

## “Learning from the Past,.....for a Safer Firefighting Future”

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A writer/philosopher named George Santayana said that “those who cannot remember the past are condemned to repeat it.” While this is true in all aspects of life, it’s especially relevant to those of us in the business of wildland firefighting. There are only a limited number of combinations of weather, terrain and fuels that can challenge our suppression efforts: recognize those combinations and their implications, and a safe and successful suppression operation will result. Fail to recognize them, and the risks increase that you may not achieve your suppression goal; worse yet, firefighters may become entrapped or killed when critical factors are missed.

The idea of looking back at previous events to help improve future performance is by no means unique to the world of wildland fire: the military long ago developed the concept of the “Staff Ride” where a Commander and his staff would visit an earlier battlefield, reviewing the strategy and tactics that were used, and then discuss the implications for situations that they may face in the future.

With its strong emphasis on safety, wildland firefighting has some powerful tools to improve our operations to enhance safety: we can look back at those fires where firefighters became entrapped, searching for those areas where we need to improve our training, operations and equipment. The history of firefighters being entrapped, burned and killed in the wildland is well known to most of us in the business, from Pulaski’s heroic efforts during the 1910 fires in Northern Idaho to the Loop Fire in Southern California during the 1960’s. Many of our current safety guidelines (the Standard Fire Orders, the Situations that Shout Watch Out, Downhill Line Construction, etc) resulted from the lessons we learned on these earlier fires. Any of these earlier fires that resulted in injuries or deaths were investigated, but the investigations seldom followed an established pattern, key elements were often overlooked, and the information was not widely distributed to field fire folks.

This all changed in the 1990’s: wildfire fatalities were widely reported by the media; NWCG adopted uniform guidelines for investigating entrapments; and the advent of electronic mail helped speed information about burnovers not only across the United States, but often across the world. Fires such as Dude, Glenallen, South Canyon and Cedar Mountain are important events in our fire community, with widely distributed information about the causes and effects of the actions that occurred: the “lessons learned.”

While there are several recent publications that detail statistical data on both the entrapment and fatalities that have occurred on wildland fires, there are also numerous important learning points that have been identified in the investigations of these events.

So, looking back at the wildfires that resulted in entrapments and fatalities in the 1990's, what can we learn to improve firefighter safety in the 21<sup>st</sup> Century. In reviewing many of the events from the 1990's, it appears to me that we can lump many of the failures that resulted in firefighter injuries and deaths into 6 major areas:

1. Bad management;
2. Command and Control;
3. Strategy and tactics;
4. Communications;
5. Personal protective clothing and equipment;
6. Human factors.

While its easy to make broad characterizations of problem areas as I've done above, this has little meaning to the on-the-ground firefighter who's at the end of the hose or swinging the Pulaski. If we're going to make a positive impact on the safety of these folks, we need to give them clear and strong examples of what has worked, and what hasn't worked when they have a "bad day" on the fireline.

And what are these learning points, you ask? Well, the following are a compilation of the findings from many of the investigations of entrapments that occurred in the "90's:

#### BAD MANAGEMENT

- Untrained firefighters were given wildfire assignments. They got into situations they didn't understand, and got entrapped or burned over;
- Personal protective equipment such as Nomex clothing or fire shelters were not provided;
- Fire assignments in leadership positions were based on rank rather than fire qualifications;
- Critical information on weather was not passed on to the fire scene;
- Available resources, both air and ground, were withheld from the fires, compromising safety;
- Protection of homes and structures overrode good strategy and tactics, placing firefighters at risk;
- Timely and effective suppression action wasn't taken on new fire starts, allowing the fire to grow in size and complexity, increasing the risk to firefighters.

#### COMMAND & CONTROL

- A Division supervisor was unaware of all the crews assigned to his Division;
- All firefighters on a 50 person fire were not sure who was Incident Commander;
- On multi-Agency fires, the I.C.'s from the agencies were not in direct communication with one another, resulting in confused directions and firefighters in dangerous conditions;

- A crew supervisor refused to take the advice of an air observer of a route to a safety zone, resulting in shelter deployments;
- Incident commanders were unaware of dozers operating on their fires, resulting in burnover fatalities when burning conditions changed;

## STRATEGY & TACTICS

- Attacking fires without an anchor point;
- Mistakenly identifying areas as safety zones: they were inadequate, and became deployment sites;
- Underestimating the time to move along escape routes to reach safety zones; the fires moved faster, and burnovers resulted;
- Placing firefighters and fire apparatus between the fires and structures to be protected during Interface fires;
- Selecting control lines based on the need to protect structures, rather than on the probability of stopping the fire safely;
- Conducting burnout operations during critical fire weather conditions, without knowing where all resources are located;
- Constructing downhill fireline, where the actual flaming front of the fire could not be seen;
- Failures to adjust strategies and tactics based upon changing weather and fire behavior;

## COMMUNICATIONS

- different languages and dialects spoken on a fire resulted in confusion during a burnover of which way to run;
- failure to have a radio for the lookout, who was unable to alert his crew to a fire moving in their direction;
- using older radios with a known history of “frequency jumping”;
- Incompatibility of radio frequency ranges between adjacent crews;
- Overloaded radio frequency prevented passing emergency traffic;
- Lookout was inexperienced in radio use, and was unable to change to the correct frequency to notify crews and overhead about fire conditions;

## PPE and EQUIPMENT

- failure to carry fire shelters;
- failure to inspect fire shelters on a recurring basis during the fire season resulted in a non-functional shelter during an entrapment;
- 2 people can survive in a shelter, if necessary;
- cotton denim pants burn; Nomex pants don't;
- fire shelters carried inside line packs can't be reached in a timely manner during a burnover;
- fire shelters left in a vehicle or on a dozer don't help if you're not there;

- Carrying line packs, chain saws and other equipment can slow you down 20-30% when you're running along an escape route;

## HUMAN FACTORS

- Firefighters have discussed the 10/18 just prior to taking actions in direct contradiction to those guidelines, and resulting entrapment;
- A crew supervisor who had pre-warned his crew of a "deployment possibility", disregarded advice to leave a fire area, and had 20+ deployments;
- Experienced crews, in a hurry to conduct a burnout operation, traveled past adjacent crews without coordinating radio frequencies and tactical information. These crews ended up in a burnover event hours later;
- Unqualified and inexperienced firefighters accepted fire assignments because of "peer pressure", and ended up in an entrapment;
- A firefighter came away from his first wildfire with scorched Nomex pants, bragging about his close call. He died in a burnover on his second fire;
- A trained FBAN, working as an OPS trainee, didn't feel obligated to comment on fire behavior that was well beyond predicted levels;
- A lower qualified firefighter was allowed by a more qualified firefighter to remain as I.C., even as the fire complexity increased significantly;

Well, it looks like ole George Santayana was right: the mistakes that we made on wildfires during the 1990's that resulted in entrapments, burnovers and fatalities aren't really different than those that were made by earlier firefighters since the 1910 Fires. Sure, the technologies have changed (and hopefully improved); we have training and qualifications standards that were unheard of in the early days of firefighting in America; our workforce is better educated; and our knowledge of these events more thorough than any time in history. Yet, entrapments, burnovers, burned and dead firefighters: all are still part of our lives in the 21<sup>st</sup> century.

Is there an answer to help us from being "condemned to repeat" the mistakes that have burned and killed firefighters in earlier years? I believe there is! It's not more training, better equipment, more radios or additions to the Standard Fire Orders or Situations that Shout "Watch Out". It's a simple one word answer to our problems: Accountability. Accountability for the firefighters who don't wear their PPE at all times on the fireline; accountability for the crew supervisors who don't seriously and objectively evaluate their escape routes and safety zones for effective use in a timely manner; accountability for fire Incident Management Teams that don't place firefighter safety above protecting homes or meeting a land manager's objectives; accountability for fire managers, line officers and elected officials at the County, State and Federal levels that fail to provide their wildland fire suppression forces with AT LEAST the minimally acceptable training, equipment and PPE to safely accomplish their jobs. And finally, accountability for any and all of us that have anything to do with the world of wildland fire: we must ultimately hold ourselves accountable to challenge unsafe acts and those that we know violate our basic safety guidelines, no matter who's toes we step on in doing it!

These “Lessons Learned”, be they from a battlefield or the fireground, are often paid for with the lives of our compatriots. The least we can do, in their honor and memory, is really apply the hard lessons that they gave their lives to teach us, insuring the safety of others in the years ahead.

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