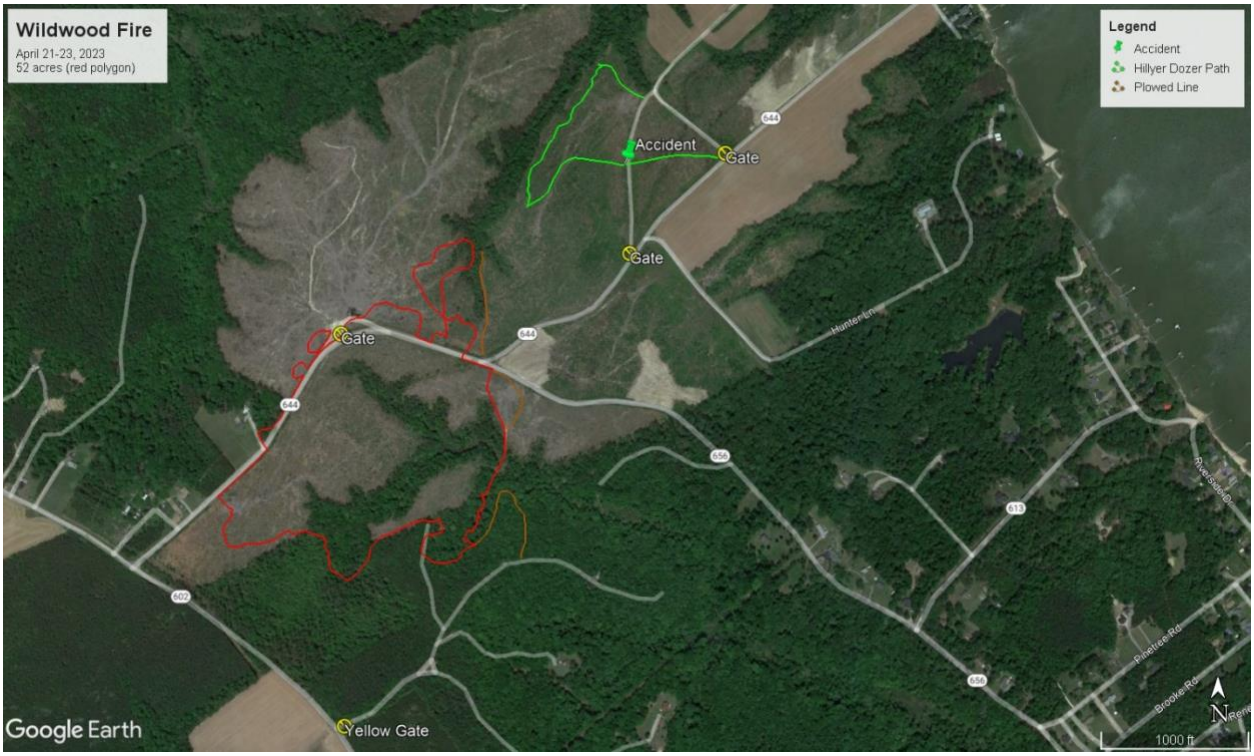

Photo #1 –

Photo #2 –

Photo #3 –

Photo #4 –

Photo #5 –