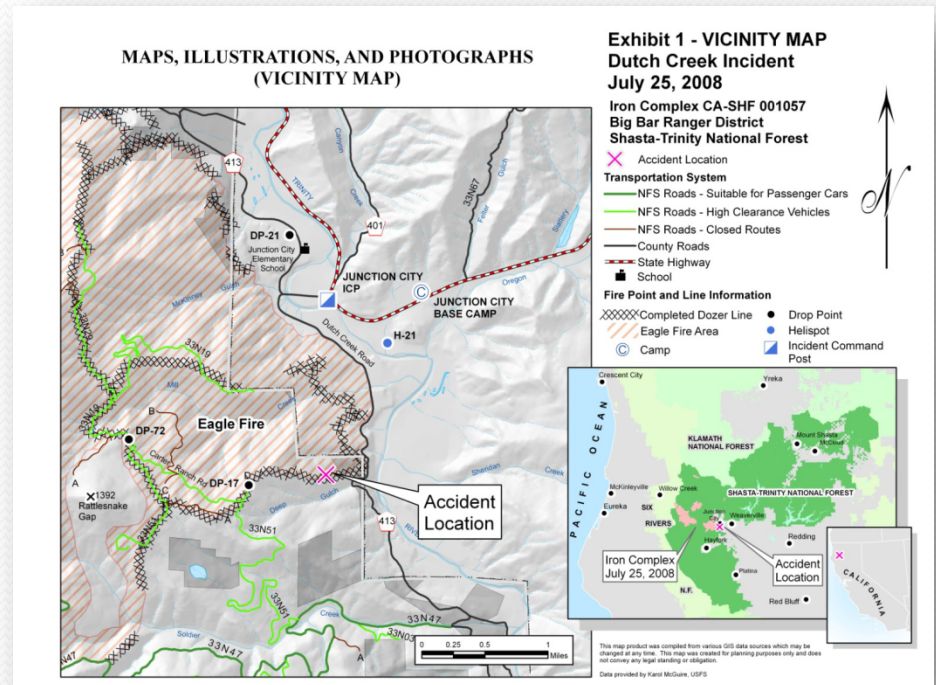


The Death of Andrew Palmer July 25, 2008



The Dutch Creek Incident: Overview

- Early in the day on July 22, 2008, an engine from Olympic National Park received a resource order to report to the Iron Complex, on the Shasta-Trinity National Forest, near Junction City, California.



The Dutch Creek Incident : Overview

- Despite a late start and a series of complications enroute to the fire, which included mechanical problems with their engine that lead to the separation of their crew and engine captain, the remaining crew members were encouraged to continue to pursue a line assignment *as a falling team*.

The Dutch Creek Incident: Overview

- Because Incident Management personnel were equally motivated to find a line assignment for the eager crew ...
- ...the crew was ultimately given an assignment as a falling module-
- that they were not qualified for and without any qualified first or second line supervision .

The Dutch Creek Incident: Overview

- The assignment was to mitigate hazard trees along the fire line, so crews could safely work in the area
- At approximately 1340, FC2 called ICP for medical for severely injured FC1 (Palmer).



The Dutch Creek Incident: Overview

- The on-scene personnel focused on flying-out the injured firefighter
- Due to heavy smoke conditions requiring Instrument Flight Rule (IFR) capability, primary helicopter resources were unable to respond to FC1's location
- Firefighters carried FC1, by litter, to a location where FC1 was hoisted into a United States Coast Guard Helicopter, at approximately 1630.

The Dutch Creek Incident: Overview

- The USCG helicopter carrying FC1 arrived at Redding Municipal Airport, where a Mercy Hospital Emergency Room Physician pronounced FC1's death at 1710
- The Coroner later determined the cause of death to be blood loss due to blunt force trauma to FC1's left leg
- 1340 to 1710 is 3 hours and 30 minutes.

The Dutch Creek Incident:

Andy Palmer

- Andrew Palmer was 18 years old and graduated from Port Townsend High School on 6/12/08
- He completed Basic Firefighter Training, and became qualified as a firefighter type 2 (FFT2) on 6/24/08
- He completed saw training (S-212) on 6/27/08
- He did not have basic first aid or CPR training (a prerequisite for S-212).



The Day of the Incident: July 25, 2008

- The day of the tragedy:
- At 0715 Palmer and his crew were verbally reminded: “no cutting trees over 24 inches”
- The chainsaws they had with them had bar lengths of 28” and 32”.



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The Day of the Incident: July 25, 2008

- A decision was made to fall a large ponderosa pine (36.7" at the point of the cut)
- Downslope from the ponderosa pine was a 54" diameter sugar pine that had an uphill lean and a large cat face on the uphill side.



The Day of the Incident: July 25, 2008

- When cut, the ponderosa pine fell downslope toward the sugar pine
- It was contact with the sugar pine, or vibration from the ponderosa hitting the ground, that caused a portion of the sugar pine, approximately 120 feet long, to break off and fall upslope, hitting Palmer and resulting in severe injuries.

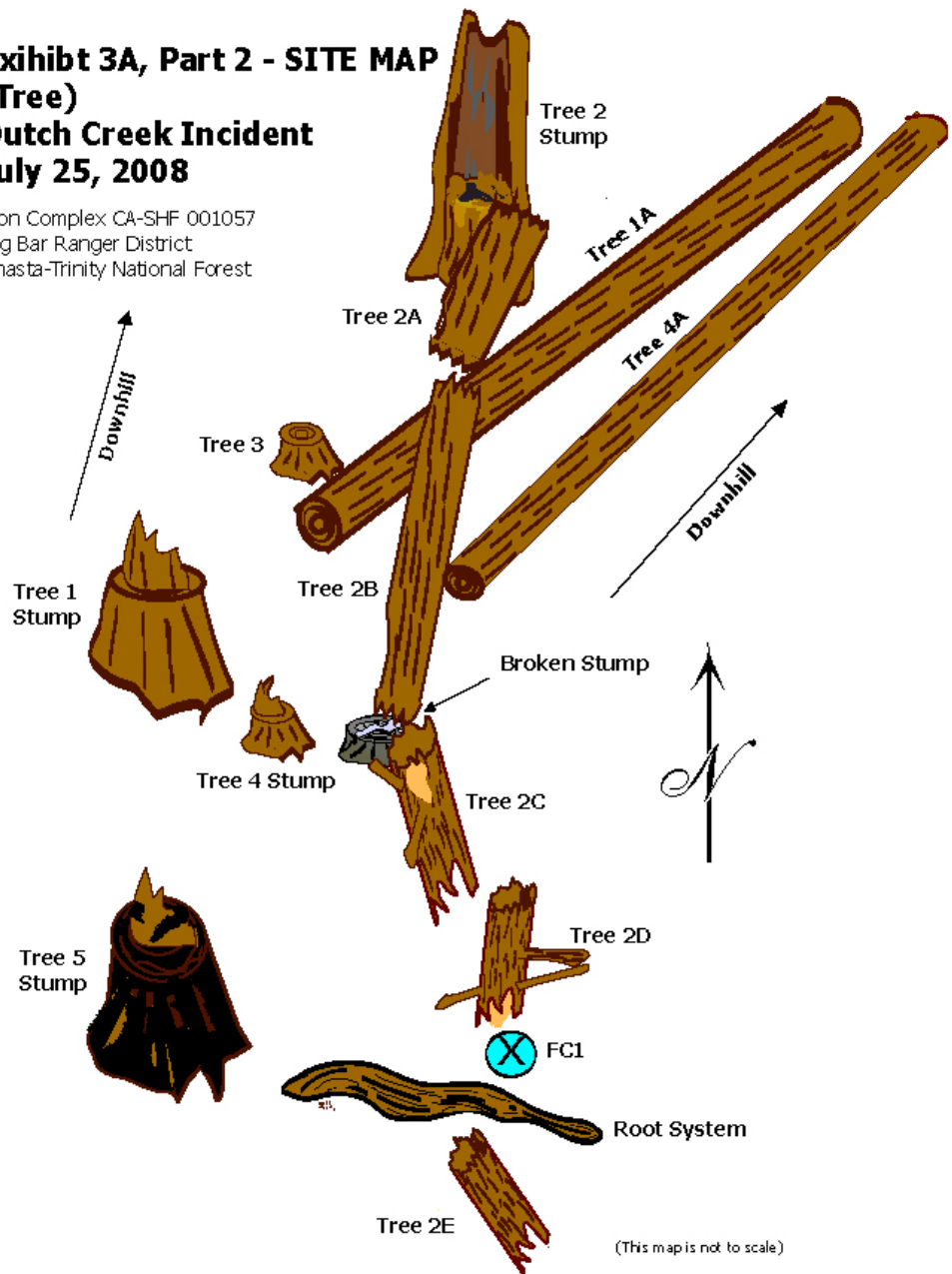


The Accident

- Map of the incident:
- The ponderosa pine, when examined, appeared to be green with no readily apparent defects that would have required it to be felled as a hazard tree.

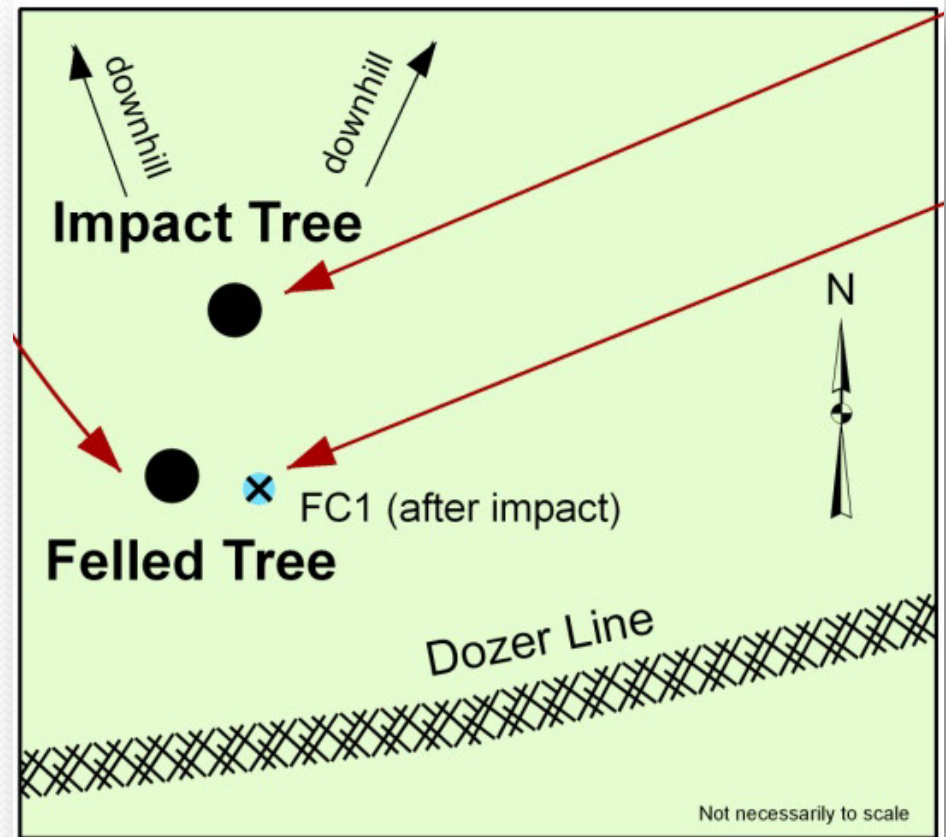
Exhibit 3A, Part 2 - SITE MAP (Tree) Dutch Creek Incident July 25, 2008

Iron Complex CA-SHF 001057
Big Bar Ranger District
Shasta-Trinity National Forest



The Day of the Incident: July 25, 2008

- The injury site is 35 feet from the felled tree
- It is unknown what escape route the faller used and where the faller was when Tree 2 fell upslope
- It is also unknown as to why FC1 was in such close proximity to the tree when it fell.



The Day of the Incident: July 25, 2008

- Between 1340 and 1350, a radio transmission came into Iron Complex dispatch:
- *“Man Down Man Down. We need help. Medical emergency. Dozer pad. Broken leg. Bleeding. Drop Point 72 and dozer line. Call 911, we need help”*.



0:00

The Day of the Incident: July 25, 2008

- 1350 –TSO pages Junction City Fire (Trinity County Life Support) ambulance:
- “Respond to medical. Reported man down on the fire. Possible broken leg. Subject is on a dozer line. Further directions will be given while in route. You are going to Dutch Creek Road to the 33N47, two miles to Carter Ranch Road” .

0:10

The Day of the Incident: July 25, 2008

- 1357 – COM recorded:
- “Possible broken femur”
- “No medics. Apply direct pressure to control bleeding”
- 1400 – TSO called PHI / Mercy Air Ambulance. Stated helicopter pilot declined due to poor visibility. Stated that REACH (Shasta Regional Medical Center) air ambulance had also declined.

0:20

The Day of the Incident: July 25, 2008

- 1400 – COM recorded, “Fractured shoulder. Fractured leg”
- 1402 – COM recorded, “Patient condition? Severely bleeding, awake, conscious”
- 1403 – COM records, “Medic” reports “on scene. Severe injury heavy bleeding leg bent back. Still conscious & talking” *Note: it was determined there were no medics on scene at this time.*

0:23

The Day of the Incident: July 25, 2008

- 1403 – COM called TSO with better directions for ambulance to the Dutch Creek incident site
- COM told TSO that “A medic is with [FC₁], little bleeding. He is conscious”
- *Twenty-three minutes have elapsed since the accident.*



0:23

The Day of the Incident: July 25, 2008

- 1406 –TCLS requested, “Can you send search and rescue? We have to walk off the trail and if fire rescue is not responding I need a basket, Stokes”
- Fire Rescue replied, “Responding with two”.

0:26

The Day of the Incident: July 25, 2008

- 1419 – SOF called TSO and requested helicopter
- TSO responded, “I already checked on the availability of the helicopter and they are not, they are declining to fly due to smoke”
- TSO reported they had checked on Reach and PHI /Mercy Air helicopters but not CHP
- SOF suggested checking with Coast Guard.

0:39

The Day of the Incident: July 25, 2008

- 1428 – SOF called TSO for helicopter update. TSO replied, “They haven’t called you yet? I gave them your 6120 (ICP land line) number. They were going to call you direct.” TSO advised SOF that CHP is not available and US Coast Guard was the last option
- ~1428 – CRWB2 called COM reports, “[FC1] talking, awake in and out, numbness of tongue, lifting head, damage to shoulder and leg” .

0:48

The Day of the Incident: July 25, 2008

- 1430 – DIVB called CRWB2, “Getting helicopter, need people by the road”
- CRWB2 answered, “Have one crew member from Flying Eagle engine”
- DIVB asked, “Are they a medic?” CRWB2 answered, “No, EMT basic”
- DIVB stated, “Want medic at rig before they get [FC1] off the hill”
- 1430 – CRWB2 called COM, (FC1) “conscious, stable” .

0:50

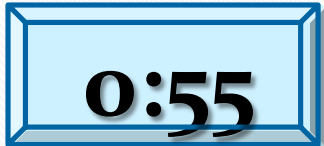
The Day of the Incident: July 25, 2008

- 1434 – SOF called USCG to see if helicopter is available
- SOF gets ETA of 40 minutes from time of ordering the USCG helicopter.

0:54

The Day of the Incident: July 25, 2008

- 1435 – Ambulance at road: P1 and P2 arrived at patient, performed initial assessment. Wildland Nomex shirt, chaps, and clothing removed and replaced with ABD pads, Kerlix, and trauma dressing. Direct pressure applied and maintained to control bleeding
- Ambulance personnel took supplies and equipment up the hill that were appropriate for responding to a “broken leg”



The Day of the Incident: July 25, 2008

- 1437 – P2 attempted four peripheral IV starts. Patient blood pressure 110/60, pulse 120, respirations 20
- 1440 – P2 administered 2.0 mg of morphine
- 1443 – SOF called USCG and cancels USCG helicopter
- *Over one hour has elapsed since the time of the accident.*

The Day of the Incident: July 25, 2008

- 1445 – P1 called TSO, requested Medevac and reported, “200-300 cc blood loss”
- TSO called USCG asked, “Hey, are you guys going to head over to Junction City?” USCG replied, “We just talked to [SOF] and he said to stand down”
- TSO responded, “Okay, I just talked to the paramedic on scene”
- Also reported, “Patient is now in and out of consciousness; [FC1] has got blood loss” .

The Day of the Incident: July 25, 2008

- 1447 – P2 blood pressure 110/56, pulse 120, respirations 20
- 1448 – TSO called SAR and reported the “paramedic on scene and that the patient is in and out of consciousness now and lots of blood loss” .

1:08

The Day of the Incident: July 25, 2008

- 1449 – TSO called SOF and reported having talked to the paramedic on scene, and patient was in and out of consciousness
- SOF reported having just gotten off the phone with USCG and, “we are going to go ahead and use the USCG and hoist [FC1] out” .

1:09

The Day of the Incident: July 25, 2008

- 1450 – Paramedic 1 established peripheral IV left hand.
- 1450 – Paramedic 2 applied vacuum splint to FC1 lower left extremity
- 1455 – Paramedic 2 applied oxygen
- *It has now been one hour and fifteen minutes since the accident.*

1:15

The Day of the Incident: July 25, 2008

- 1510 – TSO called SAR and reported there was another engine that could respond to assist with the extraction
- SAR stated, “Anybody I can get. I got a critical patient”.



1:30

The Day of the Incident: July 25, 2008

- 1511 – TSO called USCG for an updated ETA on the helicopter. USCG advised 30 minutes
- 1512 – Paramedic 3 arrives on-scene and told Paramedic 2 to stop moving FC1 that they “*have to start managing [FC1]*”.



1:32

The Day of the Incident: July 25, 2008

- A firefighter relayed to COM, from Paramedic 3, they would “*keep [FC1] in the spot. Don’t carry to the road*”
- 1515 – Paramedic 2 applied direct pressure using a shirt
- *Andrew Palmer has been bleeding from his femoral artery for one hour and thirty-five minutes.*

1:35

The Day of the Incident: July 25, 2008

- 1530 – SAR called TSO and reported, “For your info our patient is going down. Is there any way we can expedite that helicopter?”
- 1531 – TSO called USCG. USCG reported, “They just got off of ground and should be there in 15 to 20 minutes”
- TSO responded, “Okay, could you let them know the [FC1] is crashing, and I know they are going to get there as quickly as they can” .

The Day of the Incident: July 25, 2008

- 1542 – SAR called (by cell phone) TSO and reported, “Hey, this patient has far more than a broken leg. He’s got open gashes all over [body]. A tree took him out and we are having a hard time keeping him awake and stuff. So they have got him hooked up on O₂ and the monitor. So I couldn’t put that on the air, but he’s in pretty bad shape and what we are doing right now is cutting down trees to get him hoisted out” .

The Day of the Incident: July 25, 2008

- 1600 – P3 reported, “Patient heart rate 136, still conscious, open femur fracture, open shoulder fracture, medical still in route”
- 1605 – DIVB called with update on FC1. “BP 100, HB 136, broken left tibia, one IV in, couldn’t get second, 1500 ccs fluid, sinus tachycardia rhythm” .



2:23

The Day of the Incident: July 25, 2008

- 1605 – heard USCG helicopter arriving on scene
- ~1621 – FC1 transferred to USCG litter, reports FC1 breathing turned into agonal breaths
- ~1624 – FC1 was hoisted.



2:44

The Day of the Incident: July 25, 2008

- 1631 – USCG helicopter reported to USCG en route to Redding with FC1 and one paramedic (P3) on board
- *It has now been two hours and 50 minutes since the accident.*



2:50

The Day of the Incident: July 25, 2008

- 1635 – P3 reported patient pulseless and apneic
- 1636 – P3 administered 1.0 mg epinephrine
- 1637 – Shock advised (shocked @150 j biphasic)
- 1639 – P3 re-evaluated FC1--no shock advised
- 1640 – EKG-Asystole
- 1642 – Patient re-evaluated--no shock advised
- 1647 – FC1 remained pulseless and apneic,
BLS CPR continued
- 1647 – P3 used all drugs on hand.

3:07

The Day of the Incident: July 25, 2008

- 1703 – CPR in progress in USCG helicopter
- 1705 – USCG helicopter arrived at Redding airport (Jet Center)
- 1710 – Mercy ER physician pronounces time of death via radio at Redding Jet Center
- *It has been a total of three hours and thirty minutes since Andrew Palmer was struck down by the tree.*



3:30



That was the Incident...

... What are YOUR Questions?



The “What!?!” Questions

- Although the falling crew were verbally reminded not to cut any tree over 24 inches, *they chose to cut a 36.7 inch tree which they were not qualified to cut*
- Although the emergency radio transmission stated “broken leg, bleeding” the ambulance was dispatched for a “*possible* broken leg”
- Even though subsequent radio transmissions stated “severely bleeding” the ambulance was told “*little bleeding*”.

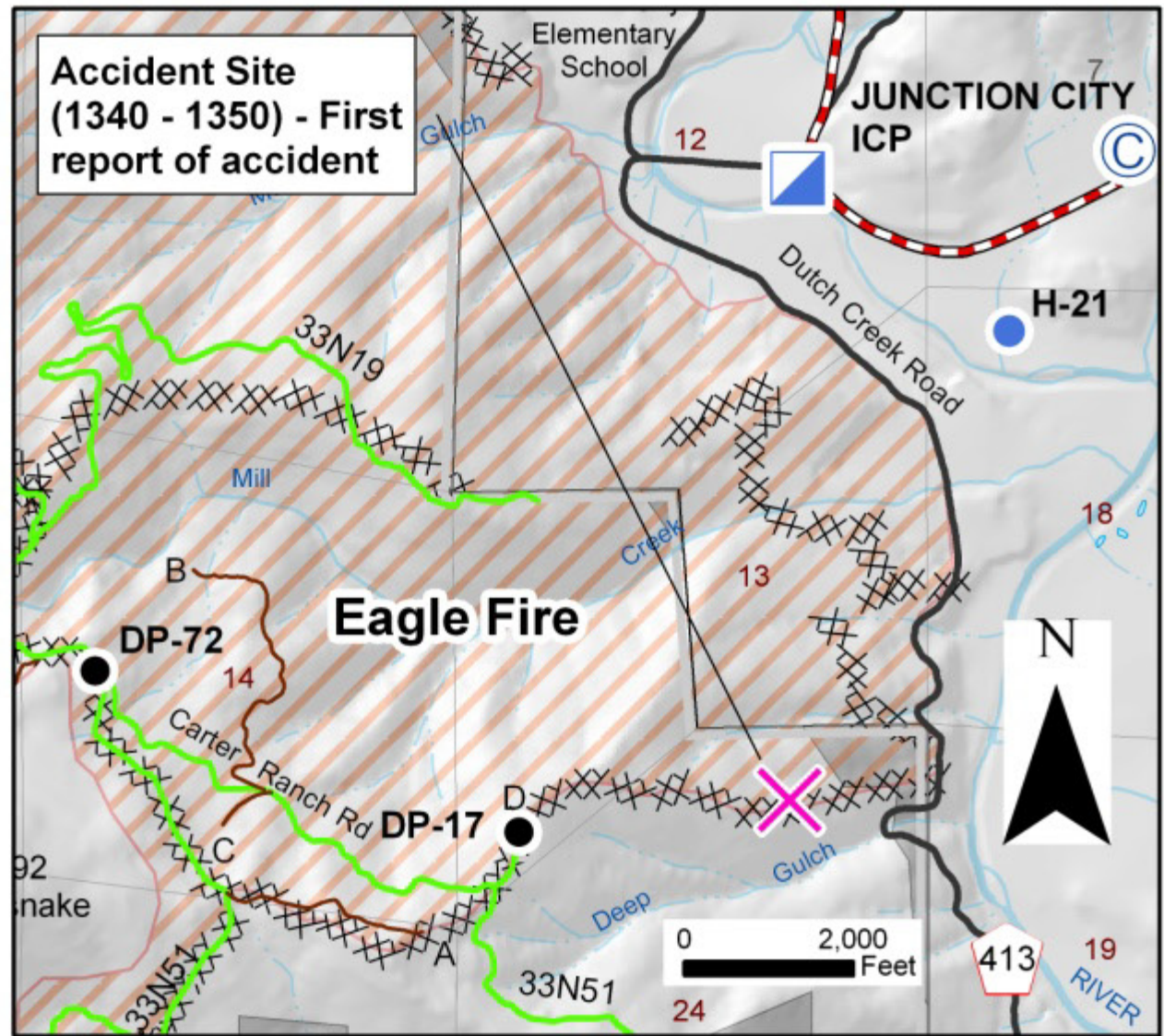
The “What!?!” Questions

- Even though the patient was “in and out” of responsiveness, the radio transmission two minutes later stated he was “*stable*”
- The patient’s clothing was not removed until *one hour post-incident*
- One hour post-incident the patient’s blood pressure 110/60, pulse 120, respirations 20 – *definite signs of shock...*
- *Yet two minutes later the Paramedic estimated blood loss of 200-300 cc.*

The “What!?!” Questions

- Even though the “patient is in and out of consciousness now and lots of blood loss”, no oxygen was applied until *one hour and fifteen minutes post-incident*
- Even though two other Paramedics were on scene, and the patient was critical and in shock, *the third Paramedic stopped progress to the road (and ambulance) to “manage the patient”*.

The Map



The “What!?!” Questions

- *Where's the MEDL?*
- 1403 - COM reported USFS “also have another emergency, medical in our ICP camp, its acid reflux, burning chest pain. They believe it's acid reflux, burning chest pain, but they called for an ambulance
- Why was the helicopter canceled?.



Incident Findings

And NWCG

Recommendations

The Patient: Coroner's Report

- **FC1's major injury was described as a crushing blunt force injury of the left thigh**
- **There was a laceration with a maximum length of 12 inches and approximately 9 inches wide**
- **There were comminuted fractures of the left femur**
- **Examination of the wound depth revealed ragged transections of the femoral artery and its major branch, the deep femoral artery.**

The Patient: Coroner's Report

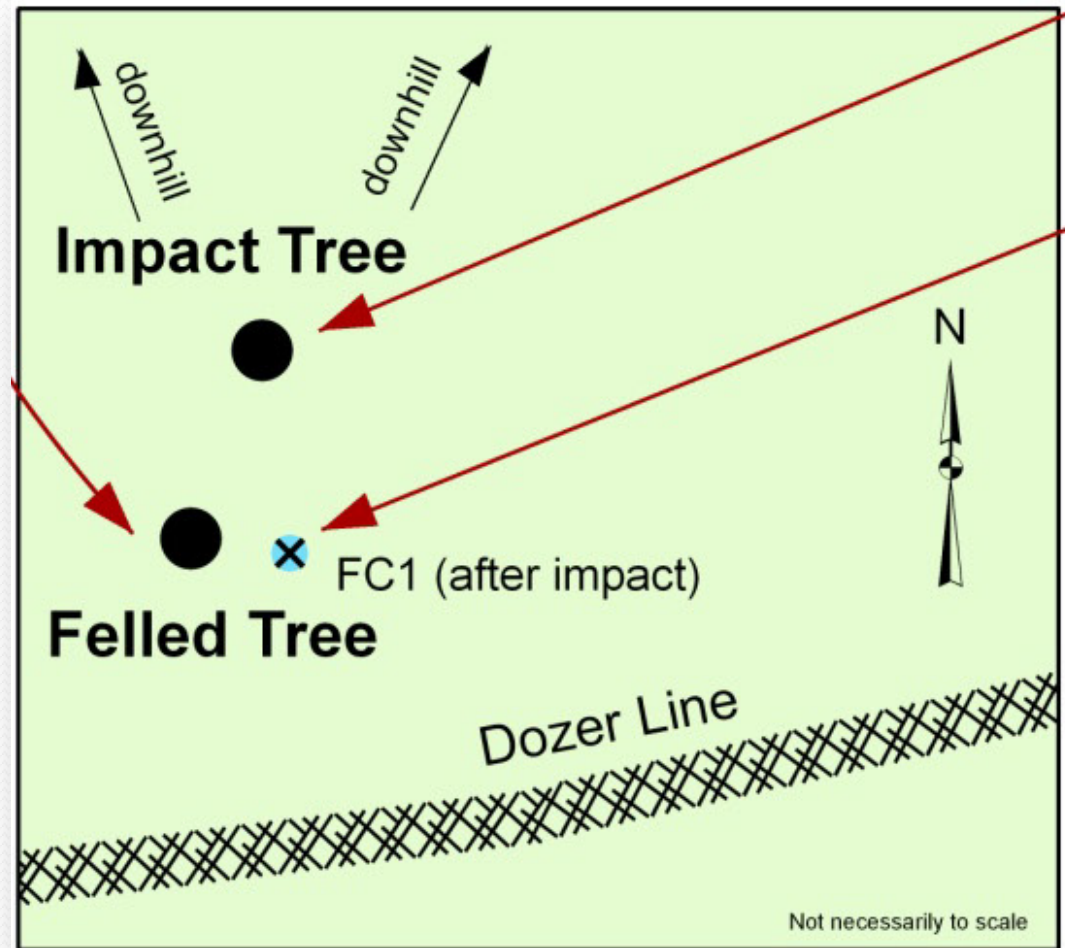
- Though the initial wound dressing was referred to as a “tourniquet” by some witnesses, *no tourniquet was applied. (there was no windlass present)*
- P1, P2, and coroner (MOI) stated that a *tourniquet could not be used on FC1 because of the location and nature of the wound*
- The Coroner later determined the cause of death to be blood loss due to blunt force trauma to FC1's left leg.

The Findings

- **Falling Accident:**
 - **Causal Factors:**
 - **The Crew exercised poor judgment in the decision to cut a “class C” tree above their “class B” qualifications which resulted in Palmer being struck by a piece of sugar pine tree, 8 feet long and approximately 20 inches in diameter**
 - **Palmer was standing within the falling area and failed to effectively utilize an escape route to get to a safety zone.**

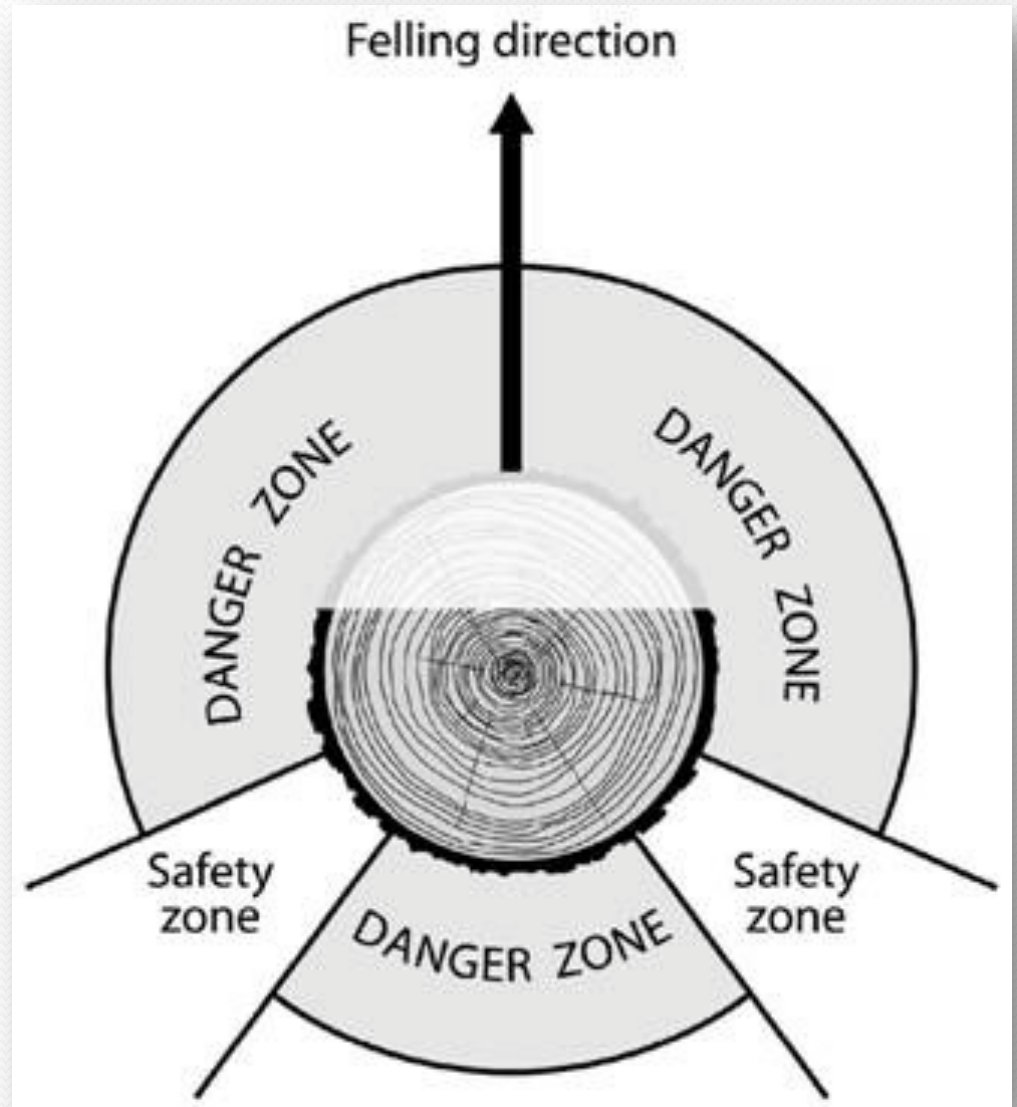
The Findings

- The injury site is 35 feet from Tree 1.



The Findings

- It is unknown what escape route the faller used and where the faller was when Tree 2 fell upslope.



The Findings

- **Medical Treatment / Evacuation:**
 - Causal Factor
 - Failure to adequately control FCI's arterial bleeding of the left femur injury received during a tree falling accident resulted in death due to excessive blood loss.



The Findings

- Contributing Factors

- HUMAN

Item 1. There was inadequate accident scene command and control which led to a failure to communicate the extent and severity of the injuries and to evaluate the most appropriate evacuation method

Item 2. There was inadequate transfer of patient care from P2 to P3 in violation of the Nor-Cal emergency medical services policy.

The Findings

- HUMAN / ENVIRONMENTAL

Item 3. There was a delay in delivering FC1 to definitive medical care because personnel involved in the incident focused on the use of air resources, most of which were unavailable due to the smoky conditions.



NWCG Recommendations

- The Medical Pages in the IRPG was developed to prevent this kind of accident
- It changes the Medical Plan ICS 206 – adds Block 8, Emergency Medical Procedures
- Expanded to include the following nine items of information:.