Missouri Ridge Incident Lessons

Follow up action item #1 “develop a tree felling lessons learned, which will include a list of tools (other than a chainsaw) that could be used to mitigate the risk involved in removing hazard trees”.
Specifically “hung up” leaners. These are trees, most often snags that have begun to fall and have become lodged in one or more of the surrounding trees.

This “lessons learned” paper will be disseminated through the region 4 Forest Saw Program Managers. Program Managers will distribute this information to all fallers on the forests to be used as a part of the safety awareness training and refresher process in preparation for the 2006 field season.

- Review Situational Awareness – Individual Complexity Info.
- Review Safety Advisory and 72-Hour Briefing (attached)

The majority of our sawyers are routinely confronted with this “hang up” situation during project work and fireline operations. This is potentially the most complex size up assessment and cutting situation that we will be confronted with. During the size up process the sawyer must also consider the following:

- Do we really have to work around or under it?
- Is this truly a hazard and will cutting on it make it more of a hazard?
- Ask yourself; What are the risks of removing it?-What are the risks of leaving it?
- If you do decide to begin cutting make sure you base your decision on; "I FEEL COMFORTABLE WITH THE SAWING SITUATION, I WILL CUT IT" or "I DON'T FEEL COMFORTABLE WITH THE SITUATION, I WILL WALK AWAY FROM IT". Do not base your decision on "I THINK I CAN DO IT".
- **Do not count on someone else to warn you of falling debris**. It is unlikely that you would hear a warning shout or signal while working with earplugs and a running saw. Having a swamper close enough to touch or tap with a stick etc. should be considered unnecessary exposure to additional personnel.
- Consider other options to cutting;

1. **ESTABLISH A NO WORK ZONE AND WALK AWAY!!**
2. Heavy Equipment
3. Cable-Wench
4. Explosives
5. ??? (discuss and see if you can come up with more options)

This is just a small part of what we should consider during falling operations. We have the training and the tools available to help minimize the risks involved. Let’s use them.

Robert Barrett
Region 4 Chainsaw Program Manager

United States Department of Agriculture
Forest Service
Safety Advisory

DATE: September 23, 2005

SUBJECT: Hazard Trees

AREA OF CONCERN: All operations involving hazard tree assessment, mitigation, and felling

DISCUSSION: Recently, a firefighter was seriously injured while attempting to fell a "hang-up" hazard tree (pictured below). Details of the incident are included in the attached Expanded 72-Hour Briefing.

For decades, hazard trees have been associated with numerous deaths of people assigned fire operation and project work. Incidents involving hazard trees in the top 3 categories of accidental deaths of Forest Service employees, along with wildfire entrapments and motor vehicle accidents. In the private sector, logging is recognized as the most hazardous occupation in the nation, and many associated fatalities involve hazard trees. Moreover, hazard tree dangers mount in areas where forest health conditions decline.

Notable advancements have been made in our understanding of the chronic safety problem associated with hazard trees, while the demand for trained and skilled employees required to manage this high-risk environment continues to increase. The Hazard Tree Awareness and Prevention Program – R8, Hazard Tree Safety/Up-The-Anti – R1, Interagency Hazard Tree JHA, S-212 Chain Saw Training Course update, and Regional Chain Saw Training/Certification programs are solid examples of actions taken to strengthen our ability to safely manage hazard trees.

The purpose of this advisory is to serve as a reminder of how vital it is to constantly apply and maintain situational awareness and wariness, particularly when faced with a hang-up hazard tree. In most cases, safely handling a hang-up requires extreme caution and expertise due to characteristic complexity. The following are some topics advanced sawyers should review during 6 minutes for safety/tailgate safety discussions and cover in training modules specifically designed to address hang-up hazard trees:

- Establish Cut/No Cut (walk-a-way) criteria
- Risk assessment
- Situational awareness checklist
- Secure area
- Relocate work area
- Blasting option
- Equipment/cable option
- Role/responsibility of swamper/lookout
- Use of warning devices
- Pushing/driver tree opportunity
- Felling trees tied together
- Sidewinder potential
- Hazards of obscured view of top
- Need to keep looking up
- Weak/spiked tops, limb location/condition/density, and hidden defect/rot
- Prescribed step down (fence post/wafer) cutting techniques
- Escape route procedures following each step down cut

File Code: 6730 Date: September 11, 2005

Route To:

Subject: Expanded (72-Hour) Briefing
Missouri Ridge Tree Felling Incident
Krassel Ranger District, Payette National Forest
September 6, 2005, approximately 1158

To: Mary Wagner, Acting Regional Forester

THE FOLLOWING INFORMATION IS PRELIMINARY AND SUBJECT TO CHANGE

The accident occurred on the 6,500+ acre Missouri Ridge Wildland Fire Use (WFU) Fire which is part of the 40,000+ acre Frank Church WFU complex that has been burning since August 1, 2005. The Missouri Ridge Fire is located on the Krassel Ranger District, Payette National Forest 50 miles northeast of McCall, ID.

While conducting saw line hazard tree felling operations, the top of a snag broke off, and struck the hardhat of a Class C sawyer. This caused significant injuries which included a linear skull fracture, vertebral fracture and multiple rib fractures. The nearby swamper immediately provided emergency first-aid, and activated the planned medical evacuation procedure. The injured sawyer received advanced medical care by adjacent Fire Use Module EMTs within minutes of the accident.

An effective evacuation involving the entire Division/Group including Helitack, Hotshots, and Overhead which resulted in a prompt and successful patient transfer to a Life Flight Helicopter standing by in a nearby emergency medi-vac landing zone. The injured sawyer was flown and treated at Saint Alphonsus Regional Medical Center in Boise, Idaho. While the sawyer's injuries were serious, he was released from the hospital, and the outlook for a full recovery and return to the job is positive.

Additional Details of Accident:

The snag was 120 feet tall, 30 inches at the base, and naturally leaning into a larger green tree. There was no fire in the snag or on the nearby ground. The sawyer was step-cutting the lower sections from the snag base, in an effort to lower and move it towards the base of the green tree so the snag would fall to the ground. As the second section was cut and released, an approximately 20 foot / 41 pound top section broke loose and fell, while the sawyer was next to the base of the snag. The hardhat sustained a small indentation and crack, and the liner remained secure and intact. The hardhat will be sent to the Missoula Technology and Development Center (MTDC) for future fact finding analysis.