

**State of Alaska
Department of Natural Resources
Division of Forestry**

Director's Office

550 W. 7th Ave., Suite 1450
Anchorage, Alaska 99501-3566

Safety Office

101 Airport Road, Aviation Hangar
Palmer, Alaska 99645

This document is intended as a safety and training tool, an aid to preventing similar future occurrences, and to inform interested parties. The information contained in this report is subject to revision upon further investigation and/or should additional information become available.

FACTUAL REPORT

Facilitated Learning Analysis

Type of Incident:

ZigZag IHC member hit by falling tree

Location:

AK-DOF, Hastings Fire, Fairbanks, Alaska

Date of Accident/Incident:

June 16, 2011

Investigation Team Members:

Rocky D. Ansell, Statewide Safety Officer, State of Alaska, Division of Forestry, Palmer

Gary Lehnhausen, Fire Safety & Training Specialist, US Forest Service – Alaska

Dave Hade, SOF2 Hasting Fire, BLM – Alaska Fire Service



Special commendations are warranted for the quick actions of personnel present on this incident, including:

- Alaska Type I Incident Command Team
- ZigZag, LaGrande & Rogue River IHCs
- Tempsco N83230 Pilot and Helicopter Manager
- Crew EMTs, Alaska Fire Medics and other medical personnel

Per the guidance provided to the investigation team by the Alaska Division of Forestry, Chief of Fire & Aviation, this investigation utilized a modified “After Action Review” format aligned with the principles of a “Facilitated Learning Analysis”.

The investigation team referenced the following documents for guidance in their efforts to obtain information, complete their findings and document this incident:

- Interagency Standards for Fire and Fire Aviation Operations 2011
 - Chapter 7, Safety & Risk Management
 - Chapter 18, Reviews, Investigations & Analyses
- USDA Facilitated Learning Analysis Implementation Guide, April 2011
- Incident Response Pocket Guide (IRPG), January 2010
- 2010 Alaska Handy Dandy Firefighting Field Guide

Type of Event

A fire weakened tree fell on IHC member.

Summary

At approximately 1820 hours (ADST) on June 16, 2011 while conducting mop-up operations on the Hastings Fire, near Fairbanks, Alaska, a member of the ZigZag IHC was struck by a tree. A medium helicopter already working the fire was quickly staffed with medical personnel and used to extract the injured crew member from a rapidly improved sling spot near the injury location. The injured crew member was then flown directly to Fairbanks Memorial Hospital. After initial treatment the crew member was flown to Providence Hospital in Anchorage for additional tests and treatment. He was released from the hospital on 06/17, evaluated again on 06/18 and released for travel to his home unit.

Sequence of Events

At approximately 1825 hours an “emergency traffic” was announced over the radio for a member of the ZigZag IHC who was assigned to mop-up operations on Division R of the Hastings fire. While working in the area of Sling-13 a tree with a burned out shallow root system fell and made contact with the crew member. A medium helicopter working the fire was quickly loaded with medical personnel, while ZigZag, LaGrande and Rogue River crew personnel worked at

expanding the sling site to accommodate a medium helicopter which allowed for the rapid extraction of the injured crew member. Per the radio log, at 1920 hours the helicopter, with the patient, was airborne for the short flight to Fairbanks Memorial Hospital (FMH). Upon arrival at the FMH emergency room he was treated for head, shoulder and rib injuries. After initial evaluation and treatment he was medivaced to Providence Hospital in Anchorage, Alaska in the company of the ZigZag IHC Assistant Crew Superintendent for additional tests and treatment. On June 18th the ZigZag IHC crewmember was released for travel home and expected to make a full recovery.

Conditions

- Weather: Temperature 62 F, RH 47%
- A review of the Chatanika RAWS for 06/16/2011 indicates wind speeds of 3 -5 MPH. Field witness statements were made indicating “no wind” at the site where the injury occurred.
- Mixed timber stand comprised of 8 – 10 inch aspen and 12 – 24 inch white spruce on an estimated 20% slope.
- Shallow duff layer with areas where the fire had penetrated to mineral soil.
- The tree which impacted the IHC member had a very shallow root system that had not been impacted by any other activities other than the fire.
- Other fallen trees near the base of the impact tree prevented it from falling all the way to the ground. This prevented more serious injury to the crew member.
- Review of the training records provided by the home unit indicates appropriate training & experience.

Recommendations

- Hazard tree identification and hazard mitigations are necessary even if trees are green and appear to be undamaged by fire (ensure L48 crews are well briefed).
- Provide proper maintenance and use of approved PPE (hardhat).
- Adjust Mop-up criteria to suit values at risk and include hazard tree assessment considerations.
- Buddy system – one works & one watches (as practical).
- Risk Management practices which may include alternative mop-up procedures, including area avoidance if necessary.

Lessons Learned

- ✓ Risk can only be managed; not eliminated.
- ✓ Ensure “Incident Within an Incident” plan is clear and understood.
- ✓ Assess and develop helispots and medivac sites along firelines in strategic locations based on operational plans prior to needing them.

- ✓ Utilize LCES as related to mop-up in timber stands with weakened and shallow root systems.
- ✓ Provide continuous reminders of the hazards associated with shallow and burned root systems in burned areas (Alaska Briefing, IAP, safety messages, crew briefings and etc)
- ✓ Ensure and enforce the proper use of approved PPE (hardhat). In this case the use of an approved hardhat likely saved the crew members life.

Attachments

Photographs:

- Hastings IAP for operational period 06/14/2011
- Hastings IAP Snag Safety Message for 06/14/2011
- Hastings Fire 215A for 06/16/2011
- Tree Root
- Tree at point of impact
- Helmet Exterior
- Helmet Suspension
- Hastings fire map
- Fairbanks area topographic map



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Photographic Documentation

Incident: Hastings Fire
AK-FAS 111271

Location: Near Fairbanks, Alaska

Description of Photograph: Scan of Hastings IAP for 06/14/2011

Incident Objectives	1. Incident Name HASTINGS	2. Date Prepared 06/13/11	3. Time Prepared 2010															
4. Operational Period 06/14/11 Tuesday Day Shift 0700 - 2300																		
5. General Control Objectives for the Incident (include alternatives) 1. Provide for safety of firefighters and the public. 2. Contain the southern perimeter north of the Chatanika River and protect values at risk located along the Chatanika River. 3. Contain the fire west of Hayes Creek subdivision and the Trans-Alaska Pipeline. 4. Protect structures in subdivisions along Old Murphy Dome Road. 5. Hold the fire south of Washington Creek drainage using minimal suppression impact tactics including monitoring, hot spotting, and extinguishing spots as they occur north of the creek. Minimize firefighter exposure and costs by reducing resource commitment on the ground. 6. Contain the fire east of the Hard Luck Fire scar. 7. Prepare and disseminate information for media, affiliated agencies, Fairbanks North Star Borough, and local residents. Keep surrounding communities advised of smoke conditions and potential impacts by holding public meetings and daily press releases.																		
6. Weather Forecast for Period More showers and thunder storms today !!!																		
7. General Safety Message See the Hazard Tree Awareness insert.																		
8. Attachments (mark if attached) <table border="0"><tr><td><input checked="" type="checkbox"/> Organization List - ICS 203</td><td><input checked="" type="checkbox"/> Incident Map</td><td><input type="checkbox"/></td></tr><tr><td><input checked="" type="checkbox"/> Div. Assignment Lists - ICS 204</td><td><input checked="" type="checkbox"/> Safety Message</td><td><input type="checkbox"/></td></tr><tr><td><input checked="" type="checkbox"/> Communications Plan - ICS 205</td><td><input checked="" type="checkbox"/> Traffic Plan</td><td><input type="checkbox"/></td></tr><tr><td><input checked="" type="checkbox"/> Medical Plan - ICS 206</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td><input checked="" type="checkbox"/> Air Operations Summary - ICS 220</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>				<input checked="" type="checkbox"/> Organization List - ICS 203	<input checked="" type="checkbox"/> Incident Map	<input type="checkbox"/>	<input checked="" type="checkbox"/> Div. Assignment Lists - ICS 204	<input checked="" type="checkbox"/> Safety Message	<input type="checkbox"/>	<input checked="" type="checkbox"/> Communications Plan - ICS 205	<input checked="" type="checkbox"/> Traffic Plan	<input type="checkbox"/>	<input checked="" type="checkbox"/> Medical Plan - ICS 206	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Air Operations Summary - ICS 220	<input type="checkbox"/>	<input type="checkbox"/>
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<input checked="" type="checkbox"/> Medical Plan - ICS 206	<input type="checkbox"/>	<input type="checkbox"/>																
<input checked="" type="checkbox"/> Air Operations Summary - ICS 220	<input type="checkbox"/>	<input type="checkbox"/>																
9. Prepared by (Planning Section Chief) Joe Ribar		10. Approved by (Incident Commander)																
ICS 202		Final																
		Page of ICS 202 Forms																



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Location: Near Fairbanks, Alaska

Description of Photograph: Scan of Hastings Snag Safety message 06/14/2011

SNAG SAFETY

Environmental conditions that increase snag hazards:

- Strong winds
- Night operations
- Steep slopes
- Diseased or bug-kill areas

Hazard tree indicators:

- Trees have been burning for an extended period
- High risk tree species (rot and shallow root system)
- Numerous down trees
- Dead or broken tops and limbs overhead
- Accumulation of down limbs
- Absence of needles, bark or limbs
- Leaning or hung-up trees



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Location: Near Fairbanks, Alaska

Description of Photograph: Scan of Hastings 215a 06/16/2011

Major Hazards and Risks	Divisions, Groups, Locations										Ops
	G	K		G	C	S	T	V	ESG	Specific Mitigation	
Potential for Extreme Conditions										LCES - Safety Zone Air Attack	
Downhill Line Construction					✓			UNSAFE		Indirect Line Anchor Pts.	
Steep slope, Under slung Line					✓					LCES Patrol	
Unburned Area/Reburn Potential Near Operations										LCES Lookouts	
Major Firing Operations										LCES, Briefings Maintain S.A.	
Steep Terrain		✓				✓	✓			Watch Footing Maintain Spacing	
Air Operations/Multiple Aircraft		✓			✓	✓	✓			Comms: Air/Ground Medevac Plan	
WUI Structure Protection										Structure Protection Evils Hazmat	
Road Conditions, Heavy Mixed Traffic, Travel Distance										Defensive Driving Maintain S.A.	
Hazard Trees/ Snags		✓		✓	✓	✓	✓			Recon Areas Hazard Tree Guides	
Environment Weather Conditions, Animals, Insects, Plants, Smoke Bears		✓			✓	✓	✓			Monitor Wx & Fire/safety Maintain clean & safe camp	
Communications										Human Repetition	
General Poor Health Conditions Fatigue, Illness		✓			✓	✓	✓		✓	2:1 Rest Ratio Personal Hygiene	
BOAT									✓	Weight Limits, Life Vests Monitor water depths	
ATV		✓		✓						Defensive Driving Qualified Drivers	
EQUIPMENT		✓		✓						Dozer Boss	

Prepared By: **PAUL VAN HEESE**
Safety Officer: **PAUL VAN HEESE** SOFA (2) 511-1111
Operations Section Chief: **[Signature]**



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Incident: Hastings Fire

Location: Near Fairbanks, Alaska

AK-FAS 111271

Name of Photographer:

Date & Time Photograph was Taken:

Rocky Ansell

06/20/2011 @ 1107 hours

Description of Photograph: Tree & root system

(arrow indicates the tree that hit the crew person)





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Incident: Hastings Fire
AK-FAS 111271

Location: Near Fairbanks, Alaska

Name of Photographer:
Rocky Ansell

Date & Time Photograph was Taken:
06/20/2011 @ 1112 hours

Description of Photograph: Approximately 6 inch diameter at point of impact





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Incident: Hastings Fire

Location: Near Fairbanks, Alaska

AK-FAS 111271

Name of Photographer:

Date & Time Photograph was Taken:

Dave Hade

06/19/2011

Description of Photograph: Exterior of helmet





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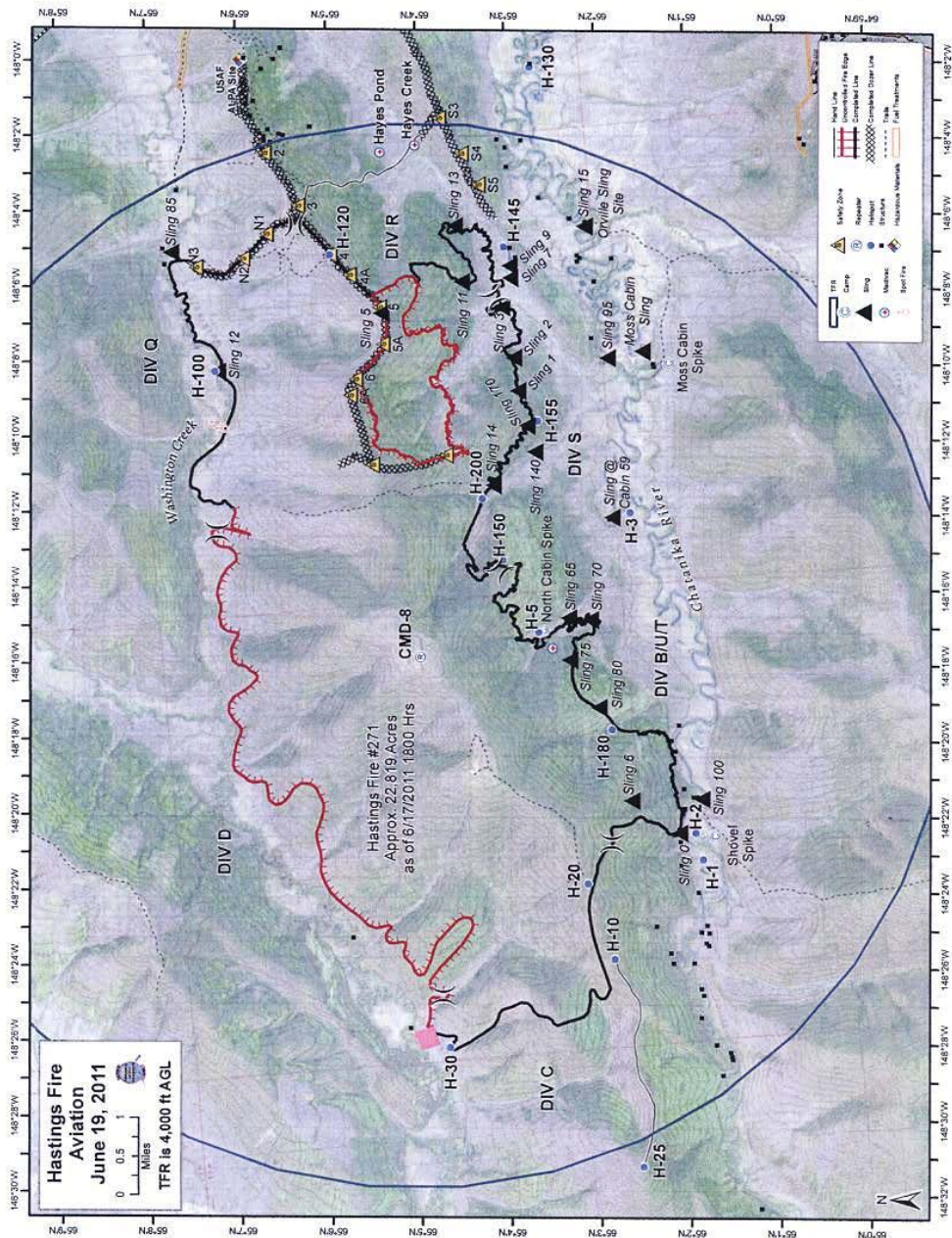
Location: Near Fairbanks, Alaska

Name of Photographer:
Dave Hade

Date & Time Photograph was Taken:
06/19/2011

Description of Photograph: Helmet suspension







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Incident: Hastings Fire
AK-FAS 111271

Location: Near Fairbanks, Alaska

Description of Photograph: Fairbanks Area Topographical Map

