

Written Transcript  
On The Line Episode 1.10 “Maclean”

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Charlie Palmer: We are back on the line a podcast for today's wildland firefighters, brought to you in part through support from The Black. We are joined today by Dr Brent Ruby from the University of Montana's Department of Health and Human Performance. We might as well just move you to cohost status and very, very honored to have our other guest with us. This is our 10th and final podcast of season one and we are very honored to have John Maclean on the show today.

John Maclean: Charlie, thank you! Brent, nice to be here.

Charlie Palmer: Thanks for being here. So John, you're the author of four books at this point, all kind of coming as a second part of your career after a very long career in the newspaper business, which we'll get to here in a second. But what stands out to you when thinking about this collection of four books that you've managed to pull together?

John Maclean: Well, I'm working on what amounts to my sixth book. I have a fifth book in my back pocket that I just haven't done the photographs for. It's kind of a self published... so it's not a big book. It's the Rattlesnake Fire kind of redone from an earlier book, but the 6th book is the Yarnell Hill Fire of 2013 that killed 19 granite mountain hotshots near Yarnell, Arizona. And if am given the time to complete that, I think I can look back then, not now, but then and say well between my dad and myself, you know, we covered an awful lot of the major tragedy fires from the middle of the 20th century to well in to the beginning of the 21st century, and that's kind of an accomplishment that has reach beyond just one generation. And I'd like to be able to do that.

Charlie Palmer: Yeah. And Fire on The Mountain kicked that off?

John Maclean: It did! Fire On The Mountain was the fire that was very much like the Mann Gulch fire, that my dad wrote about. There have been posters of the terrain in Mann Gulch and Storm King Mountain where the South Canyon fire happened, that looked like roschach tests side by side, same terrain, big mountain in the background. Great big long Gulch that ends in a river big enough to be named for a state. The Missouri River in Montana and the Colorado River in Colorado and the action was very similar. So that it ties in to the earlier book that said, I mean as anybody who has read any of these books, knows that my approach to it is completely different from my dad's. I didn't spend my career teaching Shakespeare and Wordsworth, nor did I spend my early years being instructed in the King James Bible by a Presbyterian minister. though it was close.

(laughing) You know, I had the son. I spent 30 years as a journalist, and that's what I like to do. And I also, when I started doing it, I didn't...The comparisons between me and my father are inevitable, but I wanted to do it as differently as could while keeping with him what was true to me. And I think I did that.

Charlie Palmer: Yeah. And that's a great segue into this next question, which you spent 30 years as a Washington correspondent and based out of Chicago, but coverage for the Chicago Tribune. Then was Washington, DC was kind of your beat. And obviously a very interesting, fascinating time currently in terms of the political issues that are going on in our country. Anything stand out to you? What do you see in DC nowadays? You live there and anything in particular from the political climate that might pertain or be relevant to today's fire?

John Maclean: Well, I do extend a long way back when I started out in Chicago for the Chicago Tribune and I wound up working for him for 30 years. Most of that time almost 20 years in Washington DC as a Washington correspondent. And, I was still living in Washington. Main thing that I covered was the State Department for over a decade and I covered Henry Kissinger when he was secretary of state and what's going on today is terrible and divisive and we all know that and you can describe it in different ways. But this country has gone through some very rough patches before. And we went through one horrendous patch with Watergate. And, the fall of a president. President Nixon and I covered the primarily from the point of view of the State Department on American foreign policy. Basically, the United States was swirling down into an incoherence. I didn't like Henry Kissinger. I covered him for a long time and I thought he was devious and callow and absolutely brilliant. Of course, but I wasn't taken by him in retrospect, looking back at that time, uh, I have enormous respect for what he did because he held the United States government's foreign policy together at a time when you had a president who was in deep mental difficulty trying to hold himself together. And the stakes here then were, as they were, now were nuclear war, you know, a president can take people's minds off of his own troubles by starting a nuclear war. It can happen. And Kissinger was the steady anchor during those turbulent times when he was on the road, he would call the president and report in every night. Personally when he was in Washington, DC. He spent a great deal of time with the president. The famous anecdotes about that. You know, Nixon asking him to pray with him. I asked him about that one time, and said "did you, did you actually pray with the president, go on your knees and pray for the president"? to which he replied, well, you know, I'm not exactly a praying type. He did it. I mean, uh, and the country held together. If you live in Washington or in the east coast as I do and am a military history buff, you spend a lot of time at battlefield civil war battlefields. This country was torn in half on during the civil war, so that doesn't make what's happening today, any better. But it gives you some idea of the resilience of this country. We do not necessarily fall apart. That said, you know, the weapons of today are not the weapons of the civil war.

Charlie Palmer: You are extremely active in terms of making yourself available to different groups. And oftentimes those are groups with a fire focus or a fire theme of some sort. And I've read a piece where you credit Bob Sallee, the, one of the

survivors of Mann Gulch who basically said, "hey, if they care enough to ask you to come, probably a good thing to come". What do you take away from some of this very active work you do? Reaching out to fire groups?

John Maclean:

I have been instructed in generosity by a couple of really outstanding mentors. One of the first was a guy who ran a publishing house, Nick Lyons, who was a friend of my dad's. He wrote the first review of *A River Runs Through It*, before anybody had anointed it with greatness. And he said in the first review in a fishing magazine, this is an American classic. And my dad went to New York to see him and became friends with him. And when I started writing *Fire on The Mountain* and I went to see him, I said, "I need to get an agent". And so he started going through his Rolodex and I said, well, you ought to call the head of random house! The autocal is... my God, you know, I can't, I can't do that kind of thing. So he went on for 45 minutes or an hour and gave me every friend he had. I'm taking numbers down and it gets to the end. And he said, oh, by the way, my daughter just graduated from college and she's become an agent. And I thought, you mean there's a young female version of this guy who has just spent a lot of time trying to help me when he didn't have to!? And Jennifer Lyons, his daughter, has been my agent ever since. So Nick taught me to be, he's a mensch, you know a Jewish guy and they have a name for it mensch, he's trying to make things good for other people. So I started out with that. Then I talked to Bob Sallee and he you know, he's a legendary figure and I invited him at one point to go to Mann Gulch as my dad had, and he's older and you know, had other things to do. And he went with me and luckily I took recording equipment and I've got a two and a half hour interview with Bob describing what happened that day as he stood in the places where it happened. But as we talked, he said, "I've never turned anybody down who asks" and he had done, you know, not too much by that time, three or four things. And then it kept accelerating and he would be asked to go to a conference and tell his story and I would be at the conference sometimes and listen to it and very subdued, very quiet. And there would be standing ovations at the end of it. So I learned from those guys, you know, give, don't hold back, don't be stinky of somebody thinks enough of you. To ask you to come. Even if it's a small event, try to do it. You don't have to do every one if it's, you know, you don't have to turn yourself inside out. But yes, it pays to be open like that, it pays to be generous like that. And the immediate give back is that you feel better about life if you do that. So that's the way I've tried to continue.

Charlie Palmer:

A couple of weeks ago here in Missoula and part of it was supposed to be in Seeley Lake and the Seeley Lake events for the most part got canceled because of the smoke. And so with this Maclean Footsteps Festival that, that went on here, a whole bunch of really, really cool events that took place, kind of paying tribute, paying homage to the Maclean family and their influences, not only in western Montana, but kind of the world as a whole. And as part of that then you gave a talk at the National Museum of Forest Service History, which was fabulous by the way.

John Maclean: Glad you think that. I'm also kinda surprised you got the name right? Not too surprised because you're good. But, most people don't. Now, that's the name of the National Museum of Forest Service History.

Charlie Palmer: Yep. Yep. Dave Stack and some folks that are doing fantastic work. And in that talk then you reviewed your family's relationship with the forest service, which is very long and very, very fascinating. Is there a shorter version of that?

John Maclean: The short version is that I use 1910 as the beginning date for our, relationship. 1910 was the year, of the big burn, the great fires out of Missoula, my grandfather, the Reverend John Norman Maclean became a pastor at First Presbyterian here or the year before in Missoula. Our next door neighbor at Seeley Lake, kind of ran the forest service end of that. And the forest service began to grow up after 1910 from a small organization to the behemoth we see today and take on all sorts of wildland fire responsibilities. We established ourselves more in this part of the world and in 1921 we took a forest service lease on Seeley Lake and have a cabin that is there to this day where my dad wrote parts of his books and where, I have written parts of my books. So that's a close relationship with the forest service. When he wrote Young Men on Fire, he hired Laird Robinson a forest service guy to work with him.

John Maclean: Larid was absolutely essential to that effort. He did a lot of the legwork and the field work that went into Young Men and Fire when I started with Fire on The Mountain, The first thing I did was go to see Jack Ward Thomas, the chief of the United States Forest Service at the time, who pledged his help once I got out in the field and when push came to shove out in the field a couple of years later and I wanted some inhouse emails that were very touchy between a couple of guys from the forest service who would refuse to sign the official report and the Washington office. They sent a message to Washington to the WO saying, Maclean is asking for this and you know we're not going to give it to them without permission because it could cost us our careers. What is your answer? And the answer came back over Jack Ward.

John Maclean: Thomas's signature saying, give Maclean everything he wants. and that was an enormous deal. I've never seen anybody in Washington operate that way. It was courageous and heartfelt and I was a great admirer and I don't think was a close friend of Jack's, but we stayed in touch until his death. Shortly before his death, I went to see him in Florence where he was living and he gave me some more advice, that has changed my life and told me I was standing on one leg and then the other about the Yarnell hill fire thing. I didn't know whether I really wanted to commit to it and he told me his story about how he committed to the Spotted Owl debate, which got him when he solved it with a compromise. That's how he became chief and it was. My Dad's told me this, he said, "students come back to me and say, you changed my life, and I say, how'd I do it? And they give some silly little thing like act, act in the present and that's it. You know, you know I got a pHd to do that!" And Jack Ward Thomas, his advice was similar. He said, "when you come to a fork in the road and you take a fork, don't look back. Just keep going" and it was clear to me what he was saying about himself and I

have applied it to myself sort of as best I can and proceeded on with the Yarnell Hill fire. So that's a pretty intimate a relationship.

Charlie Palmer: I think Jack eventually did some work at the University of Montana.

John Maclean: He certainly did. He was a whatever professor you want to call it there. And spent quite a few years there teaching a government policy.

Charlie Palmer: Yeah.

Brent Ruby: When we, got ready to finalize that manuscript on the Storm King study we did, I sent it to him when he was on campus. I emailed it to him and said, hey, can you give this a quick read because I don't want to submit it to the journal. It was going to be submitted in an international journal and wild land fire, which is an obscure journal for most physiology questions, but he gave it a thorough reading and he gave me a review that was unlike a normal peer review. I was mostly concerned about the sensitivities of the outcomes that we found and the recommendations that we were going to try to make and I didn't want to make those out of turn and he gave such a great review and just sort of solidified the importance of that paper in my mind to, get out there. But yeah, so that's an interesting connection.

John Maclean: I did not know you had made that connection with you he was a great man. He really was.

Charlie Palmer: We, and we talked about it in the podcast with Wayne Williams were. We referenced that study that you did at South Canyon, but let's, let's review it a little bit more depth here just so people who might not have heard WW's podcasts can get up to speed on it. Well, it's funny because as listening to John Talk, I remember myself and a faculty member, Steve Gaskell, who's since retired from the university. He and I found out John, you were going to do a talk at the Lee Metcalf Nature Preserve. I think in like maybe that was 2000 or something. It was when the fire's blew up here and so Steve and I drive down. The setting was immaculate in this upper level of this barn and it was just a beautiful setting and in the backdrop of his talk, the Bitterroots we're blowing up as that fire season erupted.

Brent Ruby: And so there's smoke columns coming off. While he's giving this lecture about the South Canyon Fire and we had been to Colorado when we collaborated with a colleague Gig Leadbetter who was a professor at Mesa State College at the time who was a former jumper and hot shot superintendent in Alaska. But he was more than that to me. He was just an awesome buddy in graduate school that helped me through biochemistry and a few other classes. But we never been able to collaborate on a study together. And here he's right at Storm King's back door in grand junction. I said, Gig, we should connect and do a little project. We scraped together enough money to rent a van and took a bunch of students down to Colorado and stayed in a KOA campground and in his front

yard back and forth and pulled it off. But basically what we wanted to do was at that time, like Wayne had mentioned that Putnam and Sharkey and folks at MTDC, were going back and forth about what escape with a load would look like, what that would cost, how from a physiological standpoint, it might change the game. There's no arguing that it would likely slow you down, especially up a terrain setting like that. But no one had really done those calculations and like most of the studies that I've contemplated on one hand you can say, well geez, we can do that in the lab, but we can just set the treadmill at 20 percent or 15 percent, put a load on, look at this number and do this and do that. And Ninety nine percent of most research personnel would say that's the easiest way to do it, let's do it. But I've never been one to think that way and I wanted to go to a location and there's no better location than to make it solidify as a final message than choosing that mountain.

Brent Ruby:

So we went there and scoped it out and did some recon on the mountain. And I had been there. I think I'd been there a couple years before with my wife on our 10th anniversary where we stayed at a variety of places but did that hike. And I was very taken by that. I'd never been there before. And of course John's book had not come out yet, so I looked into it a lot and talked to this buddy of mine Gig quite a bit about it and that's when we decided to go down and do the study. But in taking the students that were with us on that, we took them on the hike and we left our gear one spot and then we hiked up and walked the West flank line and just to sort of set the stage for why it's important that you are a participant in this study.

Brent Ruby:

And it was really odd. It was a really neat experience. I mean I've had so many experiences with human subjects back and forth, but this was really neat way to start it. And then we backed up and we used a different area of the mountain. It's mostly out of respect. We didn't want people charging through those fatality locations. So we used an adjacent trail that's part of the hike in that you can go if you want to visit the spot. But the overall, it was just under 700 meters is all in distance. But the game was pretty dramatic and it was about a 21 percent grade. And so what we did was we organized the research participants into a crossover design. So one day they did it without a load. The next day they did it with a load or vice versa, half and half. And we had a couple of portable metabolic systems which was, it was amazing that we had those. I had a colleague, he was with a military research team, I want to say out of Annapolis and so he brought a metabolic system that he had which was quite nice and we had another one, so we actually had two on that mountain, which was really neat. We rented a generator to power the battery to charge the batteries and everything and yeah, pulled off the study in a couple of long days, but just the poetry of doing that study on that mountain and putting those two things together meant so much more to me than just doing the study in the lab with 40 people or 20 people or whatever. Having them onsite and to be able to write in that paper here's where the data was collected, not in a lab and that just...

Brent Ruby:

Absolutely. That's so great. There's just no substitute for the real ground. Yeah, and even though we did not use the same trail, we use the same mountain and

to me that was extremely important in, in getting that message across and the data very much backed up. What others had suggested. I mean going back to like the late sixties where they suggested that load carriage would slow you down maybe by 30 percent and your numbers show what roughly in that range. I mean we knew we didn't separate it out. We had males and females in this study. The reason we did that is because I've always wanted to try to be inclusive to males and females in our research because females are extremely underrepresented and both males and females died on that fire and so we were really adamant about including males and females in that study. So you, you look at the average female and if you're gonna put an absolute load on their back, that load is likely to be a higher percentage of their total body mass. Certainly a higher percentage of their lean body mass or their skeletal muscle mass. So they were about 30 percent slower than males they were about 24, 25 percent slower. We didn't do an analysis to say, oh, it's more dramatic for females or whatever, but it jives very nicely with the estimated numbers, but estimated numbers are estimated numbers. Now we have actual numbers measured numbers and then John's book came out and just putting two and two together and that's when I started emailing him just out of the blue building this tangle and everything, but I just love those kind of connections when you can have those kinds of connections and do science at the same time. It's sweet.

Charlie Palmer: Yeah. So, so that science has answered the question of is your transit time faster without your pack?

Brent Ruby: Amen. Yeah. It's radically faster when you drop your pack.

Charlie Palmer: So then it becomes a human factors question primarily, of how would somebody get to that point of deciding this is bad enough that I need to get rid of this piece of equipment that I'm taught and trained all the time that I never get rid of?

Brent Ruby: Right! Yeah. And in that study, it was amazing because that's some of the hardest type of exercise I think I've ever done is adding that load carriage to that level of transit time to get out very aggressive sensation in my whole body legs, just wrecked upper body wrecked because you're carrying a tool as well as the load. And so you get to the top and you just sort of drop to your knees and then somebody there waiting for you to grab your hand and poke your finger to take a blood sample. Like we've said so many times in the past, it just demonstrates how fitness is the ultimate countermeasure besides good tactics. If you've got fitness on your side, a lot of the other dangerous parts of the job take a backseat.

Charlie Palmer: Yeah. And in high risk occupations oftentimes it becomes about margins and, that fitness helps build that margin.

Brent Ruby: Like we said with Wayne. I mean your. When he said, "yeah, it was nothing years ago to hike in six miles to a fire and not complain about being tired and then just start working." I mean, if you have that level of fitness, it allows your

mind to retain the level of vigilance that you so desperately need to stay focused, to stay heads up in all these surroundings when you need to make critical decisions fast. Without that level of fitness, now all you're thinking about is, man, my legs feel like shit or I feel nauseous or I'm tired, I'm hot, and those takeover. When your level of fitness is where it needs to be, you don't even think about those things and all the important stuff stays in the foreground.

Charlie Palmer: So John, you mentioned now that you're working on the Yarnell fire was kind of your next project and at your talk here for the Mclean footsteps and I had to look this up. It's not like I'm a biblical expert. You quoted exodus 13:22, which says "neither the pillar of cloud by day nor the pillar of fire by night left its place in front of the people" and you quoted that then is in reference to your on Yarnell. What has it been like working on that?

John Maclean: Well, it actually started with my dad on Young Men on Fire. I used to call him up, you know, he worked on the book for the time he was 73 until he died at the age of 87. And I would call him and ask him how things were going and with the book he'd say it's a pillar of cloud by day and a pillar of fire by night. And the Yarnell hill has become something like that for me. I'm better at meeting deadlines after over 50 years in journalism. But, uh, nonetheless, this thing is a real project. I've been at it for years. There was nothing seriously done in either of the two official investigations or anywhere else about the day before the fatalities. Brent just lit up because he knows these things don't happen. Just when they happen. They happen long before.

John Maclean: That's where it starts and you get one little mistake or one avenue of action and it ties up with the next one on the next one, the next one. And then finally when it happened to you and say, well, I can see why that happened. It's simple a mistake at the end. No, no, no, no. This happened long ago, so it's been almost two years looking at the day before the fatalities and that kind of thing is going on. It's very hard to do now. When I did Fire On The Mountain, I got a lot of help from Brent, Ted Putnam and a Dick Mangan and other people like that who were involved in it and with participants. Uh, I interviewed nearly all the people who were on the hill and who survived. Today, partly because of me I think, the agency's shut things down. They don't want people talking.

John Maclean: Liability is a bigger issue than the, but you know, I've also, you know, ticked over so many cans and created a lot of rattles that that's what's happened. So I kind of have to wait for some people to leave their agencies or to retire or do something like that. They want to talk, but they can't. So it's a long project. It's the last big project I think I'll ever do because you know, I'm not a spring chicken anymore and it's worth it if I get to the end. My Dad never saw his book in print, never saw Young Men On Fire in front of you. Actually never saw the movie of A River Runs Through It. He wasn't there for that either. I want to be there when this book comes out. I want to see what happens because you've kind of talked about this earlier, Charlie. Not much has happened in the way of reform since the Yarnell hill fire.

Charlie Palmer: Yeah. And there's a movie coming out here in October. What are your thoughts on that? Any early reviews?

John Maclean: Well, the early reviews I hear from the, based on the trailer is that this isn't fire guys. Uh, but it's exciting and it's dramatic and you know, it may hatch with a wider audience. They're certainly pushing it hard enough. But in the trailer you see Eric Marsh, the superintendent, as he's surrounded by fire saying, "Here I am, come and get me there if ya want me." And I got an email from an old California firefighter who was pretty high on the hierarchy. He said, I just watched this thing and he said, my wife asked me. So is that the kind of thing that you said when you were a firefighter? And I told her, I said, the kind of thing I said when I got into a tight spot was, "dear God, please get me out of here with my whole crew and keep us safe". That's what I used to say.

John Maclean: So that's not the fire guy movie, but it's, you know, it's an exciting movie and it's got a big star cast. We'll see about that one.

Brent Ruby: Can you speak to anything about the day before?

John Maclean: Well, you know, I'm four years, probably three or four years away from having the book come out. Things got kind of fouled up the day before. Uh, I think that there is universal agreement that Arizona, the State of Arizona, The State of Arizona fire, It wasn't a Forest Service or BLM or anybody. When the federal agency, they don't have a lot of money and they try to keep costs down by not committing a lot and there was a lot of not committing going on and I don't want to go a lot farther because I've written about 100 pages on it. It's, you know, it's tough.

Charlie Palmer: We talked about this kind of offline as we were prepping and this idea of comparing and contrasting South Canyon with Yarnell and the realization that South Canyon was such a terrible event, but at the same time there was some tremendous good that came out of it in terms of accountability and leadership training curriculum that was built.

John Maclean: Staff rides!

Charlie Palmer: Absolutely the kind of birth of the human factors movement with Putnam's work and so many good positive rollout effects that are still in effect today. You pointed out we're four years out from Yarnell and I'm still really kind of wondering what's. What's the good?

John Maclean: I think you can pick three dates for great reform as the birthplace of great reform in wildland firefighting. 1910 when they realized that they were going to have to do it, one way or another. It took a long time to implement that, but they did it. The midcentury, one catastrophic fire after another six or seven people killed one after another, the 1956 taskforce review came up with the 10 standard orders, and those numbers went way down. And then you have South

Canyon. When you have this broad spectrum reform. I mean I'm, I'm a critic of a lot of things, but let me tell you the number of people, bright, hardworking, persevering people who were heartsick over that within the fire service and did something about it, you know, from Jack Ward Thomas, spending a million dollars on the tribe data study and doing other things all the way down to the guys sitting around a campfire at night saying, well, in the future, if we feel uncomfortable, we better say no. We just better say no. Everybody took something out of that event. Yarnell hill has not had that effect and I have a theory about why it hasn't so far because it is a hot shot fire. This is to the hot shots. What Mann Gulch was the smoke jumpers, 19 hotshots nearly an entire crew wiped out. There were a lot of hot shots killed on the South Canyon fire, but there were also three smoke jumpers to helitack and the hot shots and they were kind of followers. There were being led by Don Mackey who was a smoke jumper or by Butch Blanco who was BLM. Uh, this time you have a hot shot crew off on a division by themselves making their own decisions and making them apparently unanimously and getting killed en-mass. There hasn't been that high body count of wildland firefighters organized crews since 1910.

John Maclean: I mean this is a big one. So when hot shots get together and talk about this, which they do all the time and I try to plug in afterwards. The general feeling is that the Superintendent Eric Marsh got everybody killed. He made a terrible decision which was to leave a relatively safe black spot and to direct his crew down into a three sided box canyon where they couldn't see the fire. It was at the time of, it was after 4:00 in the afternoon, the height of the burn period, a time of extreme drought. They could see the fire, they could see that the fire was running toward them. They couldn't see it once they got into the canyon. So there's a question as to whether there was a lookout with eyes on the fire while they were in that, canyon just, you know, why did they do that?

John Maclean: Why didn't they just stay where they were? Uh, it's on Eric Marsh and when you're talking to hot shot superintendents, that's the talk they take that kind of stops reform. There's nothing to do here except not be Eric Marsh. I'll tell you, it isn't that easy. It's much more complicated. Eric Marsh as a person and his personality plays a major role in this. You know, I say, well, he was reckless and cocky and he was a lot of different things. He was safety conscious, he cared deeply about his people. He was at the end of his superintendents career. He was heading for a desk job as wildland fire supervisor for the Prescott Fire Department. Uh, it was over for him. He didn't have anything to prove, but when you go back to his, his youth, uh, in North Carolina and follow his whole career and see what kind of a person he was, it becomes much more three dimensional.

John Maclean: But then you're going to talk about the crew. The crew is his creation. Why was it ever a hot shot crew? It was sponsored by the city of Prescott, you know, only one in the country to be sponsored, strictly by a city. So what everybody takes from that as well. They were really structure interested there were really aimed towards structural firefighting and that's why they went down toward Yarnell and got killed because they were attached to a city and they weren't regular

wildland guys. That isn't particularly true. So I've already spent four years on. I'm probably spending three or four more. It's a very complex picture. There are a lot of players in this. And there is a lot to be learned. There's a lot to be learned about weather communication, there's a lot to be learned for how you fight small fires. There's a lot to be learned about what you do when you are off on a division all by yourself and you're having trouble communicating with an overhead that is in transition.

John Maclean:

So I think that there are, in the end, I hope that if I get this book done, that there will be things there that the community can take and learn from. Not to the degree that they did from South Canyon, that was seminal. But the hot shot community, this is your baby and I wish and hope that I can make you look at it in a way where you don't just tuck it away and say, Eric Marsh fouled up end of story because that's not what happened. It's not that simple. He wasn't that easy to judge, it was a very ambiguous situation. I'm not going to go so far as to say there's a great case to be made for Eric Marsh, but there's a very different case to be made here where you get to a point I think where you say, well, I could've done that. Easy. And here are the things that I'm going to watch for in the future to make sure I don't wind where Granite Mountain wound up.

Brent Ruby:

I that's. That's powerful. I haven't spent as much time in camps as you have Charlie, but I've been 20 years in camps, chasing crews and collecting samples and cooperating with teams. And I was always, I've always been fascinated by the different tents and the different structures that this group has and this group has and this group has within the Incident Command Team Ensemble. And certainly fire weather and the analysis of fire weather is critical in capturing real time data from crews out on the line in the different divisions and the different breaks in wherever and sending those and having those being dumped through elaborate algorithms, predictive models, things of that nature is fascinating. But at the end of the day, you've still got people out in that setting and there's not a single objective metric. There's not a single algorithm in play that speaks to what are the human factors surrounding this crew in this division. They've been there three days before they were put there. They were here for seven days. What's their physiology and recovery look like that places them in that pocket of that fire. Is that a safe thing to do? There's not a single human factors model and just like fire behavior modeling, it would not be difficult to restructure a human.

Brent Ruby:

I can imagine in the future on the incident management team having a human factors modeling group. You've got fire weather, you've got people weather. And those people are playing with different metrics surrounding what have they done for the last seven days and what's their sleep patterns been? What's their shifts been like? What's the energy cost of what they've been doing? How do we best organize our resources? Maybe it means moving that crew to another location to provide adequate recovery so they're fired up and ready for the next difficult assignment. There's nothing like that and so some of the stuff we're hoping to do is figure out ways we can either put sensors in place or some sort of modeling around that so the command team can make smarter decisions or

at least more informed objective decisions on how those resources could get juggled. .

John Maclean:

It's a big elephant here and we're all grabbing different parts of the elephant. On of the interesting parts that Yarnell brings up, was the history of hot shotting to get a little bit away from the science. That's a huge part of it, but my part of it is what's the narrative of hot shots? Uh, and they've been around now long enough that they are starting to pull it together for themselves, but they pulled together a clump here in a clump there. So I'm doing a hot shot history as part of the book. And it is not easy because hot shots or what is a hot shot? You know, is it somebody who got picked up in the end of August or early September because the college kids left the crew and so they fight a fire or two and then bail. Is it a crew that decides that they are hot shots in the 1950's or 60's and started calling themselves shots. When does it get capitalized? And these are interesting questions and what you wind up with is with hot shots, there's a lot of mud here. Uh, Who was the first female hot shot? I've been working on that for a couple of years. I've spent some time in this past week talking to Sue Whosari, who probably was the first real one. The first real one being someone who gets hired at the beginning of the season, sees the season all the way through to the end. She has never identified herself as the first female. She was on a crew in 1976 and did that. Deanne Schulman, who was the first female smoke jumper. It's easy to define the smoke jumper. They jump out of a plane with a parachute and land on the ground and fight fire and there's a lot of paper about it. She is absolutely the first female to do it, but Sue won't take that mantle for herself because she said when she got to training there was already another woman there and that woman lasted. She said about a day and bailed. She wasn't... I wouldn't say that's a real hot shot. I wouldn't say she's the first woman, so the first one is somebody who makes it all the way through. So this gets chatted up on the Internet and somebody from R3, a woman from R3 sends a note to Sue and says, I was on the hot shot in 1976 and so we're trying to backtrack that one and find this woman and find out if there's a paper on that and if she did a whole season or she was a temporary or whatever. Who was the first hot shot crew? I can tell you who the longest serving one. It was Delrosa in southern California. 1956. They were a hot shot crew, they're still fighting fire today. That's supposed to be the longest serving one, but the transition from a crew, a BD crew, a riding state trucks, a pickup, whoever to a formal capital H, hot shot crew, you can't really nail it down.

John Maclean:

You go to the 40 man crews... You got to go to the IR crews, through the regional's and you got to go through to the IA's, the inner agency crews and these things are fuzzy. The IR crews were told in a specific years, you're going to be hot shot crews. Some of them said, oh no, we're not. We liked being IR and so they dragged it out a few years and some of them were. It's like that all the way through the hot shot history and now the hot shots are starting to look back and they're pulling this stuff together and say who are we? What is a real hot shot and all this and it's just, it's, it's a wonderful time to be looking into this and trying to pull the whole thing together because you've got this community that is alive to this search.

John Maclean: You know, you often have a hot shot crew with somebody who's been there 15, 20 years and they're senior and they're full time and then they start digging into it for their crew and then they get into the broader issue and there are a lot of intelligent people who can write well who are doing this, but the whole thing, has not been put together. I can trace it back to 1910 and then forward to 2013. So that's over 100 years of the organized crew that can get to a fire quickly. 1910. you see the need for it and you don't have anything like that and it drives it and drives it all the way through World War II and you come out of World War II with a lot of ideas about how patrols and squads work and people screaming in Washington and Oregon. We've got to get big crews under these big fires in a hurry. And the common birth date for both the smoke jumpers and the hot shots is 1939.

John Maclean: The Black Water fire because in north western Wyoming right near the park, it was 50 miles away from any road. It was a small fire by the time they got mules and men and everything else in there. The thing was a gobbler and, uh, killed eight guys and a lot of people said, we can't go on like this. We've got to be able to get people here faster. We all know the smokejumpers history. Daniel Goodman was there and smoke jumper program came out of that drop people from the air. But there was an equal program about getting large crews that were in great physical condition that could move quickly on these things and not sit around. And then you stationed them next to an airport so that you could fly them to a different region. And that's called an IR crew, Inter-Regional. But the evolution isn't clean. It's kind of a pain to pull it all together, but it's really fun to see something as protean as that growing and changing, getting bigger and smaller and finally becoming what we have today.

Charlie Palmer: And is it fair to say that even to trace the term hot shot is under debate?

John Maclean: The hot shots. I've traced it back to the 17th century, uh, for what was supposed to be an aggressive fellow. And then you get to the 1950's when it was actually became a name for crews. And how did that happen? Did it describe a fire with a hot spot or hot shot? Or did it describe a group of highly capable guys or hello these are my hot shots right there. You're really doing a job and it was both. It isn't any one thing. And I think what happened is that people liked being called that. I would like it wouldn't you? And so it just grew from different sources and became the one thing that we're familiar with today.

Brent Ruby: That's fascinating. Well, it's just really interesting. I mean, having worked with predominantly hot shot crews for the studies that we have done over the 20 years and they carry themselves at a different level in terms of professionalism and just structure and organization and the things that they hold themselves and their fellow crew members accountable to. It is an unspoken code.

John Maclean: Oh, it's spoken too! (all laughing) They're real verbal about that one!

Brent Ruby: One of the things in the work with The Black program is in the goals of programming some fitness strategies. Your everyday average type two or

district crew Firefighter probably would look at our materials and say, I hadn't thought of that. That sounds like a great way to train. I don't know any other way. But if you try to superimpose those sort of standards or those sorts of strategies on the hotshot crew. No Way. Science guy. I got it all figured out. Our crew does this and it works fine for us.

Charlie Palmer: Well they're damn good at what they do!

Brent Ruby: Yes they are!

Charlie Palmer: John said they all have this lengthy history, pretty much of doing things their way and it's worked.

Brent Ruby: Yup. They all have their unique way to skin a cat and each one works different and excellent at the same time.

John Maclean: Anybody on a big fire just begs for them because you know what they can do. They're independent, they're off on their own. They'll take care of it. In general you don't worry about them. Think about that applied to Yarnell, and it does apply to Yarnell.

Brent Ruby: But there is no... there is no unique objective standard or line in the sand that says you have to reach past this. Otherwise you're not on for hot shot crew

John Maclean: Yeah there is, There are standards about that. Granite Mountain had to go through a whole rigamarole to meet certain standards. Training stuff...

Brent Ruby: But there's no like formal national fitness standard for the teams. Like if you put on a yellow shirt and carry a pack and go to the fire, here's your standard. If you're on a hot shot crew, it's the same standard...

Charlie Palmer: Work capacity tests...

Brent Ruby: Yeah, the basic pack tests, arduous pack test, and so the hot shot crews over the years have been clamoring for, we need a different higher standard, but it's really hard to capture enough data to demonstrate that that is indeed necessary. And so that's part of the things that we're trying. We're trying to find that data, but it's hard to come by.

Charlie Palmer: John, to circle back to something you said, "in my view, it was a tack taken by some that they blamed Mackey on South Canyon that Don took that human errors" and like. Well, he, he F up, right? It's, it's Mackey's fault.

John Maclean: Pushed too hard, stay too long. Uh, and it's true, but he did push too hard and did stay too long. But then you go back and look at who Mackey was. And Mackey, should never have been in charge of that fire. In fact, he was not the IC, which Blanco was the IC, and he was a way up on the ridge. Never went down

that line. He became the guy who ran the fire because it was the first out of the airplane.

John Maclean: That's a procedure that was done in Alaska to give training to young smokejumpers. If you're first out of the plane, you're going to run this thing, so you mess it up and you burn 100,000 acres of black spruce, who cares. You know, you go down to the lower 48 and suddenly it's very different. One of the reforms that happened directly after South Canyon was that they stopped that first out of the airplane was no longer in charge of the fire. So he was put in that position by a bad policy and made the best of it. I mean he did what he did his best. I think the final without going through all the details that one of his best friends, Sarah Drawing was on that fire and he sent Sarah and his brother-in-law, Kevin Erickson back up the line to clean the line and check it and they both survived and I had a lot of talks with Sarah who was one of the great people in smoke jumping.

John Maclean: She just retired absolutely first class person and at the end of it she said she looked at me one time, just so you know, John, any one of us could have stopped that and that's a Chilean remark because it's very true. There are a lot of smoke jumpers on that fire and we all looked at the plan and nobody liked it, including Don Mackey. But he was in this weird position he didn't want to, didn't want it. He didn't want to be a supervisor. I've talked to, and got to be very good friends with his parents and he just wanted to jump. He didn't want to wind up in an office, ever. Didn't want to be a supervisor. He just wanted to be Don Mackey, wonderful, charismatic firefighter who could tell stories like crazy. If you tried to write down the kind of stories he told. They didn't work. They were around the campfire, verbal, western tradition, storytelling, things that would just spin on and on and on until the fire died down. That's the kind of guy he was. He should never have been in that position and that was changed afterward. So then do you go back and say, well, we changed it, but by the way, it's all done Mackey's fault. And I don't think you do that.

Charlie Palmer: Yeah. and your book then really to me helped. Your book was the key thing that kept that from happening.

John Maclean: I'm glad to hear that and very proud if that were true.

Charlie Palmer: Yeah, I absolutely believe that. And so I think it's really, really fascinating now that that's where we're at with Yarnell that, that Eric has taken, that that was just another one of those chalk it up to human error, pilot error and we're just reliving it again.

John Maclean: Mackey made mistakes and Marsh obviously exercised poor judgment, but there were, there's a whole background to that. When you get at and look at the whole thing, you're going to see yourself doing it. That's all.

Charlie Palmer: Yeah. So you've said you've got about three years or so left on the book just to make estimate...

John Maclean: I don't know Charlie, I mean it's up to God and my, my physical well being and my research partner Holly Neil, who is terrific.

Charlie Palmer: Yeah. And what's the end state? Where do you hope to get to with that? And.

John Maclean: Well, I hope to get to 225 pages by the time I come back to Montana in the spring. I can't think about that. I've tried very deliberately to have not gotten a contract with a publisher. For one thing, they aren't worth much anymore. The whole publishing business has changed and there wouldn't be much to it except I'd have some editor breathing down the back of my neck. You're going to deliver this, deliver that. I don't want that. I'm far enough along in life that I don't have to have it. I can do this. I have enough so I don't have a deadline and I don't want a deadline and every time I tried to impose a deadline, it blows up in my face because I have to go back and redo something that needs doing. I can't do this book the way I've done all my other books.

John Maclean: This book has to get deeper. There are five other books already out on the Yarnell Hill fire. One of them is just out this month by Dj Helm, one of the two people who own the Helm ranch there. That was the safety zone that they were trying to get to. And I wrote a forward for it, uh, Lee and Dj Helm, I think the world of them, they're wonderful people and they were kind of blamed. Their place was blamed for the deaths and that, by the way, it was absolute nonsense that has nothing to do with it. It was a designated as a bomb proof safety zone by somebody else, not by them. And in fact it did. It was survivable. The guys, we're about six minutes away when you get down to the kind of science that Brent deals in.

Charlie Palmer: Boulder Springs you're talking?

John Maclean: Boulder springs. Well, it's Boulder Springs Ranch is the name they gave it in a slapdash terminology of the official report. So it's not much of a ranch is the real name of it. A hyphenated Lee Helm started out sweeping the floor in a factory and wound up having his own aeronautical engineering factory. Uh, but he never forgot where he came from. They are down to earth people that happened to have a lot of money. And the place is worth about \$3 million. He put about 3 million into it and it is a bomb proof safety zone, except they were nearly killed. They were taking care of their pets as the fire approach to the barn. Uh, they got that taken care of. Closed the barn door. Dj was the last into the house as she closed the door of the house behind her, Boom! The fire hit and rolled over everything because the place was really well constructed, you know, gravel walks everywhere.

John Maclean: Not much vegetation. The burn, I think they'd lost a wagon, a wooden wagon that was outside. Um, but it was survivable if the guys had made it there and

gotten into the barn or even gotten in the Lee of the barn, uh, they would have survived. So there you have it.

Charlie Palmer: And then McDonough has a book. Uh, Kyle Dickman has a book.

John Maclean: Kyle Dickman was the first one out. It was a bad book. I mean, let's be honest. It was too fast, too quick, made too many mistakes, too glitzy and a once over lightly, and the thing, you know, got a lot of attention because he was the first. And it has kind of sagged since then. Uh, Fernando Santos, who was the southwestern bureau chief for the New York Times, wrote a book about the families. Uh, she did a lot of interviewing. The interviewer tried to interview all 19 families and she's a hard knocker and she did a good job. You know, the families are happy with it, but it doesn't deal adequately with the fire.

John Maclean: I mean, she did a lot of work to do that. She took a basic fire courses. She tried to educate herself. Um, but it, it, it doesn't go into any depth. Brendan McDonough's book is his story of the 20th hot shot. He survived. He was the lookout. Uh, he was kind of, I don't mean to be insulting about him, but he, they put him down there because he'd been sick and he got picked up by a hot shot Sup and hauled out of there and he survived and wrote his book. If you read the book, it's very engaging. He's kind of an engaging rogue who, whose life was changed by the Granite Mountain hotshots for the good. How many times have we seen this? You get somebody who's a troubled adolescent, uh, in Brendan's case, he was a drug user, a heroin user at one point, uh, had a class six felony, which is the least invidious of the felonies not a horrible one, but he was a screwed up guy. He got on Granite Mountain, they turned them around and made a man out of him. He's had a very hard time since and he struggled manfully, uh, to stand upright. And his book is very, very readable. My research partner, Holly Neil, helped him correct the hard copy on the fire and into the paperback so it doesn't go into great depth on the fire. Dj Helms book doesn't go into great depth except in what happened to her. And then there's a book of Yarnell residents' stories. It's five books, but if you're going to write another book, you better have something pretty good. And what's left is to take what I normally do and take it several steps beyond. And my research partner Holly has kicked me in the butt on this. She said "you can't do what you always do, John. You've got to go more. And I whine and belly ache, but she's right. And I try to do it. So this takes a lot more time. For example, this hot shot history, I had it all written and then when I was out here I realized I had something wrong and I started kicking over the anthill on it and boy, it's interesting. You know, and I'm going to rewrite that section and I'll probably do it more often if anybody's listening who a hot shot who has a real hand on the history, you know, get in touch with me. This is an ongoing project and it's gonna go on for several years. The things like that are going to get changed. So I have no deadline except mortality.

Charlie Palmer: Well, I'm just thinking about the Esperanza fire book. It interests me to hear you say that you need to go deeper because that's just a fabulous piece of work. I mean that there is so much in that book from a depth standpoint too, to think

that you're thinking you have to go deeper on this Yarnell is book is amazing to me.

John Maclean: Well deeper would be dealing with Saturday the day before the fatalities. That's deeper. No one else has done that and I defy anybody to try to do it. I mean it is. I just defy anybody. Go ahead. You try this one because it ain't easy. I mean these people are scattered, you go to an agency like the BLM and say, can I talk to someone such and such? And they say, no. Go to the forest service and say can I talk to so and so and such and such. And they say no. Then you've got to find the people, that isn't easy. Then they've got to talk to each other and decide whether or not you are trustworthy and they don't start out thinking that you are, you know (All Laughing). So that's kind of depth and depth on actually what happened on the fire. I mean you can't take... their are two official investigations and they don't go deep enough.

John Maclean: They just don't go deep enough. Uh, and it's very hard to get people to talk who want to talk. And there's the five year rule, Charlie, and it's not a rule, it's just an observation I've made after five years after one of these people changed their attitudes. It doesn't happen automatically. It happens evolutionary and it can be three and a half years or six or whatever. But people say, "I will never speak about this again" kind of stuff. And mean it, have a different view. Time does change things and you hate to say it heals all wounds because it doesn't. There is no loss. Like the loss of a child, there is nothing like that. Don't ever minimize it. But after about five years, people are willing to say things that they weren't right after the event. Simple fact. And if you do an official investigation in 90 days, you're not going to get it. If you do a fast book in a year and a half, you're not going to get it. If you sit there and keep going back to these people and establish relationships, eventually you stand a chance of getting something out of that, that changes your view and changes the narrative.

Charlie Palmer: Boy, always great to talk with you. Brent. Let's, let's, as much as I don't want to, let's conclude this. Uh, what do you have?

Brent Ruby: I just love the combined passions within this little triangle microphones from Charlie's rich history as a firefighter to John's rich history that has taken him back to fire. Didn't start that way. Not with him, but maybe with his dad and then his spillover into this world. To me that when I started at the University of Montana, fire was the last thing on my mind and then Brian Sharkey just says, hey, maybe you should think about this. And so flash forward to now and here we all sit talking about the tangles that we get to talk about and that we can have. Maybe. I mean, I would love to say maybe we can have a little shining light into this as outsiders looking in with some science, with some art, with some different ways of thinking about it or some detailed analyses. That to me is, there are a few research agendas that scientists get to play in and being able to play in this arena is one of the greatest things in my whole career.

Charlie Palmer: Yes definitely not work.

Brent Ruby: No.

Charlie Palmer: Right. It doesn't seem like work. It's just darn fun. John, how about you?

John Maclean: Oh you know I only have a little corner of this. Uh, I like my corner. I like to do it. I have talked to someone, I've got so much of the highs, so such a big wedge of the pie that I don't have. It's just a lot of fun to kick it around like that. And you know, to see that I don't have it all. So you're one player in a big game here. There are a lot of players in here and that's one of the things I learned after South Canyon. These people are, it isn't just you. People are going to go do stuff on their own. You can kick them around a little bit. They might even nod at you, but the wealth of interest in this, in making... doing it better, safer, more efficiently. It's incredible. What we haven't even gotten into here is you know, climate change and the wildland urban interface and mega fires and all that considered a lot of other issues where other people have enormous expertise that they can bring to the same thing. Who would have thought, you know, something as simple as a wildland fire burned up a couple of trees could create this broad, a spectrum of intelligent attention.

Charlie Palmer: Well, I for one, can't wait to read what you come up with.

John Maclean: Neither can I. (All laughing)

Charlie Palmer: Thanks again for joining us, John. Absolutely. It's been a pleasure. Thank you for taking the time out of your busy schedule to join us today, Mike our sound engineer, thank you. An to our listeners. Thank you for tuning in today.

Charlie Palmer: You've been listening to On The Line, a podcast for today's wild land firefighter. Our audio engineer is, Mike Matthews, production assistant Joey Moore, and I'm your host Charlie Palmer. Thanks for listening and we hope to connect with future On The Line.

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