Application of Retardant Into Avoidance Area
Lawler Incident
Facilitated Learning Analysis

"We thought we were doing everything right.
That is why we are so surprised this happened."

January 2012

U.S.D.A Forest Service, Pacific Southwest Region,
San Bernardino National Forest

Introduction

Fire retardant was aerially applied to a designated avoidance area during suppression of the Lawler Incident, San Bernardino National Forest. To foster organizational learning, the Forest initiated a Facilitated Learning Analysis (FLA).

WHAT HAPPENED

At approximately 0300 on Sunday January 8th, 2012, a vegetation fire was reported in the Lawler Lodge/ Black Mountain area of the San Bernardino National Forest. The initial response and command was under Cal Fire until a Forest Service Incident Commander assumed control at 0400. The fire began to increase in intensity and size and was difficult to control due to significant snags within the fire area that were casting embers far out ahead of the main front.

Photo Courtesy of Idyllwild Town Crier

> "One of the biggest issues we had were snags catching on fire and up to 50 mph winds showering embers everywhere". … "Smoke was moving to the south and east, but it swirled" *IC*

> "The fire spotted across dry creek and became established to ¼ acre pretty quick, and reports from the troops up there were that it was spotting and spreading pretty fast". *IC*

Ahead of the fire was the community of Eagles Nest. This community is made up of seven residences, four of which are primary residences. The IC enlisted the help of a Cal Fire Battalion Chief to advise the residences of the fire and the proximity to their homes.

> "Residents of Eagle's Nest Community were contacted at 0640" but not evacuated. *IC*

> Around 0610, "I ordered more resources and helicopters" *IC*

Only one of the helicopter orders was filled (Helicopter 301) and the IC was advised that the other order would need to be filled through the National Interagency Coordination Center (NICC). The IC was also advised that Hemet Ryan Air Attack Base had Air Attack 500 and Tanker 93 and 94 available if he wanted them.

Photo Courtesy of Idyllwild Town Crier - Photographer J.P.Crumrine

Based upon the inability to get a second helicopter and the values at risk, the IC ordered the Air Attack as well as the two Air Tankers.

"There was another new spot, probably 50 [feet] by 100 [feet]…hearing from ground forces that there were lots of additional spots. Based on that, I made the decision to order Air Attack and the Air Tankers". *IC*

Air Attack 500 arrived on scene at 0730.

"When Air Attack was over the scene I thought it was about 15 to 20 acres, he thought it was about 10 – 15". For the retardant application, the IC directed Air Attack to "anchor off the road towards the head, and tie back to the highway" and to "put retardant on a ridge between the houses and the fire and bring it all the way back down to me". His vehicle was on the highway and visible to Air Attack. "They did exactly what I asked". There were two S2 air tankers and they each made 4 drops at 1000 gallons each.

Excerpts From: ***National Aerial Application of Fire Retardant on National Forest System Land Record of Decision***- In December of 2011 the Chief of the Forest Service signed the above document. The following are excerpts from that decision:

Aerial retardant drops are not allowed in mapped avoidance areas for threatened, endangered, proposed, candidate, or sensitive (TEPCS) species or in waterways. This national direction is mandatory and would be implemented except in cases where **human life or public safety** is threatened and retardant use within avoidance areas could be reasonably expected to alleviate that threat. When an application occurs inside avoidance areas for any reason (which this document refers to as a 'misapplication'). It will be reported, assessed for impacts, monitored, and remediated as necessary (p. 2).

All other fire suppression tactics are still available with avoidance areas. I want to emphasize that Firefighter and public safety continues to be our number one priority (p. 2)

My Decision will be **implemented immediately…** (P.23)

At “0820 the first air tanker drops started”. Helicopter 301 was on scene but it was too windy and the helicopter set down at the helibase. The swirling wind was a factor that influenced the retardant drops and it appeared the Air Tankers were flying a line that compensated for the drift.

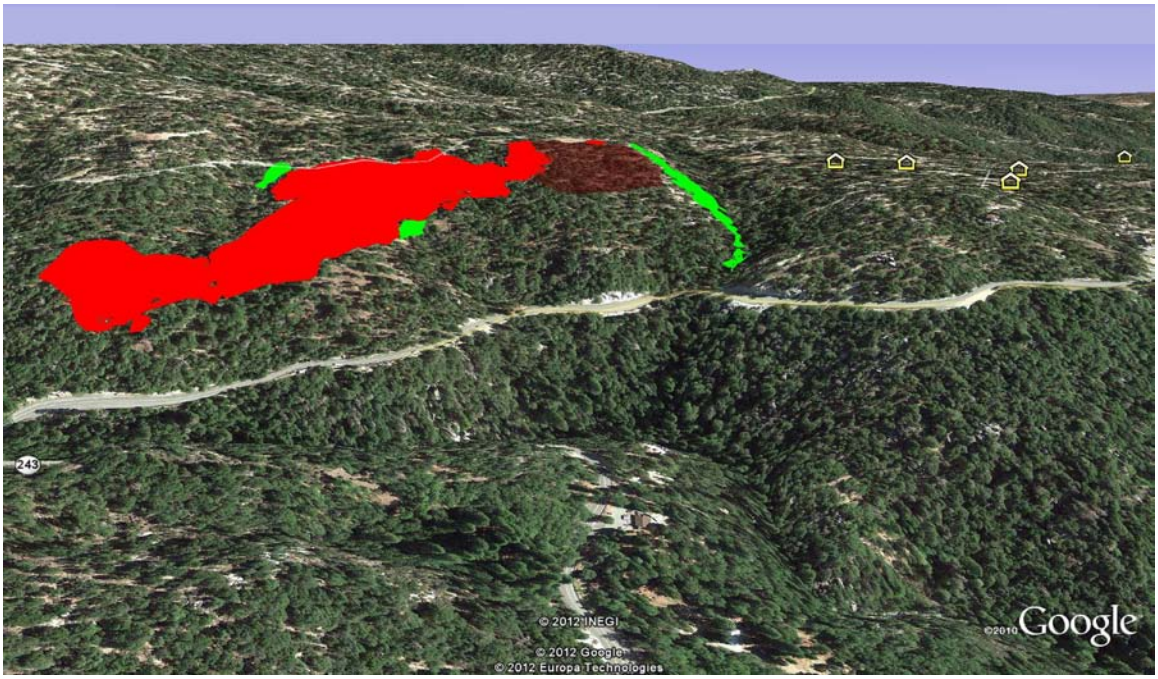
“I couldn’t see the drops, so no; I couldn’t tell how far the drift was”. IC

The IC was acutely aware that adjacent to the fire were several retardant avoidance areas. “I was aware that North Fork was an avoidance area…also knew Fuller Mill Creek was bad [an avoidance area]”. The IC was not aware that retardant was being dropped in an avoidance zone, regardless; the IC’s rationale for using retardant was to protect the public at Eagle’s Nest and the fire fighters that would have to protect these houses.

> “My [avoidance area] map was not with me, it was at my office to add the new map inserts which included the new avoidance area.” IC

The 2009 version of the map book did not show the area where the retardant was applied as an avoidance area, the 2010 and 2011 updates did. For reasons unknown, the hard copies of the 2010 updated maps did not make it into the hands of key personnel including the Lawler IC.

None of the firefighters or any of the fire leaders on the Lawler Incident had the 2011 or 2010 maps on scene. None of the firefighters involved nor any one on the district knew the specifics or particulars of the changes resulting from the recently signed 2011 EIS.



AERIAL VIEW OF LAWLER FIRE: BRIGHT RED = FIRE AREA; DARK RED = AREA OF HEAVY SPOTTING; BRIGHT GREEN = MAPPED RETARDANT DROPS.

No resource advisor was ordered on the initial dispatch.

The IC transitioned command of the incident with relief IC at 1148 on Sunday. At that point the IC was still unaware that fire retardant was dropped in an exclusion zone. **"**I didn't know that drain (the south draw) was an avoidance area. Would it have made any difference if you knew the south draw was an avoidance area? No. I had firefighter and public safety as my number one priority**"**.

The relief IC became aware that this might have been a possibility later in the day.

Photos of Retardant in Avoidance Areas

Photo's provided by District Biologist

Once the relief Incident Commander became aware that there might have been retardant drops in an exclusion zone, he began to enlist resources to find out exactly where the drops were.

The relief Incident Commander shared the following:

> On Sunday afternoon "I was at the ICP with the District Ranger when she learned from the District Biologist that there were new retardant guidelines. So I became aware that I needed to be thinking about where the retardant drops had been made. "I was not aware of the specifics of the new national guidelines".
>
> I "had the field observer on Monday make a map of exact location of the retardant drops." Monday late afternoon we did know where we had retardant drops, and this is when we discovered we had retardant in an avoidance area.
>
> I did not try to find out if there was some sort of an on-board retardant drop geographic location tracking record.
>
> "Monday night I filled out the report form"

Based on the mapping of the retardant drops, approximately three loads were dropped into the avoidance area.

The District completed the Interagency Wildland Fire Chemical Reporting Form, and the Forest Biologist reviewed it and shared it with the Forest Fire Chief (FMO). It was then sent to the Missoula Technology Development Center where "they compile information for the year". This reporting is "supposed to be sent as soon as possible". *(Forest Biologist)*

> "We sent an emergency consultation Biological Assessment (BA), monitoring plan, and a courtesy copy of the report that went to Missoula to the US Fish and Wildlife Service. We "set up a monitoring plan" for post rain to collect water samples to test for chemicals. We are currently waiting for "a written concurrence from the Fish and Wildlife Service". *(Forest Biologist)*

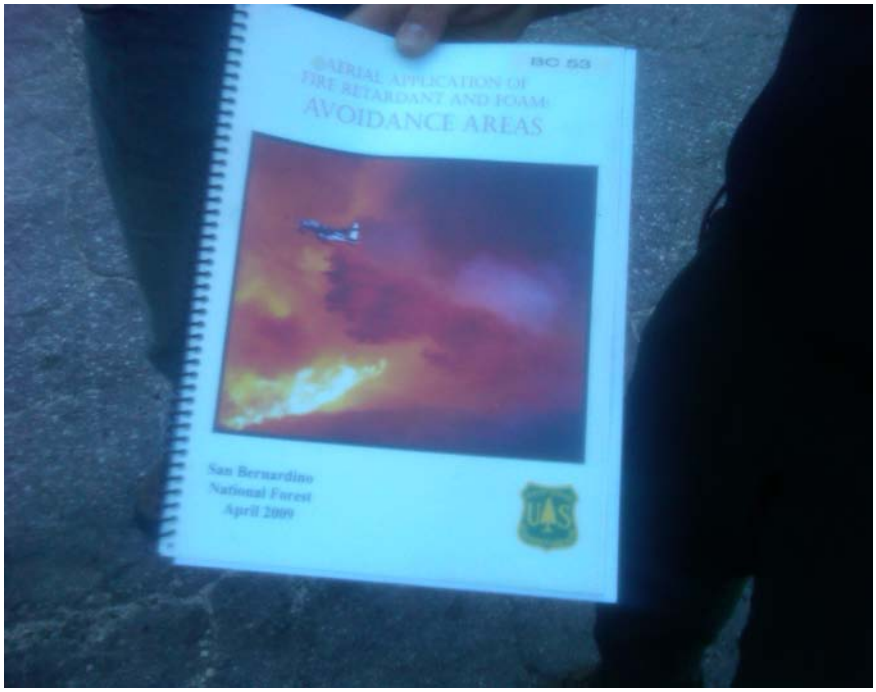
WHAT WAS PLANNED- (what did we set out to do)

San Bernardino National Forest leadership has taken specific measures to ensure personnel involved in fire suppression activities know aerial fire retardant application requirements.

The Deputy Forest Fire Chief said, “We are really proactive, there is a pre-season meeting with fire and resource management folks”…”and also with our cooperators”

The dispatch center’s “run card" (recommended automatic procedure for a dispatcher to follow when notified of a fire) for this area states: …First Alarm: *Request that District Ranger make appropriate resource advisor notification.*

In addition “Chief Officers (District Fire Management Officer or Deputy) have the “**retardant book**” with them in the field”



2009 San Bernardino Retardant Avoidance Areas Book (*Retardant Book*)

The Forest has a map book of fire retardant avoidance areas which was first published and distributed in April 2009. The document was updated in April 2010 and again in April 2011. The 2010 update was distributed and 15 hard copies, plus CDs were sent to the Ranger District. The 2011 update was distributed to the Ranger District electronically to save on printing costs. This would require users to individually print relevant portions and then insert loose pages into the spiral bound Retardant Book to be useful.

The expectation was that ICs and Air Attack and other key fire leadership personnel would have the current updated maps with them and refer to them as needed on all fires on the unit.

LESSONS LEARNED FROM FLA PARTICIPANTS

FIRE LEADERSHIP:

In the future, when I hear about new policy implementation, I am going to be more pro-active in asking questions about how the plan is going to be rolled out.

We need a "who do you call" and a "what do you do" checklist for when these things happen.

CONTEXT: We were all aware that there was new direction coming out concerning the application of retardant on National Forest System land. We were not aware of a timeline for implementing this direction.

These things (the EIS) need to come out with a transition plan, a process and a timeline for implementing. We need time to work with our cooperators. Residents are already afraid we won't be putting fires out anymore.

FIREFIGHTERS:

I am more comfortable about the reporting process for retardant application into an avoidance area now that I have gone through it.

It is absolutely essential to have a positive relationship with district specialists. Because we had this relationship, it made this process a lot simpler, because I was able to defer to their expertise.

We need to have hard copies of the Retardant Avoidance Area Maps given to us. If it is easy for us to get this information we are more likely to use it. Pulling this information off of the Internet or making a copy from a CD is impractical with all of the other work we have to do.

It is not "life" and "property" anymore. Now it is just "life".

You do not have to be afraid of this process. (The retardant drop into avoidance area process)

RANGER:

I think it would help if firefighters had up-to-date maps of retardant exclusion zones. We need to make sure out-of-town fire crews get a briefing on our EIS.

BIOLOGIST:

It is not the size of the fire; it is where the fire is located. This is what everybody needs to key in on.

AIR ATTACK:

If I had a retardant avoidance map on my laptop, I would know where the avoidance areas are.

Some suggested we use water instead retardant in near avoidance areas. This could have been easily accomplished in this situation, but, "…if the IC had ordered water instead of retardant, I would have talked him out of it. Water wouldn't have been effective here."

LESSONS FOR FURTHER CONSIDERATION:

"It is very important that we look at how we communicate the issue of retardant application. There is a significant difference in "misapplication of retardant" versus application of retardant in an avoidance area. …."Misapplication is a negative term. The decision to apply retardant onto an avoidance area for life safety reasons, it is not a *misapplication*." (The EIS refers to retardant application as misapplication (p.2) and the reporting form does as well).

"We need to use technology; in addition to books of maps, a downloadable application that can be referenced on a digital map would be helpful."

"We have to create a culture of learning and ensure that our folks work in an environment where they feel supported and empowered to combine imagination with intelligence in their efforts to do the right thing."

"How do we define a threat to "human life" and "public safety"? These terms can be subjective in a fire environment where everything is happening so fast and Incident Commanders are required to anticipate what is going to happen next."

"This is really a national issue, not a local one. ICs and air attack all across the country need to learn from this."…. "We want to make sure our Incident Commanders feel supported in their decisions."

"We are responsible to protect structures as per our interagency agreements. In some respects we are practically like a structural fire department. This EIS really puts us in the middle with our public."…. "How am I supposed to tell them a resource is more important than their home?"

"We put a hundred plus firefighters on this 15-acre fire. If we didn't hit it hard the fire would have been 600 acres before we caught it and we'd have put 1000 firefighters on it. I don't think we would have hurt anyone in either case but look at the risk. "

"We got goal conflicts - major conflicts: We need to leave snags for wildlife and we need to cut snags for firefighter safety, we need thick vegetation for aesthetics and thin vegetation for fuels mitigation, we need avoidance areas for frogs but we need retardant

to protect people, we save money by not having 24 hour engines then spend many times that savings when we get a 0300 fire."… "There are many conflicting goals of the agency. We need to reconcile these conflicts."

"There are a lot of things that could have made this fire a non-issue. If we had helicopters available, or 24 hours staffing, or if they had let us snag the area when we were doing fuel treatments. Bottom line is that to reduce threats to life and property we need the right tools for the job; 24 hour staffing and helicopters to start."

"We're pretty lucky we have dedicated firefighters. They are not paid to answer the phone at 0300 on a Sunday in January. But they do it. We always do it. Alternative staffing plans need to be considered. We are in fire season year around and we need to staff appropriate to that reality."

"In a sense these maps make me feel more liable. Now if I drop in the wrong place they will say, you have no excuse for not knowing. "

"Having a resource advisor dispatched to the incident immediately would have been helpful."

"We can't have our ICs burdened with layers and layers of policy."

"The Record of Decision implies that given the choice between preserving a T&E species habitat or saving a house, we should save the habitat. Is this what was intended? I do not believe this is aligned with the vast majority of our public's values, as a public servant I am very uncomfortable with this direction."

"It might help if dispatch has retardant avoidance information and has a process for disseminating this to Incident Commanders and Air Attack."

ENHANCING OPERATIONAL RESILIENCE

We need to do a better job of anticipating and planning for unexpected consequences of policy implementation. Many of the participant's statements reflect this.

The degree to which a fire is a threat to firefighter and public safety is often a subjective opinion; sometimes an educated guess. If this EIS is to make any difference in these subjective situations the values of fire ground commanders and line officers need to be aligned with top leadership.

The Forest Service needs to know where retardant is being dropped; how much and where for monitoring the EIS. This could be accomplished by some sort of air tanker onboard monitoring device.

FACILITATED LEARNING ANALYSIS TEAM

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