**Yarnell SR Alpha Test Feedback (Kaib) February 29, 2016**

We shall never know everything that happened in the battle of fog at Yarnell as at many SR sites. These dramatic sites however, even with incomplete information, can lend themselves to compelling leadership discussions surrounding the chronology of facts and decisions, and the final outcomes. We don’t need to know everything to learn. We can also frame up the learning points in hypothetical or general ways to protect individuals if that is a concern. I know that all the Young Firefighters that were involved with Yarnell would want this SR to be the best learning opportunity possible. I am really honored to have been selected to participate in this event. I learned an enormous amount through discussions with SME’s and my conference group, and I look forward to learning more from this SR in the future. Here are my suggestions below.

Respectfully Mark Kaib

**Students of Fire;**

*In the investigative report Page 2, last paragraph; The Granite Mountain IHC had been watching the active fire burn away from their position all day but their observations did not lead them to anticipate the approaching outflow boundary or the accompanying significant fire behavior changes. These changes included a doubling of fire intensity and flame lengths, a second 90-degree directional change, and a dramatically accelerated rate of spread.*

*In the investigative report Page 3, 1st paragraph; The Granite Mountain IHC left the lunch spot and traveled southeast on the two-track road near the ridge top. Then, they descended from the two-track road and took the most direct route towards Boulder Springs Ranch. The Team believes the crew was attempting to reposition so they could reengage.*

*In the investigative report Page 3, 2rd paragraph; The Granite Mountain IHC did not perceive excessive risk in repositioning to Boulder Springs Ranch.*

*In the investigative report Page 3, 5thparagraph; In retrospect, the importance of the 1526 weather update is clear. However, the update appears to have carried less relevance in the crew’s decision-making process, perhaps due to the wind shift (starting at about 1550) that preceded the outflow boundary, or perhaps because of the time it took the outflow boundary to reach the south end of the fire (at 1630). It is possible they may have interpreted the early wind shift as the anticipated wind event.*

*In the investigative report Page 22, last paragraphs; OPS1 is listening on the radio to make sure everyone received the most recent weather announcement. At about 1550, he radios DIVS A directly to ask if he got the weather update and if he is “in a good spot.” DIVS A affirms that he received the update, and he tells OPS1 the winds are starting to get “squirrely” up on the ridge. He says he is working his way off the top and OPS1 closes by advising DIVS A to hunker and be safe.*

A major premise put forward by SR literature, was that the GMIHC was very knowledgeable and accomplished in this terrain and fuel type. This is a difficult one to support with the well-acknowledged evidence prior to this fire, including the long-term drought, existing extreme-arid weather and fuel conditions, spot weather on imminent thunderstorm activity and changing winds, the Doce fire behavior exhibited several days prior, and a long list of historical fire fatalities and near fatalities that have occurred in this vegetation type under similar conditions (e.g., steep terrain, 45 year old chaparral, erratic weather/winds forecast, fire below, WUI).

**Facts Learning Box;** In the background information page 6, it would be nice to get a better outline of the well- known and documented chronology of long-term drought, fire behavior, weather and fuel that led up to this event. A graph showing the Energy Release Component and above normal temps and arid conditions would also aid this story. I would be happy to contribute this if there is an interest. This box would be used in place of fire control notes document that seemed out of date and less relevant. How many slices of Swiss cheese do you already have line up?

**Facts Learning Box;** Provide a comparative analysis with outline of several chaparral/brush type fire fatalities from past with key relevant conditions and SOPs. How many slices of Swiss cheese do you already have line up?

GMIHC were students of fire on this one. Did they proceed as students of fire given this killer fuel-type and well established SOPs? GMIHC did have good experience and knowledge, but was their experience only sufficient enough to give them the self-confidence to take on greater, possibly unjustified risks? Had they adequately judged the potential fire behavior situation as students of fire? Did the hometown WUI-threat further blind their fire-behavior situational awareness and risk-assessment process?

**Facts Learning Box**; The windows and margins is a great metaphor and learning tool for this SR and for future firefighters. A graphical interpretation/outline of this would help students better understand and apply concept. The depth of experience, knowledge, and planning you can bring to bear to any situation, the greater your contingencies, opportunities, and windows and margins. The more complex and unpredictable a situation, the quicker your margins or contingencies, and windows of opportunities can change, for better or worse.

Do we have certain situations (e.g., terrain features or fuel types), that we have already identified as complex and unpredictable? What are some situations you know about where our margins and contingencies are already limited? What about the town of Yarnell? It had already been identified in early briefings, as an ‘indefensible WUI matrix’ by SPGS. What type Values at Risk, and windows and margins existed in Yarnell at 1300hrs, verses 1500 hrs.? verses 1600 hrs.?

Do we need different SOPs for this killer fuel type or do they already exist and need better emphasis (e.g., SOPs)? Was the SA and Risk Mitigation of the GMIHC, blinded by over-confidence and the hometown WUI?

**Values at Risk**; The Yarnell Subdivision was already recognized and deemed as indefensible space if fire entered this area. Discussion points could be added here about better defining Values at Risk? Are we willing to take on more risk when there is WUI? When the WUI is part of our community and sense of place? Is it justified? Should we emphasis the WUI factor better as a watch-out situation that requires more thorough analysis and realistic actions? Do we need different SOPs whenever significant WUI is involved (e.g., WUI; WUI w/people, WUI already evacuated).

**Facts Learning Box**; Outline of how we assess risk in the presence of the WUI, different types of WUI (e.g., w/and w/out humans) and risk mitigation.

**Human Dimensions** – The telling experience here was listening to the old IHC superintendents discussing when they were new to the organization, their peer crew superintendents lack of respect and acknowledgment, and the many years it took to gain some respect. This is possibly the most important and difficult safety lesson that can be brought to bear by this emotionally-charged SR, to really help change the professionalism and mutual-respect behaviors of our future leaders. This would be a good one to bring in some social scientists or psychologists as SME’s to help appropriately frame the discussion within the facilitators guide.

There seems to be some additional key information from other personnel that were involved that should be interviewed and integrated into the SR that could help inform this discussion on Human Dimensions (e.g., DIVS Z, Blue Ridge IHC, local agency resources, other IHC’s from Region).

Why did GMIHC Supt. let his Captain be DIVS A? This was the GMIHC Supts. first time back with the crew after recovering from surgery, it was deemed a no-problem fire, and he didn’t need the DIVS training experience?

Who gets to go to briefing? Why did the DIVSA not invite GMIHC to morning briefing with such a small group where everyone knew each other? Does it matter? Was there information or time that could have been lost?

DIVS A at meeting with supts., decides to pick Donut as LO, superseding Steeds position as acting supt. Human Behavior?

**Facts Learning Box- Picking LO’s** - what make the best LO’s, **L**CES, selection criteria, responsibilities, and critical elements.

*In the investigative report Page 21, 1st paragraph; Division Supervisor Zulu (DIVS Z), a single resource ordered for the Type 3 team, arrives at the Blue Ridge crew carriers around 1210 and calls DIVS A to discuss a division break and resource assignments. DIVS Z is having radio problems, so he uses a Blue Ridge crew radio to talk with DIVS A over the Blue Ridge intra-crew frequency. DIVS A and DIVS Z cannot agree on the break location or associated supervisory responsibilities, resulting in uncertainty among some personnel about the physical break between Divisions Alpha and Zulu.* DIVS A asserts his control/power over DIVS Z, by going directly above chain of command to Air Attack and Operations, instead of working out directly with DIVS Z. The unclear communication here with an agenda resulted in the issue never being resolved or clarified for the Division Break or who would be in charge of Blue Ridge IHC.

What about the aggressive communications between DIVS A and DIVS Z? What about the unclear communication that was even perceived by some as evasive communications between DIVS A and BRIHC and the ASM2, regarding GMIHC’s plan, route, and location at various times.

What kind of human behaviors were exhibited in these communications? (e.g., Respect, professionalism, egocentric, exclusion, control, power, etc…) Could this have affected the SA or operational success? Why do we sometimes avoid specifics when communicating? Is this effective communication? Is there sometimes a hidden agenda of detail that the communicator does not want to make known? Do we sometimes avoid being transparent or forthcoming about our risk taking until we know we have succeeded? What can we jeopardize when we do not follow our own standards of clear communication? How can inaccurate communications affect our opportunities, contingencies, and windows and margins?

**Learning Box** - The suggested book reading “On the Burning Edge” by Kyle Dickman, lays out many of the leadership styles and stereotypes exhibited by the leadership involved in this incident. These could also be used out of context, to reduce any concerns regarding individuals. These should be drawn out of the literature and local knowledge, and generalized to emphasis the more compassionate and respectful leadership required by our future professional organization. How do these behaviors make for a more resilient crew and organization?

Consider for example the aggressive Type A - Macho leadership style common in our wildfire organization in particular in operations and with crew bosses. This is both a desired and undesired conduct, or good and bad behavior, depending upon the who, the what, and the time and place. We are all vulnerable to this and finding the right time and place is the art. Consider how as leaders and from different perspectives we are blind to different perceptions of these behaviors at different organizational levels, and how we can sometimes unknowingly encourage bad behaviors that would be inconsistent with our professionalism, leadership, and respect.

**Consider Type A Macho Crew Boss.** (e.g., this could be an informative hypothetical diagram for discussions with further elaborations below). Consider how this behavior gets perceived and reinforced or not by others;

**Subordinates**; may not feel the love, but they do take a sense of pride in the crew while sharing in the misery. The sacrifices are worth the *esprit de corps*.

**Superiors**, Supervisors, Operations; love a good macho crew boss and winning team, tough, go go go!. Keep up the great work.

**Peers**; How about your peers? Wow, not much love felt. What about competition? What about needing to prove yourself ? What about status? What about crew name/integrity?

**Bad Plan – Bad Communication – Was it Re-Evaluated and Changed? - Bad Outcome**

Investigative report Page 22, last paragraph; *At about 1550, Air Attack tells DIVS A the fire is heading quickly toward Yarnell and could reach the town in one to two hours. He also says the Granite Mountain IHC’s crew carriers may be in the path of the fire. DIVS A acknowledges and tells Air Attack he has a plan to address this issue…..*

Investigative report Page 24, last paragraph; *As BR Supt is en route to pick up drivers to move the Granite Mountain crew carriers, SPGS1 contacts him to ask if they still have the option to burn out from the dozer line. BR Supt tells him no. DIVS A, hearing the transmission, agrees and says he believes the fire is almost as far as the Granite Mountain vehicles. A moment later, DIVS A says, “I want to pass on that we’re going to make our way to our escape route.” BR Supt attempts to clarify, “You guys are in the black, correct?” DIVS A responds, “Yeah, we’re picking our way through the black.” DIVS A then mentions a road in the bottom and “going out toward the ranch.” BR Supt thinks DIVS A is talking about heading northeast, through the black, to one of the ranches in that direction. BR Supt says, “DIVS A, to confirm, you’re talking about the road you saw me on with the UTV earlier, in the bottom.” DIVS A replies, “Yes, the road I saw you on with the Ranger [the UTV].”*



How well was this really coordinated? About this time who is acting as LO, as DIVS A, and as GMIHC superintendent? What is the chain of command and who knows what is really going on in this division? GMIHC’s lookout and crew vehicles are now jeopardized by the quickly moving and changing fire behavior. They now have to rely upon another IHC to respond and save their asses. This was a very close-call and it should have been a major wake-up call for DIVS A and GMIHC. Was it time for an operational pause? Was it time to re-assess their plan resources at risk, contingencies, margins and windows?

This is really one of the success stories that should be further elaborated upon. The Superintendent of Blue Ridge was looking out and conducting sense making throughout the day and situation. This enabled him to safely be in the right place at the right time to save Donut and the GMIHC crew rigs, before his window closed. **This situation needs to be more fully developed as a success story - doing the right thing.**

**General Comments;**

Need better consistent legends on all maps

If this is going to be designed to be an L-580 the higher level politics needs to be brought in including discussions between the SWCC, Dispatch, and the State of Arizona. Consider the larger fire prioritization process in more detail at GAC level and how resource shortages were being dealt with. Another caveat would be to consider the role of the operators; For example the engagement of the SWCC Predictive Service Unit, coordination of changing weather forecasts with NWS, and the timely spot weather forecasts that were made to key fire personnel. How was this information used by different fire resources? Was it timely and accurate? Was it used to enhance SA and to inform/change plans?

What about incorporate potential use of new technologies like drones, or phone/radio gps systems?

It would be nice to get some larger fire progression maps made up for the stands on flexible table cloth material.

*Around this time, some crewmembers take photos and send text messages to family members. At 1554, one crewmember texts, “This fire is running at Yarnell!!!” Another texts a photo at 1604 and writes, “This thing is runnin straight for yarnel jus starting evac. You can see fire on left town on the right.”* Media- New forms of communication and how do we use, control, and what issues may arise out of new rapid commo (e.g., digital photos, digital recorded voice and radio commo, Twitter, text, etc…).