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AL HYDE: Thank you all for being here this morning. I'm Al Hyde with Brookings Institution. We're facilitating and serving as the principal resource for the blue ribbon panel on aerial firefighting. I'll have the panel introduce themselves in a second, but let's cover a couple critical first pieces of information.

In case of an emergency, even though all the doors are labeled as exits, the principal exits are out here to the left and then down the stairs and then out the main door. I don't believe Salt Lake City is on an earthquake line, a fault line, is it? Oh, it is. Well, then those of you who are sitting underneath chandeliers, I suggest you rethink your position on that, but in case if there were a tremor or any kind of earthquake, you would immediately move away from the chandelier and try to get to a position either underneath the chair or table and then vacate the room just as if it were a fire drill.

There are restrooms out there -- that's a little logistic aspect -- and out that way as well.

I need to inform you that the session today is going to be taped, that the record of the remarks today, the questions and answers and all of the things that are discussed will be part of the group's report and when it comes out at the end of November it'll be an appendix to it or whatever. If you are interested in obtaining a copy of that, of both the report and the transcript of this particular session, whatever, you could do so by contacting us at Brookings and we'll make sure that it's available to you, send it you over e-mail or however you have want it handled.

Rose Davis, with the public affairs office in Boise is sort of helping us a little bit with sign up, whatever. I really would like to get your name and e-mail address and contact address on one of sign-up sheets, whatever or not you speak today. I mean, if you're here to listen or if you do want to speak or whatever is immaterial; I still would like to be able to put you on the mailing list and keep you informed with regard to the project. If you've taken the time to come here to be part of the process, I'd like to make sure that we close the loop and you have some information on what comes out of this with regard to the report itself.

The schedule for today is going to work like this. We have an invited panel discussion this morning from 8:30-ish. I use that word "ish" because we are already running a little bit on the late side, but the good news is it looks like a civil and smaller

crowd than we had in Portland on Monday, so I'm anticipating that we'll have plenty of time today and we can do this at a leisurely pace.

This morning panel will run from 8:30 to 10:00. We'll take a break then. Then at 10:30 we'll begin with anywhere from 20 to 30 minute slots for people who want to talk to the panel and engage in some discussion with them. John McConnell will be going first at 10:00, just to let you know that your slot is safe. Everything else is wide open from that point on and Rose will be the gatekeeper on all that.

I think I should also mention to you that there may be some media coming in. They're interested, and if they are, they may come in, in the back, and take a few pictures of you all you can all wave. I don't think they're going to be around too long but, Rose, you can give us an update on that and if there are any questions. If you do have reservations about that that and don't want to be filmed, whatever, then obviously you know that's happening. We're not going to interrupt the proceedings on that, but just to let you know that this is an open forum. That's why it's in a hotel and why it's available to anyone. These are town meetings and they are designed to let anyone who is interested come to them.

And we're thankful that you're all here and with that I'm going to ask the panel members to do a quick intro of who they are and then turn it over to the folks who are the morning discussion.

Bill Scott, do you want to start?

BILL SCOTT: I'm a Bill Scott, Rocky Mountain bureau chief for *Aviation Week*, a space technology magazine. I'm based in Colorado Springs, worked for *Aviation Week* for about eighteen years. Before that, I was a flight test engineer and tested airplanes for about 12 years in and out of the Air Force, former Air Force officer and commercial instrument, multiengine rated pilot.

JIM HULL: I'm Jim Hull, State Forester of Texas. I serve as the chair of the fire committee of the National Association of State Foresters, represent the state on the Wildland Fire Leadership Council and I think probably more important than anything else, I'm a user of all these aviation resources and from that perspective and all the rest I'm very much interested in the outcome of where this whole thing goes.

JIM HALL: My name is Jim Hall. I previously served as chairman of the National Transportation Safety Board and as Chief of Staff to the Governor of Tennessee. I'm an attorney by training and pleased to be a part of this panel and looking forward to hearing the discussion in conversation from those who have assembled here this morning.

KEN JOHNSON: My name is Ken Johnson. I'm from Canada and very pleased to be invited by our next-door neighbor to take part in this operation. I was originally an Air Force pilot and then I flew a flight calibration airplane for the Department of Transport for a number of years, calibrating navigation aids. I had a period where I was

responsible for operating the airports in the province of British Columbia and then I spent about 20 years with the Canadian counterparts of the NTSB.

EARL MCKINNEY: I'm Earl McKinney on the faculty, the business school faculty of Bowling Green state University in Ohio, former military pilot, have a background in research and training and crew resource management and risk assessment and other sorts of pilot decision-making areas.

AL HYDE: We turn it over now to Kristen Snow (ph) and Trevor Everetts (ph) from Air Tractor and let you talk to the panel and we'll go from there.

KRISTEN SNOW: Thanks, Al. I can tell that you're from San Francisco with the earthquake drills. In Texas we don't ever think about that. We would discuss tornado procedures and so forth.

Well, we appreciate the opportunity to be here and to speak to all of you today and from what Al has said you like to ask a lot of questions and hopefully we can give you some answers, but if there's anything that we don't know we'll certainly write those down and can report back to you if there is some technical information or things that we can't answer.

We've prepared a little booklet for you here and thought we would just go through section by section. First of all, we're an aircraft manufacturer. We're not experts in the firefighting industry. We've built a plane for firefighting but we certainly aren't going to try to tell you how you need to fight fires. But we want to just share some observations that we've made and some things that our customers have told us and also share with you some future plans that we have.

I'll just start off with our executive summary here in front. Just to simplify things, there are two basic problems that we've observed from this fire season and also past fire seasons and that is big fires are problems and the key is to not let them get big. You want to put them out while they're small, before they grow out of control.

And then the second issue, which you are all primarily focused on, is the safety aspect of the airplanes. And so the problem or the solution there would be to utilize modern, safe and reliable equipment to accomplish that first task.

And obviously there are a lot of other factors to consider, but to boil it down to two things that's kind of where we see the problem.

In terms of the safety issues, which you are all addressing, obviously the aircraft is a primary issue there. The old aircraft that are in use can't last forever and I think we all see that it's time to modernize these planes.

Another issue though is in that area of the large fires it makes sense that if these fires grow large that there are dangers as the fires grow, turbulence, smoke, other factors

that increase that safety risk and that if the fires were put out when they were small that would just reduce that risk again in terms of safety for the people that are fighting the fires.

On initial attack, everyone agrees that initial attack is where you get the fires and certainly in the U.S. we do initial attack. In terms of using aerial resources for initial attack, I don't know if that is done as much in the U.S. as perhaps it is in Canada. We've seen in British Columbia a very good program of high importance on initial attack and just sending out all the resources immediately to put the fires out, and it seems to have worked very well for them and we would certainly recommend that that procedure and program is studied.

Some of the things that we learned when we visited the BC Forest Service in their center in Kamloops was they have a centralized command and dispatch of aircraft from one center. They have a one-strike concept; they want to send out all the resources to the fire as soon as it starts and put it out and they don't even want to have to go back and forth with the airplanes if they don't have to. This has reduced the dispatch distances and they have controlled most of their fires in less than a hundred acres.

And just some anecdotal information that we got was that for every dollar that they've spent on fighting these fires immediately they've saved four dollars on the back; if it had gotten out of control they would have had to spend four dollars.

Also, I'll mention that our very largest customer for our 802 airplane is in Spain and they have contracted with their government to have a patrolling program with our planes and they patrol with a loaded hopper with water and some foam and they make an initial attack immediately when they spot a fire and then they radio back and have communications to get more aircraft onto the fire if they need it.

In the first year of this program, which was 1995, the number of fires increased by 20 percent over the previous ten-year average, but the acreage burned was decreased by 60 percent and so that just again points to the benefits of putting out these fires while they're small.

As far as our capabilities and what we're currently doing and what we're going to do in the future, Air Tractor is the world's largest manufacturer of agricultural aircraft and also firefighting planes. We've been in business since 1974 as Air Tractor, and all explain a little of our history here in a minute.

The AT 802F is in current production. It's an 800-gallon single-engine air tanker powered by a turboprop engine. It's well suited for initial attack and can work from remote strips that are close to the fire. And it's very good in the urban interface as well because of it's never maneuverability and small size and ability to get close.

We're working on two more planes. The 1002 is a thousand-gallon single-engine air tanker and the 2002 is a two-thousand gallon twin engine that's on the drawing board.

And our purpose for being here and also for meeting with other industry people is to see what the interest is and if there is support for this two-thousand gallon tanker because frankly it's not a real huge market and if we don't have a customer then we would rather do other things where we do have customers. So that's part of why we're here.

EARL MCKINNEY: How far along in production, Kris, If I could interrupt, are you on the 1002?

KRISTEN SNOW: Well, that is fairly new and it's just the design work has been started. It's basically an enlarged 802 and so Leland Snow, who is my father, is the one that's working on his primarily right now and according to him it's something that we can just work in fairly quickly. We've scheduled a 2005 target date for delivery.

MR.: And, excuse me, Kristen, that will be certified under what part?

KRISTEN SNOW: It would be Part 23. Yeah, we'll get into more of the details of those planes here in a little bit.

Here on the second page we've just done a little bit of some numbers comparison, and this really is not to point out any one thing but just to kind of look at the status of the current tankers and comparing with the 802. And basically we all know that the aerial firefighting industry here has utilized excess military planes, they've been low cost, in some cases even free planes. I've heard that before the 1980s that none of the tankers cost more than $250,000 to purchase and tank.

And so obviously the contract rates that they were charging were based on those low cost planes. In effect, this reliance on the military planes, the surplus planes has hindered other industry from developing new planes for this purpose, because it couldn't be competitive in this market. It's not financially viable for the operators to invest in this new plane. So now we're in the spot that we're in right now.

And the chart here just gives you the little information of purchase cost, age of these different planes, ranging from the 1940s, '50s, '60s. The top of the list obviously I've put our 802, the purchase cost of it, 1.2 million, and then the rates that are currently being used right now in firefighting.

And these rates here on the 802, they're acceptable. I just took an average of what contractors had bid on these various contracts. And they're okay, but really for it to really be financially attractive for someone I think this those rates would need to be a little bit higher and you really would have to have a good season and several contracts in order to justify buying this million dollar plane.

TREVOR EVERETTS: One thing that is more of a philosophical note is that Air Tractor really believes that the capital investment for aircraft and equipment should really be coming out of the private sector and the responsibility of the state agencies who have the fires we feel is better spent than just writing contracts and allow the private sector to

go out and make the capital equipment investments and they are willing to do that. So don't waste your money buying the equipment, spent your money wisely by writing meaningful contracts. And I think the acid test is if I was to go and sit before my banker with a proposal, would he find it acceptable. And if you answer that simple question, then you create the investment environment and you'll save yourselves a substantial amount of money, which we feel you really don't need to be spending.

EARL MCKINNEY: Kristen, do you have data on the average forward speed when the 802 is fully loaded? Is that going to be later on?

KRISTEN SNOW: Yeah, we'll get into that. Trevor is going to cover the 802 statistics.

Real quick, again I'll just go through some of the pricing we've looked at for the 1002 and the 2002: 1.6 million for the 1002 and you see some contract rates there that this is just an operator customer of ours. I asked him to say if you were to buy this plane, what would you want to get in contract rates and again that's showing 180 day projected length. That might be two contracts for 90 days, but those were the numbers that he worked out there.

And you can see that they're comparable, maybe a little bit higher than some of your C-130 and P-3 rates, but within that range; and a little sneak preview on the next couple of pages of the 1002 and the 2002.

And I'll just give you a quick background on Air Tractor itself. Again, my dad is the one started his company. He's actually been designing planes for 50 years, when he was in college at Texas A&M while getting his aeronautical engineering degree.

MR.: That's a negative.

KRISTEN SNOW: He's an Aggie, yes. He started building his first airplane in the dorm -- well, not in the dorm. He started the tubing in the dorm there and built in a little garage outside. That was called the Snow S-1. And again, he saw a need in the crop dusting world for an airplane that was specifically built for that purpose. They were using Steermans J3 cubs and converting other planes, military planes for crop dusting and they just were not safe. And so he saw a need to build the planes that had the features that were necessary.

In 1958 he moved to Olney and set up production of the Snow S2A and S2B. That was his first company. Rockwell Standard ended up buying his company in 1965 and he stayed on as the vice president and general manager. They decided to close that division and by that time he had had enough of the corporate world and having to answer to someone else and so they parted ways and he started working on the Air Tractor. And Air Tractor went into production in 1974.

Today we are the leading manufacturer of agricultural airplanes and have been since the 1980s. We've built over 1,900 planes, Air Tractors, and there are about 500 or so of the Snow series as well that were built in Olney.

Our product line ranges from the 400 gallon up to 800 gallon planes and we're known for good customer service and listening to what the customers want and trying to put those things into the plane.

We've got 147,000 square feet of manufacturing space. We have 130 employees. And throughout our history we have been able to develop new planes fairly rapidly. They've all grown off of each other and just grown larger.

We have extensive and modern equipment for manufacturing, so that's really helped in our quality control and efficient production levels. And approximately 86 percent of the parts for Air Tractors are manufactured in-house, so we're not just putting together kits or things, some people ask, you know, they just don't believe we can do them from scratch, but we do.

So now I'll let Trevor go over some details on the 802.

EARL MCKINNEY: Kristin, are you public or private?

KRISTEN SNOW: We're privately owned, family-owned.

TREVOR EVERETTS: Good morning. The 802, the Air Tractor, the AT 802F was designed in 1989 and the first flight of the prototype flew in 1990. If any of you have any idea of how long it takes to design and build an airplane, this airplane was designed and its first prototype was flown in one year. That's just to give you a little idea of the dynamics of Mr. Snow. He runs this business as a family business, as Kristen said, but it truly is one of the great American success stores of a small family that has gone out and runs a very nice family business and as a result of that they're able to deliver equipment at a very affordable cost.

If you were to go back to that sheet where the price comparison on these equipment are, you can see that our nearest competitor is about a $3.5 million retrofitted Marsh aircraft. If you were to compare brand-new airplanes on an equal footing, you'll find that the Air Tractor is probably less than a tenth of the cost of any kind of new equipment that's available.

The AT 802F received certification in 1993. Again, that's a testament to very good relationships that Mr. Snow has with the FAA and quite frankly lots of hard work. If any of you have had any experience in the certification process with the FAA, you'll know that there's a saying at Air Tractor that once the weight of the paperwork equals the gross weight of the aircraft then you're about ready for certification.

JIM HALL: And were you at the company at the time of the certification?

TREVOR EVERETTS: No. I joined the company about two years ago and I've been involved in the research and development projects that Air Tractor have been involved in.

JIM HALL: And of the certification with the FAA, could you tell us a little more about that? Is this certified for this particular mission of firefighting?

TREVOR EVERETTS: That is correct.

KRISTEN SNOW: It's a restricted category airplane, Part 23 rules primarily. There are some CAM-8 regulations also in there.

TREVOR EVERETTS: And that's --

JIM HALL: I think if you could get the panel more information on the certification process, the fact that this particular aircraft has been certified for a firefighting mission and the process that was required to do that and anything that has transpired with the FAA since then, that would be helpful to the panel.

KRISTEN SNOW: Yeah, as a restricted category I think that there are several different missions that are allowed in that, and agriculture and firefighting is one of them and several other.

TREVOR EVERETTS: But it is purpose built. I mean, these are purpose built airplanes.

The computerized constant fire flow fire gate meets the air tanker board requirements for constant flow gate. The significance of that is depicted in the color picture on the next page. If you turn over your page there, you'll see a photograph taken on August 3, 2001 of the Two Buttes fire in Boise and you'll see two fire-drop lines there. The significance of the picture is that the C-130 drop is a long spattered line. I guess that's attributed to chugging, if you will, of retardant as it's coming out of the tank. The 802 drop line is a nice, consistent, solid drop line, and that's just a testimony to Air Tractor's commitment to develop really the latest technology in its fire gate.

The interesting thing about this fire gate is that it's self-adjusting, if you will. I mean, you can just dial up -- if the fire chief calls for a certain number of gallons, you just enter that number into a display panel and the gate will drop pretty much the exact amount plus or minus two gallons. If there is any kind of error, then the computer itself will adjust for that error and take it out. And again, that's just to enable the airplane to deliver a nice quality drop. And we have several pictures in here --

EARL MCKINNEY: Trevor, excuse me for interrupting. I'm not an expert on the drop rate, but we were informed about different numbers or densities, was it, between one and 10. Will this airplane do any of those between one and 10?

TREVOR EVERETTS: Coverage levels.

KRISTEN SNOW: Yeah, coverage level. In a full salvo it can get up to about a six, coverage level sex.

MR.: Okay.

TREVOR EVERETTS: And the scientific side of the definitions of coverage levels, in the 802 brochure that's included in your manual over there you'll see different types of charts and graphs that were all done by the U.S. Forest Service in California in 1993 where they actually charted -- but see, it's the fourth page of your brochure. Yeah, that's it there. So those are the results of the Forest Service study that was done on this gate.

KRISTEN SNOW: The computer itself, you can go to a level four and then in the full salvo I think it has a little bit more, a little bit more of a punch there.

JIM HALL: Does it operates as well at the higher altitudes?

TREVOR EVERETTS: Well, the Air Tractor, the word we get back from people on the ground who work with it, they're very happy with it, with the way it performs. It's extremely agile. It can come down a very steep slope with the turboprop technology. The pilot will typically come over a 10,000-foot drop and pull the engine into beta and essentially use the propeller as a braking mechanism so that he can maintain a safe drop speed whilst plummeting headfirst down a slope.

So you're able to control air speed, dispersion speed and altitudes in a more manageable fashion than, say, for example, some of your very large air tankers. I mean, the 802 in its agricultural mode is very agile two to three feet above the ground.

To give you an idea, you can't get the kind of agility with any large type of air tanker. And that's just a difference in size, that's just a function of size, but it was designed to be a very agile platform to deliver.

EARL MCKINNEY: Excuse me, Trevor. Are the flight controls just --

TREVOR EVERETTS: It's all stiff and broader.

EARL MCKINNEY: But there's no boosted controls?

TREVOR EVERETTS: Note.

EARL MCKINNEY: Okay.

TREVOR EVERETTS: It's cables, just straight cable controls. Obviously you've got your trim wheels for your rudder trim, because you've got a lot of torque on this 1300 horsepower engine. It's an extremely powerful trail dragger, but that gives it the ability to work in a very close confines.

EARL MCKINNEY: Do you typically work in grassland or brush as opposed to heavy timber?

KRISTEN SNOW: It's done some of both. The heavy timber -- it's not quite heavy enough for the heavy timber, but it does very well in the lighter fuels, but it is used in Canada, in British Columbia, in Alberta and certainly in Alberta they're very pleased with its capabilities. I think that the wish list that Con Air has for us would be to increase that punch level, they call it, of the retardant drop.

EARL MCKINNEY: Does that just translate to more retardant?

KRISTEN SNOW: Not necessarily. I think that it's the speed and the force that it comes out of the tank, and that's something that we'll definitely work on with the 1002.

TREVOR EVERETTS: Yeah, that punch level has to do with size of that gate, the fire gate. The bigger than fire gate is the bigger the whole is that you can just punch that whole load out in one go. And that has to do with the style of firefighting that they do in British Columbia. With their initial attack sometimes it's necessary just to hit the fire real hard with a single salvo.

JIM HALL: Well, what's a fire gate?

TREVOR EVERETTS: Well, the fire gate is --

KRISTEN SNOW: That's the dispersal --

EARL MCKINNEY: It's like a bomb bay.

TREVOR EVERETTS: Yeah, it's a bomb bay.

JIM HALL: It just opens up?

TREVOR EVERETTS: Yeah.

JIM HALL: And the size depends on the force?

TREVOR EVERETTS: Right. If you look at your blue brochure there right on the front of the page, you'll see the picture of the fire gate sitting underneath the belly of the plane. It's just a bomb bay basically. And the punch has to do with the size of that opening, and that opening, is more a function of aircraft design and how much you can get away with, because you still have to retain the integrity of the airframe.

So in terms of the 802 and its fire gate, that's the best that there is for that airplane combination.

The 1002 is being developed primarily for Con Air -- well, initially for Con Air. Con Air and Air Tractor have a very close relationship and they've started to replace their planes with the Air Tractor, with the 802. Fire protection FBL in Canada is another customer of ours who decided to phase out the TBMs and bring in 802s. This airplane is an extremely versatile airplane.

EARL MCKINNEY: Trevor, can I interrupting well we're still talking about performance before you go on?

TREVOR EVERETTS: Sure.

EARL MCKINNEY: I see an 850 foot per minute rate of climb at 16,000 pounds, but do you have any data on density altitudes at like 10,000 feet and what the rate of climb might be expected at altitude on hot summer days?

TREVOR EVERETTS: You know, your rate of climb is always going to go down with altitude, but fortunately a lot of these drops are typically done downhill. That's the safest way of doing this. So as soon as you get rid of that load, then your performance goes way up. I mean, it just escalates.

EARL MCKINNEY: And takeoff distances? What kind of runway do you need at 10,000 feet? Do you know?

TREVOR EVERETTS: Well, no. I don't have the exact numbers on that.

EARL MCKINNEY: No hurry, but I'd like to see that at some point.

TREVOR EVERETTS: Sure. We can get information.

KRISTEN SNOW: Why don't you continue on then?

TREVOR EVERETTS: So basically the description is just how we've described it. It's an FAA certified 16,000-gallon single-engine tanker. It's very flexible in its ability to land and take off from any kind of airfield or basically a flat field.

In one of the videos we're going to leave you here there's a whole bunch of drop test photographs and stuff as part of this video where you can see exactly how flexible the undercarriage is. It's quite enlightening to see what you can actually drop, drop this airplane onto the ground, and it's designed for survivability.

Crash worthiness is a very important subject to Air Tractor and in its building of these airplanes. It has a steel tubular construction. There's a one-inch skid plate over the pilot's head.

Our newest development in terms of a safety product is we've been working with Goodwrench to develop an inflatable seatbelt restraint system and that is very close to certification right now. And I believe Air Tractor will be the first aircraft manufacturer to have shoulder harnesses that have air bag technology built into the webbing of the shoulder strap. Again, that's just another example of Leland Snow's commitment to survivability, and that really is the reason why he designed these airplanes right at the beginning was because he was very unhappy with the types of equipment that traditional air applicators were having to use.

JIM HALL: You have recorders of any kind on the aircraft?

KRISTEN SNOW: No.

TREVOR EVERETTS: No. The only recorder on the airplane is an engine -- could be an engine trim monitoring device, but one of our other customers is the State Department and they have a fairly substantial recording requirement because of the type of work they do in Columbia. So they have an engine trim monitoring device that monitors everything from startup to shut down, all your engine parameters, airspeed, altitudes, in addition to the --

JIM HALL: Do you know what that additional -- is that like a flight data recorder? Is it in a hardened compartment or not?

TREVOR EVERETTS: It's not really. It's not a traditional flight data recorder, but it does record a lot of parameters that a traditional flight data recorder would record.

JIM HALL: Do you know what the retrofit cost on your aircraft is for that?

TREVOR EVERETTS: It's just simple instrument. I think it's, what, a 3.5-inch gauge instrument.

EARL MCKINNEY: If I could interrupt, Trevor, I think you're talking about a data logger.

TREVOR EVERETTS: Right. It's more like a data logger.

EARL MCKINNEY: It's not really a survivable recorder or anything like that.

TREVOR EVERETTS: But there is a method to be able to have --

JIM HALL: I'd still be interested in what the retrofit cost is on that.

KRISTEN SNOW: Okay.

TREVOR EVERETTS: Yeah, I think it is -- I don't know how much those things cost.

JIM HALL: Well, I'm very pleased. Please tell Mr. Snow I think that's outstanding. I've seen demonstrations of some of the commercial airlines, particularly for the bulkhead seats are going to these airbag type inflatable seatbelts and that's certainly very proactive and progressive on the part of your company to be doing that.

TREVOR EVERETTS: Well, thank you.

JIM HALL: Tell him I wish he'd look at recorders as well.

KRISTEN SNOW: Okay.

TREVOR EVERETTS: The sales in terms of 802 sales, 140 aircraft have been produced to date for the agricultural and firefighting use. Approximately 90 have been sold into United States. By 2003 --

JIM HALL: And who are your operators in the United States?

KRISTEN SNOW: Well, there's a wide variety. And when we say 90, that's agricultural --

JIM HALL: I guess I'm more interested in the firefighting companies.

KRISTEN SNOW: The firefighting, there is Chuck Kemper of Queen Bee Air Specialties in Rigby and he is the one that has had the computerized fire gate from the beginning.

Another customer named Ted Stallings of Aero Tech has recently retrofitted one of his planes with the computer fire gate, but he's also been doing firefighting with other gates as well.

Brandon Mulhern, his company is called Evergreen Flying Service. It's not the Evergreen helicopters.

And then who else?

JIM HALL: Well, if you could just get as a list, if you could, and maybe contact people for that, I'd appreciate it.

KRISTEN SNOW: Actually, you could find that through the OAS listing, the BLM list of contractors, but we can certainly forward that to you.
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TREVOR EVERETTS: And then the interesting thing is that little graph down there where you can see that the bulk of our airplanes are going into Spain. We have 32 airplanes in Spain fighting fires there, 11 in Canada, 8 in Australia.

KRISTEN SNOW: I will just make a distinction, because it can get a little bit confusing, but we refer to be 802F as this firefighting model with the computerized fire gate. So there are agricultural models that only do spraying and fertilizing. There are some 802s that are using a trans-land fire gate or a different kind of fire gate and we just haven't included that, so that's why you see five in the USA. Those are the ones that have our computerized fire gate.

TREVOR EVERETTS: And the significance of that constant flow gate again is illustrated in that picture on the drop patterns from a fire in 2001.

And then, of course, there's just the standard marketing brochure that we have here on the 802F. It just describes the airplane and some of its capabilities.

But the real proof of this airplane really should be coming from your fire management officers out of the field and you just have to talk to some of the people that have worked with this airplane and that's the value in it for me. For me to sit here and tell you how great this is really doesn't have much significance I feel, but the people out there working this equipment in the fires, on the flight lines, the men on the ground who are fighting the fires, who get to stand behind when they're calling for a retardant drop and it's a nice solid drop, there's a sense of security for them, I often say, well, which of these lines would you rather have your house built behind.

And that again is just really a function of Leland Snow's ability to go to industry, ask them what they require, listen to what they have to say and then go and deliver them an efficient tool at a cost-efficient price.

I don't know what else there is to say about the 802 airframe.

KRISTEN SNOW: Any other questions?

JIM HALL: Well, people from Texas are supposed to brag. That's the reason you're here on the panel is to sell us on the aircraft.

I'm very interested in the part on Canada, if you could turn to the part of your brochure. I'm sure the other panel members are going to have, particularly our pilot community is going to have more technical questions for you.

TREVOR EVERETTS: Okay, the Canadian strategy is --

JIM HALL: Well, we're going to try to go to Canada and I'd like to know a little more about -- who have you spoken to and where have you gotten this information?

KRISTEN SNOW: This was from a visit to Con Air and then they told us about what they were doing with the BC Forest Service and they are also working 802s in Alberta. And then they gave us the opportunity to get to Kamloops, which is where this central dispatch is for the province of the BC. And we were there with Bruce Noble, who is one of their operation supervisors, and watched this whole process while they were doing some firefighting.

JIM HALL: And that they have 200 air tankers and that's all in Canada, right?

KRISTEN SNOW: I think so, yes.

JIM HALL: And do you know how many they have in the western part?

KRISTEN SNOW: No.

JIM HALL: And I guess they told you they were writing ten-year contracts?

TREVOR EVERETTS: Right. And again the significance of the ten-year contract lends itself to that idea of getting your private investor to come up with the capital investment in new equipment, so that's a pure function of business economics.

KRISTEN SNOW: And the ten-year contracts have actually evolved, and again there's been a close relationship with the contractors, not only Con Air, but some of the other contractors, so they have a security, a sense of security with these operators, but I think that they went from they would do a five-year contract with five one-year options.

JIM HALL: Do you know whether the contract is done by -- and Ken maybe can help -- is this is done by the government or by the province?

KRISTEN SNOW: I think it's provincial.

KEN JOHNSON: It would be the provincial government.

JIM HALL: So that up there the provincial government would have the contracts.

KRISTEN SNOW: And that is one thing that Canada has that we unfortunately with all of our multi jurisdictions and agencies would have a problem with, but they have one agency in the province that's in charge of fire protection. And that simplifies it a lot.

TREVOR EVERETTS: Yeah, we hear a lot of talk about how one state would have equipment and another state will call it and then this state is worried that when the Forest Service take their equipment away that, well, when will we get our airplane back again, whereas in British Columbia there's no overlapping of jurisdictions. All the resources are considered as one and they're utilized uniformly to have what they call an initial attack.

Again, there was a video here that they gave us, which we will leave for you. And this video is nine minutes and it shows you the whole system.

JIM HALL: Did you request a screen and thing for today to show that or not?

KRISTEN SNOW: We didn't.

JIM HALL: Oh, okay.

KRISTEN SNOW: Well, not until early this morning.

JIM HALL: Okay.

TREVOR EVERETTS: But, in fact, if you turn to the last page on the Canadian report you'll have a look at the Kamloops center and it's just a picture I took with my camera there and it's a very simple three or four people run this operation and they control the entire initial attack for the province of British Columbia. The software is readily available. The technology is not rocket science. They're able to have a calling. You'll see an icon flash on the screen. They'll click on it. Pretty much like a 911 call would come in. There will be a description of the fire and then there will be a fuel assessment. A fire chief will go out to that area, make a quick visual assessment immediately. When they start seeing several calls, phone calls coming in from these areas, then they know they're onto a live one. Then they'll go and alert their resources that are the nearest. And it doesn't matter whether it's a heavy tanker, a helicopter, a seat; they just take whatever is there, whatever is available and they will dispatch it with a bird dog to fly.

And you'll see those, they look like red blocks there very faintly on that screen. Each one of those represents a transponder code for an aircraft, and give them all the usual information, altitude, heading, speed, and then the airplanes have satellite phones in them.

So, for example, we were there watching an initial attack on a fire and the plane was scrambled to coordinate and whilst in that process of getting there they changed those coordinates three times and it was just a very simple process --

(Audio break, SLC 1, side A to side B.)

TREVOR EVERETTS: (In progress) -- they're able to move their resources around, depending on a measured threat level. If they see a storm coming through and they see that it's left a trail of fires, they then mobilize their units and position them close to where they think there will be an outcome of the fire.

They've taken it one step further to even go out into these communities and gather a photographic database of property to assess that threat level and the risk level to the

community, and they build that up. But, Ken, you know all about that system. I mean, for me to sit here talking about your Canadian system --

KEN JOHNSON: I don't know all about it. I know a little bit about it. But I think the U.S. Forest Service is putting into Boise a version of this or something close to it.

KRISTEN SNOW: Yeah, we did hear about the Flight Following System that the U.S. Forest Service was working on and that's certainly a good thing. The main thing, and again here it's so complicated with all the agencies you would have to see how this could be adapted, but just to be able to send all the resources out and nobody to feel like, oh, you're taking away my planes, because they know that if they have a fire in their area all the planes will go there. And again this one-strike concept they just put everything out, whether it's a 3,000 gallon tanker that's the closest or the 802s, they work their 802s in groups and they told us that they've reduced their average dispatch distance from 102 nautical miles to 75 nautical miles by doing it this way.

JIM HALL: In your experience, conversations, do you think that this aircraft can put fires out without the support people on the ground?

TREVOR EVERETTS: You're always going to need support people on the ground. Now, I mean, when you say support people, do you mean --

JIM HALL: Firefighters on the ground.

KRISTEN SNOW: Firefighters on the ground I think are always --

TREVOR EVERETTS: You are always going to have to have your firefighters on the ground.

JIM HALL: And in Canada do they have to have a firefighter on the ground before they begin the initial attack?

TREVOR EVERETTS: Not before. Not before. The fire crew will follow up on an initial attack. Initial attack is just that; it's an initial attack, and all the resources are thrown into an initial attack.

Now, in this country you've got your smokejumpers and they should be considered a function of your initial attack, but you can never totally replace having your firemen on the ground cleaning up.

The air tankers and all these fire retardants buy you time. They do have the ability to put fires out, but you still need your crew to go in and cleanup afterwards.

JIM HALL: Do you all recommend a specific kind of retardant?

TREVOR EVERETTS: No. We're not in the retardant business.

JIM HALL: Have your tanks had a problem with any of the retardants that have been used?

KRISTEN SNOW: I don't think so. I think that they use the liquid concentrate retardant and mixed, but the plane is made for corrosion resistance in the environment, in the agricultural environment for fertilizers and all sorts of chemicals, so there haven't been any issues on the retardant.

JIM HALL: If you were going to the bank to buy one of these aircraft, what would you depreciate the life of this aircraft over, and tell me a little bit about the maintenance of the aircraft and the aging of the aircraft.

TREVOR EVERETTS: Well, as you know, all airplanes age from the moment they leave the plant.

JIM HALL: Even human beings. I've observed that personally.

TREVOR EVERETTS: And some are sadly just required to work harder than others. The statistics on the current tanker fleet, when you're asking an aircraft manufactured in 1940 that's not purpose built for dropping retardant to now go out and labor its poor life away doing probably one of the hardest jobs that you could ask of an aircraft. I mean, you're with the NTSB. You understand the load factors that go into dropping retardants, the loading and the unloading and the loading and unloading cycles for equipment that's not specifically designed --

JIM HALL: That's why I'm very interested in the FAA certification process as to whether that was looked at in terms of the certification of your aircraft, because we know, of course, in terms of the FAA's certification of military aircraft they're just accepted for their military use. And so if we can get additional -- I assume your father is about as familiar with the FAA's certification process. I'd also be interested in his comments on how it might be improved, because I would imagine he also has some comments on that area as well.

But one of my concerns has been obviously the fact that these aircraft are being put in service for a mission that they were not certified to do.

TREVOR EVERETTS: Right.

KRISTEN SNOW: Right.

JIM HALL: And now the question is, is there an aircraft population out there available to the Forest Service or to others to perform the functions that need to be performed? And I guess the one function we're talking about here that we hear is punching through the forest in order to deal with some of these fires.

So I have a real interest in obviously the future aircraft, but tell us about -- what would the bank, what type of life would you put on the aircraft in terms of the bank loan? How would you depreciate your airplane? You mentioned the bank loan; I didn't. So I just wanted to --

TREVOR EVERETTS: Well, fortunately I haven't had too many scrapes with bankers, but I imagine if you were to go sit down in front of your banker he would want to know where you're going to get your money from and how much you're going to get and how much --

JIM HALL: If there's any money left.

TREVOR EVERETTS: That's right, and how much should I limit you, and then the bank needs to make its profits and you need to make your profit and how long can you sustain this for.

MR.: Maybe I can put the question another way. What would be the number of years of useful operational life of the airplane?

KRISTEN SNOW: I think just to answer that in terms of what we've seen from our other airplanes, there are still some of these 1960 vintage Snow aircraft that are still be used for spraying. Again, it's all a function of maintenance and the operator and how well the operators take care of their equipment. In the ag world we see in the south the operators down there they just work the planes and work them until they kind of fall apart, but 20 years is not out of the question. The oldest 802s right now are nearly ten years old and still --

JIM HALL: Do you all have any type of increased maintenance program or are you following with any type of -- as you know, the federal government is investing quite a bit of money now in aging aircraft studies at Sandia and other locations. And despite the fact that all my friends in the aviation business always tell me that an aircraft can last forever, we're spending as a government a lot of money in trying to be sure they don't fall apart on us in the air.

TREVOR EVERETTS: I know that Air Tractor is in discussions with the FAA on coming up with a combination of a crack growth tolerance program, a maximum life program and combining the way traditionally they've defined the useful life of wing spars, for example. And I know that our chief engineers and Leland Snow are trying to work with the FAA to come up with something that the industry, something that's sensible.

Sometimes, a lot of times it's always one extreme --

JIM HALL: Sensible for the person in the airplane or the person that owns the airplane?

TREVOR EVERETTS: Well, sensible for everyone.

JIM HALL: The person flying I hope.

TREVOR EVERETTS: Yeah, sensible in terms of, for example, if you read the ADs on the C-130s and the PB4Ys that came out, they talk about a dye penetrate method for inspecting for cracks. Well, first they'd say, well, if you just get in there with your human eye now and look for a crack that's 1/10 of an inch, I see there's only one of you on the panel here who doesn't have glasses on but he probably has contact lenses. It's first look at it with the human eye and if we don't see anything or if we see something that's sort of we think, well, okay, then go ahead and get a can of aerosol spray and spray on a dye penetrate, wait some time, then spray on a reactor and if you see a red line, well, okay, then you have a crack and let's measure the crack.

Then, of course, there's another level of that, which is the eddy current inspection, which is now equated to now you're getting out the microscope and you can do in eddy current test and stick a probe on and send and electrical current through the metal and that way you can then detects cracks that are neither detectable by the human eye nor by dye penetrate methods, but now you know there is a crack in the metal due to fatigue.

So now what do you do? Okay, the FAA is saying, well, perhaps then we should look at a crack growth tolerance program and we'll go ahead and monitor the growth of this crack and do it on a specific number of hours.

So Leland Snow and the engineers at Air Tractor have been working with the FAA to say, you know, all of this is great but let's find a balance, let's do all three. Sometimes the FAA says, well, no, you're just going to do it our way and that's what you're left with.

To give an example --

AL HYDE: I don't want to interrupt but we have about 15 minutes left and I promised our pilots and you promised them equal time, sir. And they've got questions and I want to make sure we get to their technical questions and still give you time for three or four minutes to sum up. So if you can wrap that answer up and then we'll move to --

TREVOR EVERETTS: Yeah, just to really finalize it, what Air Tractor has done in its quest to evaluate fatigue of wing spars and that kind of thing is they've gone out and strain gauged a whole bunch of different airplanes in the field to gather data, stress data on wing spars and then process all that data. And the findings are really interesting and what were finding is that flying styles and flying techniques, based on the flying ability of the individual you put in that equipment is related to fatigue life.

JIM HALL: So what you're saying is training is important?

TREVOR EVERETTS: Training and being sure that you have pilots in that equipment who understand that this is a piece of equipment and they handle it appropriately.

JIM HALL: And I assume there are recorders that could be placed on that airplane to see whether the pilots are flying within the envelope.

TREVOR EVERETTS: Definitely. Well, strain gauges. You can put strain gauges on any component.

JIM HALL: Well, let me defer to the rest of my colleagues, if I haven't offended them already.

MR.: Could you tell me whether the 802 was an augmentation of the fleet for the people that have them or it displaced something else, and if so, what was displaced?

KRISTEN SNOW: You're talking about our customers who bought the 802s?

MR.: Yes.

KRISTEN SNOW: Typically, they have grown with us. We would build a 400 gallon plane and they would buy that and then we would build a 500 and they would replace -- the whole industry, agriculture, has gone to larger planes and so the 802 has just grown with them.

MR.: But in fire suppression?

KRISTEN SNOW: Oh, okay. I think that there were a couple of cases where 802s have replaced some of the heavier tankers on contracts. I don't know of any specific examples, but I have heard that.

MR.: I'd like to hear if you can jump ahead about the new twin.

KRISTEN SNOW: Okay.

TREVOR EVERETTS: Let's see. The 2002 is an airplane that has fixed gear, fixed gear undercarriage. The pilots among us here will know that that means it's considered not a complex airplane. You've got some basic performance sheets on the 2002.

The interesting thing about the 2002 was that in terms of what Air Tractor might need from a panel such as this is it has taken Air Tractor five years of working with the FAA to come up with a set of rules --

KRISTEN SNOW: Certification based.

TREVOR EVERETTS: -- just the rules to give us a certification basis for an airplane of this size, and Air Tractor would like to keep its in the restricted aircraft category because it's a purpose built airplane.

The debate is the FAA is trying to drag it into the public --

KRISTEN SNOW: Well, into the transport category, Part 25.

TREVOR EVERETTS: -- into the transport category, which --

MR.: Kills you.

KRISTEN SNOW: Yeah.

TREVOR EVERETTS: As you know, yeah.

KRISTEN SNOW: It doesn't make any sense. But after five years there has finally been an agreement of some of Part 23 rules, some Part 25, where it was appropriate, and they've come up with something, because frankly this is -- there aren't any other planes like this that have gone through a certification like this. Once it gets past a certain weight you have to go up into the Part 25 rules.

And I think that this is going to be up for public comment at the end of this year, possibly early 2003. And when and if this airplane does go into development, we anticipate potential -- more problems or more things that we didn't think of or things that will come along that we would need some support from the government to say, hey, this airplane is needed and let's get over these stumbling blocks.

TREVOR EVERETTS: See, we're heading into new territory with the FAA. To have a restricted category airplane of this size and magnitude, it's the first time for them. They don't like to move into new areas too easily.

But again, it's a restricted category airplane. It's just going to be used for the purpose it's built for. It's nothing more than that.

But it has taken five years, I mean five years of continuous letter writings, five years of --

MR.: Which FAA are you working with? Fort Worth?

KRISTEN SNOW: Well, Fort Worth, but this has even been with Washington D.C. and also the Seattle ACO when it was the Part 25. And there were a lot of unanswered letters, a lot of frustration on our part of unresponsiveness and perhaps that's just because they didn't know to do with it. But finally through the small airplane

directorate, a combination of small airplane directorate in Kansas City and the Fort Worth ACO in Washington D.C. they've come up with something.

TREVOR EVERETTS: The real interesting thing about the 1002 and the 2002 is that these two airplanes are able to exist because of the PT68 -67F engine, which is a 1600 horsepower turboprop engine. Now, that in itself is not such a special thing. What's unique about it is to be able to turn that engine at 1700 RPM requires a special gearbox interface with propeller and the engine. Pratt & Whitney two weeks ago, Leland Snow and Con Air went up and had meetings with Pratt & Whitney and they have agreed to develop the gearbox that's required for this engine. The significance of the gearbox and the slow turning propeller is one of pricing. Once you get up into these very high power turboprop engines you will typically see composite propellers on the ends of these engines. And the composition propeller is a nice propeller. It's just that it's a very expensive propeller. I guess they're about 150 to $200,000.

MR.: Composite?

TREVOR EVERETTS: Composite.

KRISTEN SNOW: Yeah, composite.

TREVOR EVERETTS: Propeller. Like you see on your turboprop commuter airplanes. They're all composition propellers.

MR.: But you want to stick with metal, is that correct?

TREVOR EVERETTS: That's correct. And that's a function of maintenance. If you pick up a stone chip in the field you can just get out there with your A&P mechanic and he can just dress that out you're back in business in half an hour. A composite propeller, that propeller then has to be removed, sent off to a factory, bonded and all kinds of expensive processes. It doesn't make the airplane affordable. It doesn't make it functional.

So, in order to stay with your aluminum propeller, the five-blade propeller, which is a very nice propeller, that gearbox is a critical factor.

Now, Pratt & Whitney have agreed to develop that gearbox and make the engine available, and as a result of that the 1002 is going to be developed for Con Air. And then the evolution of that is going to be into the 2002.

MR.: You're using this like commonality between the two airframes or is the 2002 a completely new airframe?

KRISTEN SNOW: It would be completely new airframe. You can see it's got the tricycle gear.

MR.: But you will get some certification credits for the 1002, specialty gearbox --

KRISTEN SNOW: Probably, yes.

MR.: -- and some of the propulsion aspects I guess.

TREVOR EVERETTS: Well, this is one thing about the FAA. Just because it's certified in one environment they tend to want you to repeat the whole process in a second environments.

MR.: At least you have precedent.

MR.: Unless it's a public use aircraft.

TREVOR EVERETTS: Even then.

One of the flexibilities of the 802 is that we that an 802 that has been put on floats and it's been developed as a float with a scooping capability on the 802. We have another 802, the one that's gone into Colombia is bulletproof, with self-sealing tanks.

MR.: I think the gentleman in the back would appreciate it if either of you can pull the microphone closer or speak a little louder.

TREVOR EVERETTS: You know, we have a multi-role airplane in the 802F and the 2002 is essentially an evolution of all the technology that Air Tractor has. The tail section of the 2002 is, in fact, a tail that's already been designed for another prototype airplane that Air Tractor is in the process of designing and building for another customer of ours. The tapered wing on this airplane is a tapered wing that's a similar wing to another airplane that Air Tractor is designing for another customer of ours. And then, of course, the engines and the propeller and the gearbox are being developed for the 1002.

So the fire gate technology we have, the engine gearbox technology, the wing technology we have, the tail is pretty much all designed in the rear half. It's just a function of bringing it altogether in to make the plane.

MR.: What sort of reception are you hearing from potential customers for this airplane?

KRISTEN SNOW: There has been an interest also from Con Air. It hasn't been shown to that many people. In fact, my dad just yesterday and today is down in Phoenix with the Aerial Firefighting Industry Association and presenting them with these planes. So when we get back to Olney we will find out what they have to say. But they obviously would be the potential customers.

MR.: But to bring an airplane like this into the firefighting arena in this country, the forest service, the BLM, everybody would have to totally change their contracting philosophy, is that correct, in order to make the business case for the operators?

KRISTEN SNOW: I don't know if totally changing, if it would be that extreme, but I think that definitely increasing the contract rates and increasing the year lengths of the contracts would definitely help make the incentive.

MR.: For any new (off mike.)

TREVOR EVERETTS: Right, yeah.

MR.: You've delivered these airplanes into Australia, Canada and particularly Spain. Do those countries just accept the kind of certification you've gotten from the FAA or do they do their own?

KRISTEN SNOW: They are certified also in Spain and Australia. We've just gotten it in Brazil. So we go through an additional certification process with them. Typically, there is the reciprocal agreements and we send them all of our FAA data, but they like to do their own thing and send their engineers to the factory.

MR.: And are they requiring changes?

KRISTEN SNOW: No. Not anything other than maybe some placards in Spanish.

TREVOR EVERETTS: Typically it's the placards that have to all be changed.

KRISTEN SNOW: But no major changes.

MR.: In developing the 1002 right now, I guess one has been built. You have a prototype now?

KRISTEN SNOW: No. We're not that far along. It is in the design stage right now.

MR.: But you do have to instrument these airplanes in order to meet the FAA requirements because you have to give them the data, right? You have to provide the data package to the FAA, so therefore you have to instrument them and record so you have characterized this aircraft working in its intended environments, have you not?

KRISTEN SNOW: Well, to answer that question, I know in the past we've been able to do analysis in terms of fatigue and all of that, and then we've come back later and have done some testing and collected data for the planes, in addition to the analysis.

Now, in terms of future --

MR.: It's a combination, yes.

KRISTEN SNOW: Yeah. In the future we will probably have to have that.

TREVOR EVERETTS: And as part of that three-phase program, how do you determine the useful life of an airplane, and mathematical analysis was the first one. But that is, in fact, being done as we speak with the 1002, all the design analysis and stress analysis of all the airframe components are all being submitted as we speak to the FAA. And Leland's idea is, well, okay we've super sized the 802 so he views this as a program that he can just in the midst of everything else we're doing with Air Tractor it's well within our ability and it should be a fairly simple process, because most of the ground has been covered already in terms of the designed of it all.

MR.: Since we're almost out of time, I'll defer to my other panel members.

MR.: I just have a couple of cleanup items. Maybe I missed it earlier and didn't have enough coffee in me or something. There's five in-service with the BLM now? And who's operating those for the BLM?

KRISTEN SNOW: Okay. Again, the five refers to the number with our computerized fire gate, the 802F. We didn't quite get there. If you look under U.S. report there are actually 14 802s on contract with the BLM. Five of them have the computerized fire gates and the rest are using either a trans-land fire gate or a Hatfield fire gate, which are not computer-controlled.

MR.: And what year did that start?

KRISTEN SNOW: I think '93 was the first year that Chuck Kemper had a contract in Colorado.

MR.: And that's -- how many different contractors are flying them?

KRISTEN SNOW: Probably about five or six, just off the top of my head.

TREVOR EVERETTS: And that really is just a function of the contracts that are written by the contracting agencies and what they call out in their specifications and what their requirement is. Air tractor would obviously like to see a lot more 802s out there working, but it's a function of budgetary problems.

I don't know if it's possible for this panel to maybe think about getting a hold of the government and saying to them, okay, you're spending $1.6 billion putting out fires. What's the possibility of you giving us 10 percent of that figure upfront so that we can invest into an initial attack program, knowing full well that you have this 1:4 ratio and that way you're able to fund the programs you need, get the money into the contracts and

put these fires out quickly, show them that you can perform and save money for the states and the communities.

And I think it's easily obtainable. The proof is there. The numbers are there. They've done it in Spain. They've done it successfully in Canada. And for every dollar you spend upfront you can save four on the back.

JIM HALL: But in Canada and in Spain who buys the airplanes, the government or private contractors?

KRISTEN SNOW: No, private operators.

TREVOR EVERETTS: Private operators.

KRISTEN SNOW: Yeah, I knew in Canada there are some initiatives for their modernization to partner with federal funds and private industry to purchase new planes or to modernize the fleet. We've heard that from Con Air as well.

TREVOR EVERETTS: You know, if a fund was developed for the state forester's association to administer an initial attack program, I know they have the credibility with the federal government and the trust of the federal government where they could have a monitored program and are very confident that they would be able to show substantial savings in being able to put these fires out early. And I know they all work very well together and if we could get over this fear that if I lose my asset today I might not see it for three months and if I get a fire in my district then I've lost my asset so I'm not going to let it go.

MR.: Excuse me. Could you provide just a one-page white paper on that concept to us?

TREVOR EVERETTS: Sure. I could write something up.

KRISTEN SNOW: Okay. On this concept of --

MR.: What Trevor was just talking about.

KRISTEN SNOW: Okay.

JIM HALL: And check out the U.S. procurement process and tell us how we do it.

MR.: I do have a final question for you.

JIM HALL: I've got one more.

MR.: Yes, sir.

TREVOR EVERETTS: I think the credibility of the State Forester's Association is a very credible force.

MR.: Are you sure of that?

TREVOR EVERETTS: Yes.

KRISTEN SNOW: We have it on good authority.

TREVOR EVERETTS: They're an extremely united group. They've managed to get -- if you can imagine three different governors of three different -- from three different states all working together for a common goal.

KRISTEN SNOW: Just three?

TREVOR EVERETTS: Yeah, they're not just three.

KRISTEN SNOW: Western governors.

TREVOR EVERETTS: Western governors association. I mean, that's a truly -- I guess the word is bipartisan effort to and a lot of credit has to be given to that association, because they have crossed the political boundaries and the political squabbling and are very goal oriented and have implemented programs. And I think if they were used as a body to channel funds to set up an initial attack program, they're certainly the right people to handle it. They've exhibited the right type of cooperation with each other and the federal government I believe is trusting their judgment.

AL HYDE: Mr. Chairman, last question.

JIM HALL: I thought Earl had one more.

EARL MCKINNEY: No, I'm done.

JIM HALL: Yeah, in Canada one of our problems here is, is that 4:1 anecdotal or did they actually have the hard statistics to back that up? Because, you know, one of problems here on all this stuff is a lack of data.

KRISTEN SNOW: You really should ask them. This is something that Con Air --

JIM HALL: Well, who can we ask?

KRISTEN SNOW: Okay.

JIM HALL: Because if we can get Ken to intercede, he speaks the language in Canada.

KRISTEN SNOW: I mean, I would get to the BC forest service.

MR.: Not to very Barry Marsten.

KRISTEN SNOW: Well, Barry and the Con Air people are the ones who told us that this is what they've heard from BC.

MR.: Now, I mean I'm very interested in what you have here and I think a lot of it makes a lot of sense, but if you go in and make a statement like that, the Office of Management and Budget is going to say, well, that's wonderful and we'd like to consider that but where's the data.

MR.: We have a position of some papers from Bruce Noble and his people in BC with part of the early benchmarking efforts that were done. We've got some of the data on this and we can --

MR.: And who is we?

MR.: We is the Forest Service --

MR.: The Brookings Institution?

MR.: -- and Brookings and we've got pieces of this and Bruce Noble is the contact and we've actually gone up and talked to him. We can provide that.

KRISTEN SNOW: Good.

MR.: Good.

AL HYDE: We are at a time point. I want to thank you both for being so forthcoming and we look forward to your white paper on this and a few other odds and ends. We'll take a break and come back at 10:30.

(End of segment.)

(Begin Tape #2, SLC)

AL HYDE: We're ready to pick up with what we call the public comment portion of it, and this will be reasonably flexible as we go through the rest of the morning and into the afternoon. I will remind you that there is a lunch break from 12:00 to 1:30. We've got some people signed up for this morning portion. If we get done earlier, then we'll go to anyone else who wants to speak who is leaving before lunch or leaving at lunchtime obviously, and then at 1:30 we'll come back and I understand we have a large

group of folks who want to get together and come up here and sit and share a few points and pass the mike back and forth and we'll start with that at 1:30.

Anyway, John, think you for being here and you're on.

JOHN MCCONNELL: I'm John McConnell from Scottsdale, Arizona. I'm privileged to speak to this panel before me and to the audience. I would like to give you a little bit of basic background. I am a former Air Force pilot, World War II. During my tenure I did quite a bit of formation flying. This knowledge will be invaluable for the thoughts and ideas I'm about to present to you.

I am presenting now some history of the accomplishments of the Air Force. I'll take you back to May 12th, 1945, the American and British Air Force put 1,000 planes over Germany in just 24 hours. Think of that. That was 1945, 57 years ago.

The Berlin airlift: planes flew night and day through all kinds of bad weather to save Berlin.

The Kosovo War of recent was practically won by air power.

Just recently I had four basic patents submitted to be able to convert most any cargo plane with very little structural modification to be a vehicle to spray water in order to create rain for fighting forest fires with a rotating boom and a method to control the size of the droplets while in flight. Ask any firefighter what he prays for: It's rain.

Also, the environmentalists should love this as this method would certainly hold down air pollution along with many other advantages.

I attended a town hall meeting in Sholo, Arizona about two weeks ago concerning the Rodeo Chedeski fire, Arizona's largest fire to date. Now these folks were mostly concerned about what happened in the past and rightly so, as they had lost most everything: homes, animals, trees, et cetera. A lot of the people wanted to know what we could do in the future as they were starting to rebuild their homes. The most important facts I got from this meeting was the loss of time, two to three days before real action was taken to save the towns of Heber and Overgaard; almost 500 homes were lost plus millions and millions of dollars in collateral damage.

The plan I would like to propose would encompass two to three hours on the job, not days. These towns were only 1.5 hours away from Phoenix. Loaded aircraft could have been on the fire site in a matter of hours and would approach the fire at its beginning before it becomes a crown fire.

The principal part of my idea is to attack the fire as soon as possible; in other words, go on the offensive mode immediately instead of being in the defensive mode waiting for the crown fires to flourish.

With the help of the interagency, this could be accomplished easily with their communication and equipment facilities. The program could help and enhance the existing program not replace. We still need the helicopters for spot fires and retardant planes to do their jobs.

I believe the overall savings would be incalculable when you consider the thousands upon thousands of trees, the hundreds upon hundreds of homes, the pollution factor, the erosion factor and the insurance claims.

The year 2000 7.4 million acres burned, 30,000 firefighters were called out at a cost of over $2 billion. This program would give more money to be directed toward thinning and controlled burns. I recently read that it takes almost 100 to 150 years for the forest to come back to the original state. As I see it, time is of the essence. Due to many conditions, there is a feeling that forest fires will become our greatest challenge in this century. America has one-third of its total area covered with forests. Canada I would believe must have two-thirds or greater; I'm not sure.

There are hundreds and hundreds of pickled cargo aircraft sitting in the desert. A quick conversion is possible. My theory creates a rainstorm over a large extended area and not bombing, but I would concentrate over the leading edge of the fire.

That's about all I have to say. If you have any questions, I'd be happy to answer.

MR.: John, you mentioned that you had gotten patents for certain airplane conversions. Is that what you mentioned early on? Which airplanes do you think would be most appropriate?

JOHN MCCONNELL: Any cargo plane. Any one of them. This takes hardly any structural modification. The boom is in a longitudinal position for takeoff, for landing and normal flying. At the point of where the fire is at the boom transfers 90 degrees to the aircraft body and that's where the solution would be delivered.

MR.: I think I understand generally the concept of seeding clouds to generate rain. You're talking about something altogether different. Is the rain that falls all made from the water that comes in the airplanes or do you put something out that is going to generate more water droplets than what you have come out of the airplane?

JOHN MCCONNELL: No. The water would be stored in the aircraft in a container. I have a lot of engineering already done on that, as I do on the hydraulics of the aircraft, the size of the drops and so forth. I mentioned 1,000 planes over Germany; I'm not talking 1,000, maybe 10, maybe 12. Maybe each state might have 10 or 12.

MR.: How big is this boom? I'm trying to get a feel for how far it would extend on each side of the aircraft once you have it in the horizontal position.

JOHN MCCONNELL: Well, that's going to be determined basically by what aircraft we're going to use. And I'm basically looking at 40 to 50 feet, about 15 to 20 feet each side from the center.

MR.: Are the ends supported in any way? Is it just hanging in the middle?

JOHN MCCONNELL: On the sides of the aircraft as the boom becomes in its position two hooks would carry the weight of it from the aircraft floor. And also one of the patents covers a shield that is like a wing. It prevents air from hitting the boom directly. It would force it out and over.

MR.: So it's sort of an aerodynamic leading edge of the boom is what you're saying?

JOHN MCCONNELL: Absolutely. That's it. Right.

JIM HALL: And how many gallons of water would these tanks contain?

JOHN MCCONNELL: Well, that's a good question, because just a little bit of data I have at this point is that most of them are working around 3,000 gallons, but these were figured before the more modern aircraft. One figure I have is 3,000 gallons will produce a one-inch rain over one acre of ground and that's pretty a good rain. And the fact that you're just fighting the leading-edge, and many of those leading edges are snakelike, they're thin, they're not horrendous fires at that point, but those do lead to the crown fires. So the theory to put them out, and I think you've heard this many times from the people that were presenting their case before me, is I think it's the total secret of containment.

MR.: Have you got a little paper or something on this that you can provide to the panel how it works without interfering with your proprietary rights?

JOHN MCCONNELL: Well, a friend of mine just made a drawing of the mountains and the fires and planes coming in, if you would like to see that. It's very simple drawing, but it depicts exactly what I'm thinking about, not a large armada, just enough planes to put out that leading edge of the fire. Now when it gets to be a crown fire, then we're going to have to fly higher, we're going to have to have the drops bigger and a lot of factors come into it. That's why I have the openings to be variable, because --

EARL MCKINNEY: Do you mix any air with it?

JOHN MCCONNELL: Pardon?

EARL MCKINNEY: Do you mix any air with it or not?

JOHN MCCONNELL: No. Now, this could be converted to do retardant, but my basic thing is with water creating the rain. That's what it amounts to.

MR.: I have some experience with tankers that we used for icing other airplanes, so you fly the test airplane behind the icing tanker and I'm here to tell you that getting the right droplet size is not a simple matter. It's very, very difficult, so that would be one thing you would have to work on a good bit.

JOHN MCCONNELL: I have a hydrologist working on that right now.

JIM HALL: Have you had an opportunity to discuss this with the interagency tanker board or any of the other folks?

JOHN MCCONNELL: I was up to the interagency in Boise about three weeks go and that was before my patents came in and I didn't want to divulge much, but I went all through the interagency and what a great program that seems to be. It's why I mentioned the fact of the communication facilities could get these aircraft into the air and onto the job in no time. I have discussed it quite a bit with my congressman, JD Hayworth. In fact, this Rodeo Chedeski fire was in his district, so he is really involved in the forest fire. And I met with him. I haven't had any bad vibes yet. And he told me to proceed at all speed and that's why I'm here.

AL HYDE: Anything else?

JIM HALL: Well, we appreciate very much your coming up here and making this presentation. Obviously, if there's any additional information you'd like to provide us with later, sir, we would appreciate it and we wish you well in your work and thank you for your service in World War II.

JOHN MCCONNELL: Well, thank you very much. My pleasure.

AL HYDE: Mike, where are you? Do you want to come up and let's get you on since you've got to go, and so you're next.

MIKE GLEN: I'm just going to take up a few minutes of your time. I had planned on presenting some material to you in Sacramento and I just happened to be in Boise and came down here today to see how the panel conducted the meeting. And my voice is kind of a little sore this morning, so I can't really talk too long.

My name is Mike Glen (ph). I'm with the Bureau of Land Management. I'm presently based in Lancaster, California. My background is I'm an air tanker captain for Hawkins & Powers aviation for 14 years. I was employed by the Forest Service as a lead plane pilot and recently I was a lead plane pilot for the Bureau of Land Management.

I'm going to make a proposal to you that your schedule is pretty tight, but I'd like to give you an opportunity to be educated on a lot of fire fighting that I think maybe you lack because of your background. At some time in the near future I can gather some instructors to give you a course on fire fighting on the ground, in the air, but I think it

would be helpful for you to understand a lot of the information that's being presented to you.

I know that your schedule again is very tight. It could even happen after you are done with your panel meetings, town meetings, and be presented before your final proposal.

Other than that, I really don't have too much more for you. I know that you have a long ways to go. There's a lot of things that I know you don't understand and you're trying to learn that information now. So if I can answer any questions in the short period of time I have, I would be happy to give it to you.

MR.: Mike, what years did you fly with H&P and what airplanes?

MIKE GLEN: I flew with H&P from 1980 to 1993. I was a captain on a PB4Y, a C-119 and a C-130.

MR.: During those years, what was the average number of training hours that was devoted to air tanker crews? Can you give a sense of sort of the average and if that was increasing or decreasing and how it was administered?

MIKE GLEN: Basically, before the season would start the tanker crews were brought into the home base, for example, Grable, Wyoming and in my case usually it was about a weeklong training session. Those training sessions included basically reviewing the aircraft performance, but there was flight training that was involved where you actually went out and had to get current on instruments in the aircraft. We also would get current with dropping water off the aircraft to meet the contract specifications. Along with that, each pilot usually was working with mechanic crews that were working on the aircraft.

The time that the pilots are usually brought up for this training session was at a period of time when the tankers were actually been inspected by either the OAS or the Forest Service. So usually when the training was done, that's usually when the tankers are then inspected and the pilots are also inspected at that time and observed doing water drops.

MR.: Can you give us a sense of number of hours --

MIKE GLEN: Number of hours I recall we probably maybe would do anywhere between 5 to 10 hours of flight training. The ground school training was approximately 16 to 20 hours and that would vary. Each company has their own training criteria.

MR.: And there would be, as I understand, two to maybe four different companies throughout the country that would fly a similar platform that you're flying in any given year. Is that fairly true?

MIKE GLEN: Yeah. For example, there was actually only one other company besides H&P that flew 4Ys and the company no longer uses that aircraft.

MR.: Did you guys ever share information about the employment of that airplane over the fire or little things that you learned? Tell me about how the community shares information.

MIKE GLEN: You know, I can't really tell you what the operators actually do but when you're on a tanker base the pilots and mechanics usually would share information and, in fact, it's very common for, say company X if they had a mechanical, that company Y, their mechanics would actually come over and help fix that aircraft. So there's no doubt in my mind that the information was exchanged as to how things were operating with other companies, but that's at a very low level. What happened with the operators and the owners I really can't tell you.

MR.: I guess I was using the term operator to mean pilots. I'm sorry. So would the pilots share information?

MIKE GLEN: Oh, and the operators being the owners I mean.

MR.: But the pilots, would there be -- did you ever learn much from other people?

MIKE GLEN: Yeah, I think the pilots -- at least I used to. I would share information, you know, how was your aircraft flying today, more into the 130 there's other operators flying more 130s than there were the 4Ys of course and we would shared techniques and how we were flying on the fire, flap settings, airspeeds, procedures and so forth.

MR.: But you're not face-to-face with these people during the year, are you, or are you just talking about people that are also there at your tanker base?

MIKE GLEN: Usually when there's a fire -- well, yeah, it could be at the tanker base on a normal standby date, but usually that information was transferred when there was a fire and there were several other tankers at a tanker base.

MR.: So, did you ever attend this National Firefighter Academy training?

MIKE GLEN: Yes. I'm actually on the steering committee for NAFA and one of the instructors. And actually the information that I can give to you, it would be actually a small, mini NAFA course that we could give to you within a day. That's a weeklong course, but we could combine it with a lot of information and combine it into one day.

JIM HALL: What is it you'd think -- oh, I'm sorry. Go ahead, Earl.

MR.: No, I'm just understanding early on -- I'll just finish this up -- early on the NAFA was designed to practice actually employing the equipment. Is that true that in recent years it has not, it's been strictly classroom?

MIKE GLEN: Actually, NAFA, the idea behind NAFA was that each company and operator trained their pilots in maybe a slightly different matter. I learned to fly tankers from a gentleman by the name of Gary Stevens. Gary Stevens learned to flight tankers from another fellow. And so I basically learned through a chain of different pilots.

Now, company X, that happened the same way and they may have done different things a different way.

So the idea behind NAFA was to get all the pilots together in one room along with government people -- go ahead.

MR.: Can I just interject and asked my -- but when you say all the pilots, all the tanker pilots, lead pilots, every pilot that gets over a fire or just the tanker pilots?

MIKE GLEN: Tanker pilots were the majority of students that we wanted to have. We wanted a mixture of lead plane pilots, air attack supervisors and we wanted helicopter people in there is well, along with seat operators.

And the idea was to get everybody in the same room, talk about the same thing, try to get everybody on the same page and standardize the way that we operated air tankers over a fire and hopefully have a good exchange of ideas from the experience of tanker pilots so that tanker pilots who are coming up in the industry could learn from these gentleman. And again we were trying to standardize and we're still trying to standardize the way you fight fire with these aerial platforms.

MR.: Was I correct in assessing earlier that we had heard that early on there are actual airplane hours devoted to this course from the contract or is that my mistake in understanding?

MIKE GLEN: King for the day and I would have liked to have had that happen, but unfortunately the cost of doing so is prohibitive. And also, for example, say, we hold the course in Arizona, which is where we normally have the course -- we've had it in Boise as well -- you'd have to have an operator fly their airplanes down, which cost thousands of dollars. In the big scheme of things maybe that's not too much, but for those operators it is, it's a big deal.

So one of the ideas that we had to maybe curb those costs is to try and absorb it through the contract itself and they would make up the money somewhere. But it's been a long process and that's never really happened. That would be the ideal thing if we could actually have classroom environment and actually go fly.

MR.: Right. And can you tell us more about -- I'm sorry, I guess I was on one question, but why it is hard to adapt the contract to build in hours for training?

MIKE GLEN: You know, I'm not an expert on the contracting so I can't really address that. I'm sorry. I would think it would be fairly easy but where the U.S. government is concerned --

EARL MCKINNEY: And you can you give us a sense if you're king for the day how many hours would be fruitful, how would you think about, you know, you'd want everybody that hasn't been initial attack qualified to have how many hours, you know maybe in this training course if it was up and running in probably the most efficient manner?

MIKE GLEN: Well, I'd have to take that one step at a time. If the person is initial attack rated already and they came to this course, I would say that anywhere between 5 to 10 hours flight training would be wonderful. An initial attack candidate, someone who is not initial attack rated, I would like to see that person not only get flight hours but time experience, and I'm talking about one year or maybe two years and actually see over a period of time, not flight hours, but build experience that way.

Now, in a two-year period the candidate can actually build up probably in a year like this year could actually build 200 to 300 hours and get that experience. In that training environment in NAFA again I would say maybe five hours or so would be adequate for them to get an initial taste of what's going on.

And what I've told you here as far as getting the time experience, they are required in the contract as a candidate to have so many drops before they're qualified. And you can get those drops in, in one day. That's a possibility that a tanker could actually operate on the base and be a short distance and get 25 drops in and be qualified. But you might have a poor year where that may not happen and it could take a whole year to get 25 drops in. It really depends.

But unfortunately if you do it in that short a period of time that person only has that experience in that one fire, in that one particular region and terrain. They need to have a myriad of experiences in different types of fires, large fires, small fires, initial attack with and without air attacks and lead planes and working with ground folks so it's kind of a complicated manner in getting that experience.

AL HYDE: I promised Mike that I would save his voice and make it very brief. Is there one more question from the panel?

JIM HALL: I have several questions.

MIKE GLEN: I'm doing fine.

JIM HALL: First of all, you suggest, which I think is a good suggestion, that we ought to try to have you put a mini course together for us. But tell may, in case I don't get to take it, what is it you think we should learn out of that that would help us in fulfilling our obligations on this panel.

MIKE GLEN: How many days do we have here?

JIM HALL: Well, and your voice is -- let me say that I am an attorney by training and therefore I don't mind reading. So if your voice -- as much information as you'd want to put together so the audience understands. This panel regretfully -- this panel has had a ninety-day life and we are instructed under our agreement to report by the middle of November. And we all recognize that there is -- in fact, all of us would like to do more than we can do, but this is not a full-time job for any of us. It's almost part-time public service for some of us.

So as much information as we can gather or that you think that we need to know, if we can certainly work something in, we would try to do so, but we do need the benefit of first of all do you think we need -- is the purpose of this panel worthwhile, and if so what are the things that we thought to be focusing on in your opinion, because you certainly have gotten experience -- you've been with a private contractor, you've been with both the Forest Service and the BLM and we would certainly like to get your input on the things that you think we ought to be focusing on and the changes that ought to be made in the future.

The question of being cost prohibitive I'd like you to eliminate, if you wouldn't mind, and tell me what you think should be done in terms of safely putting a human being into this mission, because I think that's what the government should be doing is being sure that the individuals have adequate training and adequate equipment to perform the mission.

So I think we can get a lot of benefit from you from what you have to say and I know that your voice is limited, so please provide us in writing, if you would, or later when your voice is well your comments.

MIKE GLEN: Like I say, you surely are a lawyer; you've asked many questions here and I can't remember which ones to answer.

There are actually some other people here that I think you should listen to that can give you some short, quick information. And, yes, I can provide you this information in writing. In fact, probably for the last nine years I've been instructing many classes and I have a lot of this information for you on a CD and I will provide that to you and I was going to provide it to you at the Sacramento town hall, but I think I'm also going to attend Albuquerque as well and try and present that material to you at that time in the CD form, have you look at it, and then maybe you can make a judgment as to whether or not you would like to actually attend a short one day class.

There is also a gentleman in here today that you've talked to yesterday, Terry Cohen. We've talked together many times and there's no doubt in my mind that with him and a few other people, air attacks, mainly ground firefighters, that we could provide you a great insight into what's going on in the air with fixed wings, rotor rings and what the people on the ground need.

I'd really want to make a point that I know what the panel has been formed for, but you've got to remember what are we here for as firefighters; we're here to protect the public, we're here to provide a service to the customer. Now who is that customer? That customer is the firefighter on the ground that needs our support. If you take that support away, you're not only going to put them in jeopardy and in danger but also the public and the land that we try to protect out there.

So I know you know that this panel is important, but it's very important to us that you come up with the correct solutions out there for us to work by.

I know my time is short here. It's imperative that I think you learn more and I can provide the information for you, I can be your guide. I sent you some e-mails, Mr. Hall, and you have also responded to me. I really hoped that I could get you out to a fire. Fortunately, the fire season is winding down and that opportunity is going to be very, very limited. There still is an opportunity out there for that to happen after your town meetings and I'll be in constant contact with you to provide you that information. I'll be your guide. I can get you anywhere you want to go. I can get you into any situation that you want to get into. I think it would really help you out a lot.

So there are some other people I think should listen to here as well.

JIM HALL: Okay. Well, thank you very much.

AL HYDE: One question from Bill.

BILL SCOTT: A quick question: Your opinion on the sustainability of the heavy air tinker fleet, the large air tankers as it exists now?

MIKE GLEN: I guess I missed --

BILL SCOTT: The sustainability of the current fleet.

MIKE GLEN: The sustainability with the present aircraft that we have? Well, actually, I'd like to answer that at one of the other town meetings and actually my thrust that I'd like to present to you is not on aircraft, fixed wing or rotor. I'm going to hit you more with the managerial part of how the operation goes. Right now we've got a wound on our arm here that's been caused by these accidents, and I know that you can put a quick Band-Aid on it and fix some things, but as a good doctor that diagnoses injuries, how did that injury happen, and that's where I think that you're going to solve most of your problems, and I think that most of our problems are not caused by the present

management but years ago and it's just a domino effect that's caused what's happened today. And that has to do with decisions and it has to do with money and there are lots of different things that I'm going to talk to you about.

Another thing maybe I'll just end up with is I've heard lots of talk, there's lot of rumors going around about the panel, that there's preconceived ideas of what you're going to come with. I don't believe that.

JIM HALL: Well, ask them to share them with us so we'll know. (Laughter.)

MIKE GLEN: Well, okay. I've heard things that you guys are going to totally wipe out the air tanker industry, that there's not going to be any heavy air tankers, that's going to be strictly all helicopters, the lead plane program is going to go away, there's no air attacks. I mean, there's just a myriad of things.

And if you're actually a sane person you know that that's not going to happen, but the analogy that I'd like to give you is if any of you are a mechanic you know that there are several different types of screwdrivers. You have a Phillips head and you have a straight head. And each one of those screwdrivers, straight and Phillips, have different types of head, 1, 2, 3 and 4. So now you've got a screw that you need to screw into a piece of wood and it's a straight screw. Now, do you use a number 2 Phillips head? No. You need to use a straight blade, and there's a possible that you need a number 1 or number 2; you don't know.

The thing is there are different tools for different jobs and if you only use the Phillips head for the straight screw it isn't going to work. You have fixed wing, you have rotors out there and you have to use all these tools to fight fire. And if you take one away and think that you're going to do it with just one other aircraft, that isn't going to work. You need to use a combination of everything.

So that goes on with the rumor of you're going to take maybe the fixed wing away and it won't work. And that's about all I can talk to you today. I'm just about done.

AL HYDE: He's done. A yes or no answer? Go ahead. Ask your question.

MR.: The tanker community is well known for being exquisitely adapted risk-takers. I have a great deal of respect for heavy air tanker pilots and their ability to weigh risks. I'm a pilot myself. I haven't made many decisions about whether you take airplanes or not, so this is not about being safe or unsafe; I think we're past that.

What I guess I'm trying to think of is something outside the box of the way the current system is set up in trying to assist heavy air tanker pilots in the risk assessment process. It seems like I see that group as being left out there to make the decisions on their own. There isn't a lot of -- I don't say oversight; you know, that's not what I'm looking for. I don't want to invent a helicopter manager position, because we understand the disadvantages of that.

Help me think through how we could help the decision-making out there so that if somebody decides not to go on a certain day that the dispatcher doesn't call up another heavy air tanker and ask if they'd be willing to go to the same fire.

MIKE GLEN: All right. Well, I'll give you a little bit of history. I was fortunate enough to start in 1980 and at that time I got to see the end of an era of some of the older tanker pilots go away. And there was at that time a devil may care attitude, barn-storming days, I guess you want to say maybe start to go away. You had some new operators coming into the business with new ideas, new aircraft.

And along with that, as the years went by, through the help of the government and NAFA, teaching classes, we did start bringing in a lot of risk management classes and along with the air attacks and the lead planes helping to make decisions out there on the fire you'd start to see a culture change in that risk management start to become normal, where before it really wasn't. People have started to make smarter decisions. Probably the biggest thing is they were starting to say no, I won't do that.

Even in the contract that the tankers operate by, and there's a section in there that says the tanker crew has the final say over the mission, not the lead plane pilot, not the air attack, not the U.S. government; the crew has the final say over the mission. To me that's one of the greatest things that's been written in that contract.

You have pilots out there today that constantly say no, I will not go into that area that's too turbulent, the fire behavior is too extreme, the retardant will not do the job that you need to do. There's a lot of discussion over the radios now that you use risk management. There is decision-making going on out there constantly.

Not to say that back in the '80s and maybe in the '60s that wasn't done. I don't think it was done that much. And the accident rates were higher at that time. The accident rate has gone down.

So I think people are making better decisions. It's been done through education, through classes. And although I'm maybe going to slam management here in a couple weeks, it has been management's idea to support these classes and to bring safety to the forefront of dropping and using retardant on fires.

For example, you mentioned the helicopter manager. As soon as the helicopter manager was brought into the play of using helicopters, the helicopter accident rate dramatically decreased. I wish I could show you a graph; it's just phenomenal. The same thing happened with the air tanker accident rates when the lead plane, the use of lead planes was brought in, and that was back in the '50s and the '60s.

So I hope that answers your question.

MR.: Thanks.

AL HYDE: We'll see you in Albuquerque.

MIKE GLEN: All right.

AL HYDE: Thanks.

MIKE GLEN: Thank you.

(Break.)

GLEN JOHNSTON: Good morning. My name is Glen Johnston (sp). I work for the U.S. Forest Service. My title is Helicopter Operations Specialist. I'm essentially a program manager for the helicopter program for the Great Basin of the Forest Service. And the lady sitting next to me is Jill McCurdy (ph). She's my assistant. Because of the size of the program that we have in the Great Basin she's actually the first HOS assistant position to be established in the Forest Service and actually functioning. I'm glad to have her. It makes life a lot more easy for me.

A little bit about myself, I'll talk about that and let Jill give a little bit of her background. But I've been -- this is my 32nd consecutive fire season with the Forest Service. I started in 1970 when I was 18. I've worked with helicopters since 1974. I did 20 straight years in the front seat of firefighting aircraft, initial attacking forest fires, mostly in the Great Basin. A lot of that was spent down by that Humboldt Tayabe (?) National Forest in Central Nevada and then I moved to Central Idaho in 1985 through '95 and went through some pretty good forest fire seasons there and then moved out of helicopter actual firefighting and into management more so in the regional office here.

Jill, why don't you talk a little bit about your background before we get into the rest of the presentation.

JILL MCCURDY: I have 17 years in working for the Forest Service and the BLM in fir, engine crews and heli-attack. I've worked in Arizona. I've been based out of Arizona, Idaho and Utah and worked for three different forests and then one BLM resource area and just recently transferred to the regional office as the assistant helicopter operations specialist for the region. As Glenn said, this is a new position due to the large scale of our rotary wing program we have.

GLEN JOHNSTON: Okay. What we're here to talk with you gentlemen about there today, first of all I was certain that you would have some questions about helicopter managers. And I think I will start out talking about -- well, we're going to talk about helicopter managers, what they do. I'd like to talk about in the time we have allotted about the exclusive use helicopter program and last about the CWN helicopter program or Call When Needed helicopters.

And I guess I'll start off, I'll refer you to the (IHOG ?), the big book we have here, page 2-5, if you would turn to that. We didn't put the tabs in for you folks, but chapter two is the personnel chapter of this book.

And I guess before I get into helicopter managers I'll talk about the IHOG in general. This book that we have you is yours to keep, take them with you. There is a lot of information in here. This book is so to speak the bible on helicopter operations for federal agencies, the Forest Service, the BLM, all of the major players that are using helicopters, firefighting. This is the policy that we work under.

JIM HALL: Is this all federal agencies?

GLEN JOHNSTON: Not all federal agencies. Most of the bureaus have subscribed to it. The Park Service in certain regions has subscribed to it and in other regions they don't. But for the Forest Service and the Bureau of Land Management I can speak for those two that they do use the IHOG as policy for helicopter operations, but not all.

And there is a wealth of information in here. I mean, it covers how we're going to do sling loads, how we'll haul people. It goes on and on. It goes through everything that we basically do. A lot of people like to say that the IHOG was written in blood because just about everything that was in here at one time resulted in a fatality of some sort or some kind of injury to people.

JIM HALL: Is this in the contracts?

GLEN JOHNSTON: Parts of the IHOG are incorporated into contracts.

JIM HALL: So this is basically for federal agencies or non-contractors?

GLEN JOHNSTON: This is the policy that we, the government, you know, the Forest Service when we're conducting helicopter operations follow.

Now, if we want a contractor to follow a specific item that's in here, then that would be written into the contract, in order to have some kind of teeth, the contractors follow the contracts. That's the only really authority that we have with them. And if we want something out of here to be followed, we would incorporate it into that.

MR.: And there's no global statement in the contract that the contractor will adhere to all IHOG policy.

GLEN JOHNSTON: There is I think some -- I'm not a contract person, but I think that there is some kind of a statement, all-encompassing statement that the contractor will adhere to government policy. I believe.

MR.: Will adhere to government policy is codeword for --

(Audio break, SLC 2, side A to side B.)

GLEN JOHNSTON: (In progress) -- someplace that I'm not familiar with, but would you ask me that question again?

MR.: I'm not sure I can.

GLEN JOHNSTON: Okay. (Laughter.)

MR.: I think I started off trying to figure out, if I'm a contractor and you say I'm supposed to follow government or federal policy, is that articulated? Is that 100 percent included in this guide? Is this guide more than policy for me?

GLEN JOHNSTON: No, I wouldn't say that. I think that the only teeth -- I'll step back -- the only teeth that we have with the helicopter contractor, so to speak, you know, as far as following is what is in the contract. And what I gave you here, the green book that I gave you is a copy of the national CWN contract for Call When Needed helicopters.

And as an example, in here we talk about pilot duty limitations, where we talk about the limitations for a fuel truck driver. Now, that stuff is in the IHOG here and because we want to impose other than or more restrictive limitations than what the Department of Transportation has, which are pretty gray for us; those don't work very well for us. We would spell it out in here, take it out of here and spell it out into here and that's an example of taking policy out of here and putting it into a contract.

JIM HALL: I guess, Glen, so I can at least from my perspective be specific and then I think some of at least my concerns, maybe all the panel's concerns, when we were briefed in Washington we were told about the high accident rate with helicopters and how this new policy had favorably impacted and turned that rate around and how basically you had one procedure for the use of helicopters and sort of a different procedure for the operation of air tankers. And safety, of course, is the most paramount with me and we do know, of course, that there have been a lot of advances in the whole helicopter industry in terms of technology that have had an impact on safety as well.

This whole issue came to the forefront because obviously in some of the government and public meetings the issue has been raised that we've been told how important the initial attack is, we have been told that there have been instances in which the helicopters were available for an initial attack, that the initial attack did not take place because there was not a helicopter manager present and as a result a fire that might have been in the opinion of the individuals who were commenting to us a fire that might have been handled at a very small level in some cases grew to take out subdivisions and other things.

So we're trying to understand safety, how it relates to the contract, how it relates the FAA regulations and as well as trying to understand how it is effectively used in terms of supporting what we understand is the Forest Service and BLM policy on initial attack.

GLEN JOHNSTON: Let me talk about helicopter managers for a minute as part of addressing that question. We do require a helicopter manager to be present with each one of our aircraft before we deploy it. And Mike mentioned here an accident rate that was back in the 1970s with the Forest Service that got to the point where the agency really had to make a decision on whether they even wanted to continue using helicopters, because we were killing so many people flying aircraft.

And in a national helicopter study that was implemented back in 1974, the helicopter manager position was really created and we started doing a lot of other safety related items at that time. That's when the position that I presently occupy was created and it's when we started doing load calculations on aircraft to determine how much they could effectively carry, also with the safety margin figured into it, and all of that stuff came about at that time.

So since then, our program has been utilizing helicopter managers, so to speak, married up either with CWN helicopters as they are called up for use or in our exclusive use helicopter program, which is a contract for an aircraft anywhere from three to five months where we have exclusive control of that helicopter. There is a helicopter manager and crew assigned to that.

Now, talking about what I just heard from you, sir, about a helicopter sitting there without a manager assigned to it, as the course of the fire season gets going we sometimes encounter shortages of helicopter managers. We have to import them from further and further away to marry up with aircraft as they are called up.

In the green book there is a folded sheet of paper here that I'd call your attention to, and this is a list of all of the Call When Needed helicopters, type 2s and type 1s, and when I talk about type 1s those are the large aircraft, type 2s are medium size ones. And that is actually explained on 2-4, if you're still open to that page of the IHOG there. That one box, exhibit 2-4 on that left hand column there talks about type 1 and 2 helicopters and those are the manager requirements that we require to go with those size of aircraft, depending on what category they're in.

Those are determined as type designations, are depicted on 6-2 and is based on gross weight, basically what they can carry. Above a certain gross weight it's a type 1 helicopter, and I don't know exactly what it is, 20,000 pounds or 15,000 pounds plus.

But anyhow, getting back to this sheet here, Call When Needed helicopters, this is a summary of all of the large aircraft that we have, and I think we have approximately 400 of them right now signed up to be called out in the event of fires. And as fires started this year, growing larger and larger over a bigger geographic area, we called up more and

more of these helicopters and we were not always able to right now provide a helicopter manager for each one of those aircraft. The manager very much fulfills a lot of roles. They're not only a time keeper for the helicopter, they get the pilot, they brief them on aerial hazards, there is a number of things that they do that are listed actually on page 2-6 as far as duties and responsibilities go.

JIM HALL: Are these full time?

GLEN JOHNSTON: Helicopter managers? Our exclusive use managers now are for the core program. They are year-round employees. On the other hand --

JIM HALL: What grade?

GLEN JOHNSTON: Pardon me?

JIM HALL: What federal grade?

GLEN JOHNSTON: GS-9.

JILL MCCURDY: And we have 18 of those in the region.

GLEN JOHNSTON: In our region.

JIM HALL: Eighteen in the --

JILL MCCURDY: Positions for 18 in the region. They're not all filled currently.

JIM HALL: And what is the problem with getting those positions filled?

GLEN JOHNSTON: The exclusive use managers, and we really need to really differentiate between the exclusive use program and the Call When Needed program. I don't want to mix apples and oranges here.

JIM HALL: Our concern and what I'm trying to do, and I understand you all, but when the federal government has an asset and the asset can only be used with a manager and if we have positions we can't fill, then we need to be looking at possibly other ways to address the safety concerns. I mean, as you know, in the certification program we use contract employees trained to perform government functions for limited purposes. And if we have a situation in which we have an asset that we're paying for that can't be used, it would seem to me that's a concern that I have and I think the panel has. But we, of course, would like to know more about the helicopter manager, too.

GLEN JOHNSTON: Well, the shortage of helicopter managers is not a new problem. With the National Fire Plan and some changes in the requirements, the training requirements, just a year ago some things were done that really will streamline the training process for helicopter managers and a lot of those went through the training, on

the job training this year and I think that from here on out that we are going to less and less and probably catch up with that here quite soon. There were some measures, like I said, that were taken and streamlined the process --

JIM HALL: Do you think OJT is adequate training for a helicopter manager?

GLEN JOHNSTON: That's only part of it.

JILL MCCURDY: No, that's only part of it. They go through extensive classroom training.

JIM HALL: Are their training requirements outlined in this book?

JILL MCCURDY: In the IHOG. It's in NR57.

GLEN JOHNSTON: It was just recently taken out of the IHOG and it resides in each one of our agency manuals now.

JILL MCCURDY: In the 310-1.

JIM HALL: Why was that done?

GLEN JOHNSTON: Well, that's an interesting question. At one time it was all standard for all agencies in here and not all agencies wanted to abide with the requirements that were outlined in the IHOG.

JIM HALL: Was that because of money?

GLEN JOHNSTON: Because of money. They thought it was too much to do.

JIM HALL: Yet we always say safety is the most important thing, right? Yeah, go ahead.

GLEN JOHNSTON: It was removed out of here and it now resides in each agency's policies.

JIM HALL: Could we possibly get the differences for training requirements between the various agencies? Could you provide that for the panel?

GLEN JOHNSTON: We could. We don't have that with us here, but we could pull that out and get that to you.

JIM HALL: Now, I'm speaking for myself. The rest of these gentlemen may not want more paper.

MR.: I've got plenty right here, Jim.

JIM HALL: But the training requirement is important and if it was in this manual and it's been taken out and it now rests in the various agencies I'd like to know the differences.

GLEN JOHNSTON: It's not standard anymore. It's not standard.

I will say that national --

MR.: Are there differences between regions too, Glen, then or not?

GLEN JOHNSTON: No.

MR.: It is standard across the board.

GLEN JOHNSTON: No. The BLM and the Forest Service really still have the same requirements for helicopter managers. It's with the states that it probably is where it differed.

And now the NMCG, the National Wildfire Coordinating Group, the base standard for a helicopter manager now resides there.

JIM HALL: How many states have adopted the IHOG?

GLEN JOHNSTON: I can't tell you that.

JILL MCCURDY: (Off mike.)

GLEN JOHNSTON: And with NWCM we do have a standard requirement for a Call When Needed helicopter manager and it's quite uncomplicated, so to speak. It does require a certain amount of classroom training, that they attend a refresher workshop every two years and that part of it is standardized.

JIM HALL: Do you have to have a college degree? Do you have to have --

GLEN JOHNSTON: No. You can have what I would call a minimal amount of experience working with helicopters. I mean, you have to go to basic helicopter training. And it isn't something, though, that happens in just a year. It probably takes three or four years of experience to work up to the point of --

JIM HALL: Do you hire some -- are people hired for that specific position?

GLEN JOHNSTON: First they're hired as firefighters and then they evolve into that is how it's generally worked in the past.

JIM HALL: But we haven't looked at actually hiring people as -- if we're going to contract for an asset actually being sure that we have people that can staff the assets, since that's a requirement before it flies.

GLEN JOHNSTON: There's really no prerequisite requirements for it.

But it does, you know, with all the things that they need to accomplish and the experience that they need to get, it takes a little while to become a helicopter manager.

MR.: Are there different requirements for the exclusive use helicopter managers?

GLEN JOHNSTON: Yes, there are. The exclusive use program like in this region there are 19 aircraft and each one of those is contracted from private industry. Each one of them has a structured crew with it, a GS-9 manager, a GS-8 assistant, one to two GS-6 lead crews and then everybody else under there are senior firefighters or firefighters.

Our crews, our exclusive use crews, almost all of ours are heli-rappel crews where if we can't land on a fire we will deploy people out of the aircraft on ropes. And those are permanent full time positions for the managers and those are recurring.

JIM HALL: Has there been any discussion of contracting for some of those positions as well? Since we contract for the aircraft, we have them perform the maintenance and provide the pilot, is there any -- what is the rationale of having the helicopter manager not provided for in the contract?

GLEN JOHNSTON: I think there has been discussion on it and what I've heard back on that is that is an inherently governmental job type of position. And because of the amount of experience and everything that needs to go into especially an exclusive use manager that that was really not feasible to obtain or that type of expertise was not available in the private sector.

JIM HALL: We contract for people that are ground firefighters?

GLEN JOHNSTON: For engines we do. For basic firefighting functions. But let me talk about an exclusive use manager. That person, and I did it a lot, that's riding front seat in an aircraft. A lot of the time you're the first person on the scene of the fire. You're coordinating complex merging air operations with air tankers, air attacks. You have smokejumpers all arriving there at the same time. Plus there is very much a need for those people are required to have extensive fire experience on the ground up to the point of being what's called an incident commander type 3 supervising a crew of firefighters and directing them on the ground to suppress the fire.

And all of that goes into that type of person not only in the helicopter area but like as Mike was mentioning in some of the other areas too where aerial resources are involved.

JIM HALL: But you can't give us any better understanding or could you as to why we can't fill -- I mean, we certainly have a lot of folks out of school, unemployed right now, and why we can't fill these jobs? I mean, and I understand having spent seven years at state government and seven years at the federal government and four years on the Hill, I understand how positions get frozen, but I guess what concerns all of us on the panel is the commonsense of a community being endangered by a fire when there's an asset the government pays for sitting there that can't be utilized because the government has rules and regulations and doesn't have the personnel, so that asset can be used. And I think that for the interest of the Forest Service and the BLM, that needs to be solved somehow after this fire season. Now, that's an independent opinion there.

JILL MCCURDY: With the National Fire Plan we've added quite a few positions on all our heli-attack crews across the region and have added heli-attack crews across the region. And the main idea of this and in region 4 we said we wanted all our heli-attack crews to go to a minimum of 10-person crew, what the intent of that 10-person crew being that they could split into two crews and manage two aircraft that way. And we have a lot of our crews that do that on a regular basis. When they go to large fire incidences the CWN aircraft come in and they have two to four managers on their crew and they can go out and manage these other aircraft. And that's quite a regular deal with our crews.

Not all the other regions are following suit on that and staffing their crews up to this 10 or more person level and there again it's a thing of funding and training. You've got the two to three years to train a person up to be a manager. You can't just send them to a battery of courses in the spring and say, okay, you're done with your courses; here's your helicopter, go, we'll see you next fall. They have to have some final line experience.

JIM HALL: I understand that, but should we be spending tax dollars to contract for equipment we can't use?

JILL MCCURDY: That's one thing we've worked with this summer and we've seen that, that aircraft arrive and the managers aren't there. What are you going to do? And that's where this year there's a provision in the IHOG that deals with managing two type 1 or type 2 aircraft as limited use. It's on page 2-5. It's in a gray box at the top of the page. And it's in that box with a little hand pointing to it, because it is a new thing in the IHOG.

And it says you may manage two aircraft with one manager as long as it's in a limited use category, which means it's just going to be flying, more or less what they're going to be using it for is water buckets.

But there are a few parameters that have to be met. An order for a CWN fire helicopter manager has to be placed for the second helicopter. Both helicopters are to be working out of the same base and physically located side by side. A helibase manager is assigned at that helibase. Aerial supervision is being provided over the incident. And the

appropriate agency aviation manager at the state, area or regional level must grant approval on a case-by-case basis.

And the reason for number five is that we have a good idea of the managers we have in the area. And when you have people that work for you, some are more capable of multitasking and doing things than others. And when Glen or I get a call from somebody out on a fire and they say we have this need, we've got two helicopters here, we've only got one manager and it's so and so, is this okay, and he and I, if it's a person from the Great Basin, can generally say yes or no right off the phone or pull up our list that we keep and look at it and say yes or no.

And you have to check and make sure they're meeting the other criteria there, and that's because the helicopter manager is quite a detailed job and that helicopter manager duties start on page 2-5 there in the middle of the page and it goes through what they're responsible for, what their jobs are and it continues on through 2-7 to the top of 2-8. It's a pretty encompassing job.

JIM HALL: You have how many exclusive use helicopters in your area?

GLEN JOHNSTON: Nineteen.

JILL MCCURDY: Nineteen in our region.

JIM HALL: And how many helicopter managers do you have?

JILL MCCURDY: We have helicopter managers in the region about 65.

GLEN JOHNSTON: Total, but --

JILL MCCURDY: Total.

GLEN JOHNSTON: When we say again those exclusive use crews of 19, each one of those crews probably has three or four managers assigned to it.

JILL MCCURDY: With the crew.

GLEN JOHNSTON: But those crews --

JIM HALL: How does an exclusive use helicopter show up at a scene or be somewhere without a manager?

JILL MCCURDY: Oh, exclusive use will never show up without a manager. It will usually show up with --

JIM HALL: So the ones we've heard are basically contract aircraft?

GLEN JOHNSTON: Well, Call When Needed.

JIM HALL: Call When Needed.

JILL MCCURDY: Call When Needed are the ones that show up without the managers.

GLEN JOHNSTON: And we're not really contracted. We don't have more equipment contracted than we can provide managers for, but it's a matter of getting the managers there. And the dispatch center --

JIM HALL: Well, why would the manager not go with the helicopter during the fire season?

GLEN JOHNSTON: Well, CWNs, they may be doing logging, aerial logging and you may get a fire and that helicopter may be called away from logging and dispatched to the fire. Now, at that time the dispatch office needs to order up a manager and get them both going to the same place at the same time. And we have a policy of not putting an aircraft on a fire until it has a manager with it, until the pilot has been briefed on safety concerns, hazard maps, the payment, all of that stuff has at least been established and there is an order of process for making all of this come together in an ordered manner instead of just throwing a bunch of aircraft at a fire, putting a bucket on it and say go for it. We don't do that.

JILL MCCURDY: And on page 1-C of your contract, about the middle of the page, it says, "Prior to putting a CWN helicopter into service, the manager has been directed to" and the first thing is "review the aircraft log book, in particular looking for the following: 100 hour inspections or periodic inspections, depending on what the contractor is doing, completed within the applicable timeframe limits, entries in the logbook indicating a change of major component and reason for the change, entries indicating damage to the aircraft. The manager must conduct a thorough walk-around inspection to ascertain that all items of equipment required are installed and operative. Some examples are high visibility paint on the main rotor blades and seats and they must request a power check to ascertain the engines are operating within prescribed limits, procedures are outlined in appropriate flight or maintenance manuals, in addition to contract clause C-15-10 will be used." And those are just a few of the things the managers have to look for when they meet up with a helicopter.

It takes approximately two hours from when a helicopter shows up and the manager goes out and shakes hands with the pilot, the mechanic and the fuel truck driver. You introduce each other and then you have your paperwork to fill out to make sure they haven't exceeded pilot flight and duty days over their last 14 days, because we have limits on that, and where they're at with that, if they had just come from another fire, what were they doing previously, was it logging or were they working on another government contract.

MR.: That's all very clear. But in the air carrier industry, where they carry around people by the thousands, nearly all of those kinds of activities are delegated to the carrier and then somebody from the FAA comes around and has a look once in a while to make sure they're doing it, and if they don't do it right they get some kind of penalty or they lose their operating certificate if they're bad enough.

What's different about firefighting that doesn't allow that delegation?

GLEN JOHNSTON: Well, some of our operators -- I'll come back to this sheet right here -- I mean, it's the helicopter industry. We want to take a look at -- we have some good operators out there and we have some operators that aren't so good.

JIM HALL: Well, shouldn't we sort those out in the contracting process? That's a little late once you've given somebody a contract to decide they're a bad egg.

GLEN JOHNSTON: We have some operators that we've tried to sort out and it's gone to congressmen and it's gotten quite ugly, so to speak, and some of those people that we would rather not contract with are still on this list.

Let me talk a little bit about that. We have some type 1 helicopters in here that cost $29,000 a day, some operators that we can't get rid of. I mean, we, the Forest Service have tried and they're still on this list and all they do is they come to a fire, they're available and we're paying them all this availability and when we ask them to go to work, oh, the helicopter is broken and/or it flies for a couple of hours, then it goes down because it's junk equipment.

And when we're dealing with folks like that, I mean, and they're out doing helicopter logging or whatever or some kind of a job where there is no regulation or no inspection on it, when we bring them back and we're going to haul people with them, for instance, we want to make sure that the maintenance has been done on that, that there haven't been any recent accidents and if there was, or major component changes, that that stuff is all squared away and our managers look at that. We don't just leave it up to I guess the general, I'll call them the general FAA regulations for that.

MR.: No one seems to have any quarrel with the change in accident rate from the time before you introduced helicopter managers until today when you have them. But the industry was saying to us, yeah, they may have had a part in it but the turbine engines have become much, much more reliable, we put two pilots on the airplane instead of one, we've got two-engine airplanes and that's the biggest part of the reason for the reduction.

Is there any reaction to that? Are they right or are they wrong?

GLEN JOHNSTON: Well, I think the turbine engine reliability thing, there's no doubt about that. But I guess getting back to the helicopter manager position, it's a safety issue, a big safety issue. When we're hauling people, they supervise the loading and the unloading.

JIM HALL: We're not saying it's not a safety issue; we're just saying that our experience has been with commercial carriers; in other categories that is contracted out. Now, what you're telling me is very disturbing. And I have a great deal of respect for all the members of Congress and the leadership of our government, but we should not have operators contracted for with tax dollars that aren't qualified to do the job. And if that's the case, that's a great concern.

I don't know with the amount of money that's being spent here, and I understand that's a large amount of dollars, should we be looking at more exclusive use helicopters rather than so many Call When Needed? I look at the dollars that we spend in the initial budget and then I look the last three or four years what's spent in supplement appropriations. The question is as a taxpayer that's dollars out of my pocket. Whether it's in the Forest Service or BLM budget initially or whatever the Department of the Interior structure is, if I'm having to pay in all these dollars every year but in supplement appropriations maybe there's a wiser way to use some of those dollars.

I just think it puts the Forest Service and the BLM and anyone out firefighting in a very difficult situation in these local communities if there is a fire where homes and lives are being endangered and they see assets parked there that can't be used. How are we going to -- and we see a system in another side of the federal government that works for commercial aviation. We have the same system in the Department of Defense with charter aircraft where many of these functions are contracted, but you do have to have a good contracting process so you get a good contractor and you have to police it.

GLEN JOHNSTON: The situation that you're talking about, sir, where we have a helicopter sitting there and no manager to manage it, that's the Call When Needed side of things. In my opinion, to answer one of the questions you just asked, I think we should have more exclusive use helicopters. But one of the things from my perspective that is a hindrance to that is getting up front funding for that. We tend to more so wait until after the problem has started to happen and it's too late to have exclusive use helicopters and managers in place at that time, then we go the CWN route and it's kind of I won't call it a free for all but as people are ordering helicopters here and ordering helicopters there at dispatch centers and we're playing catch-up to crew these things and put them out there in a lot of cases with crews that are less experienced, less effective and these helicopters traditionally cost a lot more money than exclusive use aircraft.

JIM HALL: Is there a difference between how you pre-qualify someone to have a government contract for exclusive use versus Call When Needed?

GLEN JOHNSTON: I think when we look at the evaluation process, we use something called the best value process when we're evaluating exclusive use helicopters and it really isn't that much different than the evaluation that's done here. The two factors that we looked at are cost and the performance capability of the helicopter, what kind of a value it is to us, how much it cost and how much it will lift it to certain elevation and temperature.

JIM HALL: Well, are you satisfied that you built into that contract safety?

GLEN JOHNSTON: Yes.

JIM HALL: Since we're spending so much money on the safety oversight, what input do you have to the contracting process in Boise in terms of safety in the contract provisions?

GLEN JOHNSTON: Oh, we work closely with the contracting process in Boise.

JIM HALL: Who is the officer there.

GLEN JOHNSTON: Frank Gomez and Rick Willis are the contracting officers up there. Rick is the national contracting officer. And we do work with those folks as far as establishing specifications for the aircraft that we're going to be using at the elevations and temperatures that we're going to be using them at. There's a lot of aircraft that because of the environment that we fight fire in with helicopters --

JIM HALL: What about the equipment itself? Are there satisfactory requirements for the equipment? You seem to say some of the equipment is not adequate. Why couldn't we deal with that in the contract?

GLEN JOHNSTON: Well, we have maintenance people to go out and inspect them and they do have to meet a certain standard.

JIM HALL: Is that standard adequate?

GLEN JOHNSTON: I believe it is, if it's followed. And the lady earlier talked about, someone asked about the life of an aircraft and it really is dependent upon how well the maintenance and everything is done on it. We have a lot of like aircraft in our program. Some of them went 600 hours this year with no unavailability. I mean, they performed flawlessly all the way through. And then there are other operators that don't take as good of care of their aircraft, they may not have the resources to support it in the field and/or don't care in some instances if it sits on the ground and it doesn't get fixed, and it doesn't provide that service to us.

JIM HALL: Do you have a process to remove those people from the contract?

GLEN JOHNSTON: We do have a form that was just initiated, an evaluation process that the helicopter manager fills out at the end of one of these assignments and there are a number of specific questions in there on how that contractor performed on that particular call-up.

JIM HALL: Are there contract provisions that you're aware of to remove someone from a contract or to provide a severe penalty for them?

GLEN JOHNSTON: Yes, there are.

JIM HALL: Have they ever been utilized in this fire season?

GLEN JOHNSTON: I can't speak for the nation, but in my region, my area of authority, no, not this year on any aircraft that I'm aware of.

JIM HALL: What about the previous fire season?

GLEN JOHNSTON: We have defaulted contracts. If they are, you know, contracted for a certain period of time, and I think the contract says if they're unavailable for 10 percent or more of that, we can initiate a default clause. And we can terminate their services and they would be forced to pay for a replacement aircraft for the remainder of the contract. There are provisions in the contract for that.

MR.: Are there any positive incentives to go the other way, that you get a bonus if you get a certain availability or is it just you're required to provide 100 percent availability?

GLEN JOHNSTON: They're required to provide a service and I think our operators are quite happy with what they're getting paid right now. I think that they're definitely making a profit.

But, no, there are no incentives -- no, to answer that question, no, not the other way that I'm aware of, except for that they will be very competitive for future contracts.

MR.: Glen, can I go in a slightly different direction? One of the suggestions we heard at another discussion was perhaps much as we card pilots for initial attack, would it be possible to card certain companies or helicopter pilots to operate without a helicopter manager for initial attack or for the first two days or some kind of process by which we get the equipment in the air when we need it and then if that person violates or after the fact we find out that they weren't operating safely, well then they would lose that card and they would lose that financial opportunity next year?

GLEN JOHNSTON: That's an interesting concept.

MR.: I'd like to just keep going, because I notice Al is standing up. Is there data collected on the availability -- when the aircraft becomes available, when the manager arrives and when that aircraft is first employed. Do we as a Forest Service collect that data?

GLEN JOHNSTON: It's probably recorded at dispatch centers.

JILL MCCURDY: The dispatch office would have, should have some record of it. It won't be clear.

MR.: Okay. But it doesn't sound like it's rolled up or amalgamated at the end of the season or it doesn't look like we analyze companies.

GLEN JOHNSTON: No, it's not something like that. That would not be readily available.

MR.: Is there any feedback -- last question -- is there any feedback on how the managers are evaluated? Do the companies get a chance to give feedback to the government on this particular manager was particularly helpful in this area or didn't seem to help much in this or anything like that?

GLEN JOHNSTON: Not really. No, it's the other way around. I mean, we evaluate them.

MR.: Right. But at the end of the season I just wondered if there wasn't some opportunity for a discussion after the fact that --

GLEN JOHNSTON: Well, there is. There is. At the helicopter HAI convention, the Helicopter Association International we have a meeting there. It's an open forum with the helicopter industry. And it is a time when the government contracting officers and industry come together in a formal meeting to talk with each other about what works and what doesn't work and if there are problems like that I guess that is an opportunity for industry to speak up and communicate with us about what's working and what's not working with them.

MR.: Thanks. That's all I have.

AL HYDE: What I want to do is we're going to stop here for lunch. When I talked to Frank, talked to the group about doing this, a lot of the questions that we've been focusing on go far beyond the scope of what they're responsible for and what this region does. And while it's important for us to get into it, so I'm going to give them a chance to come back at 1:30. Are you still going to be around or do you have to get out of here?

GLEN JOHNSTON: Oh, yes.

AL HYDE: And bring one or two others up, if you want, and we'll do 15 more minutes on this issue before we then get onto all the other people that are here or whatever. I don't want to close it off in here but I also feel like we're crossing both regional and national issues on this and into contracting things and expanded just a little bit.

Anyway, we'll break here for lunch and come back at 1:30 sharp.

(End of segment.)

(Begin Tape #3, SLC)

AL HYDE: What we're going to do, we're going to do a disciplined 15, 20 minutes to finish up on helicopters. Then I'm going to put some chairs up here and then all of you who want to engage in a real informal town meeting discussion with the panel will do so and we'll go from there. Okay?

JIM HALL: Come up here and tell us what you really think.

Why don't you start it off?

MR.: I'd love to.

For the benefit of the panel, I might make an opening continuing remark I suppose to set the stage for what I'd like to ask. But for the benefit of the panel I might state that states and local government have the protection responsibility for over two-thirds of the land in the nation and for the bulk of the population in the nation, and as a result have a tremendous interest in what we're talking about here because we use a lot of the same resources and so forth, and I think all the issues that we talk about -- safety, effectiveness, sustainability and all of those things -- apply to us just as well as to anyone else.

And so I would like to begin by following up on what I was just talking to you about, that you're in the process of moving to Boise in a month and a half to assume the role as the National Helicopter Operations specialist. And you'll have responsibility for all the helicopters used by -- is that just the Forest Service or will that be --

MR.: Just the Forest Service.

JIM HALL: Okay. There at the fire Center, and I served on the NWCG for several years and I'm aware of the efforts that are made to try to standardize things between all the federal agencies and now the National Association of State Foresters are deemed to be an equal partner at the fire center and across the nation as we do all these things together.

I think you'll probably have a real challenge in your new job in trying to standardize at the fire center, although there are good people there that are committed to that.

In that regard, I've heard a lot over the last few weeks as we've been into this and certainly this week where the states are doing one thing, the federal agencies are doing -- in fact, the federal agencies are each doing different things to a certain degree and I had some interesting discussion out in the hall just now to that regard, but that the states are

doing some other things. We hear things like back to the helicopter managers again, the one relationship sort of thing, yet states are doing anywhere from 2 to 10 to 14 and so forth.

I hear statements that we're using the National Guard and flying them over subdivisions and houses and doing all those sorts of things and it would lead me to believe that I should write in this report that if all of the federal things are done because of safety then the states are irresponsible in the way that we're administering our helicopter programs and some others.

And so would you help me somehow write in my report something that takes the word irresponsible out? If it's good for the feds because of safety, why shouldn't the states be doing these same things? I'm really looking for help, not to put you on the spot, but really looking for some help here.

MR.: Well I think, Jim, and pretty much in the last revision of NWCG and the helicopter manager and the helicopter management position, most everything in there is the same. Where there is a difference and where I think that it could be improved on the state side is for their managers we require that our helicopter managers attend a refresher course, so to speak. It's a helicopter managers' workshop biannually, every two years, and contracting training, contract administration training. Those are the two, if you look at the current edition of the NWCG, what under the helicopter boss position on the state side is something that's not required for state managers. That's the only difference.

If those two things were required and the states would buy off on that, we would have everybody across the board -- states, federal agencies -- all with the same qualifications. There wouldn't be any, well, we can't use you because you don't have this.

MR.: And if I could tag onto Glen, I did deal with this when I was back in DC a little. And what the states have really told us, and it all comes back down to what we've been discussing for the past two days is funding. They have travel restrictions on sending their people out of state sometimes for training and then it is the cost of that additional training. Or you have a volunteer captain in Springfield, Illinois who has helicopter skills, they don't have the funding to be able to meet these qualifications, and a lot of times actually those folks will pay for these things themselves to get these qualifications.

JIM HALL: So, Ken, in your opinion, then a state operation, one helicopter manager running a state operation from a safety standpoint could do 2, 3,7, 10 helicopter from a safety standpoint, especially since they don't have to worry about all this paperwork and checking qualifications and paint and all that sort of stuff?

KEN JOHNSON: It certainly is a different standard. The lowest level that we'll take that to, and I say we the federal agencies, is only under certain conditions, and Jill wrote 2-for-1. And from a safety aspect and mobility aspect I don't see us going there.

JILL MCCURDY: Where if you're talking one manager for a National Guard fleet of helicopters or whatever group they come in, but if you're saying you have 20 helicopters, that would be a big group of pilots to try to keep track of and make sure everybody's there at the briefings and making sure everybody understands all the briefings and having the personal contact that our managers on a one-to-one or a one-to-two basis have with the pilots where they could sit down with them on a regular basis when that person comes in for their 2.5 hour mandatory break, the manager can sit down with them and say how is everything going out there as far as communications, are the other pilots talking to you, is the air tactical group supervisor talking to you, have you had any problems out there, is everything going well.

And that's the manager's job is to interface with that pilot and make sure things are going well out on the fire as well as are you getting the support you need here, are we doing everything right for you, are we hooking your bucket up right, are we closing the doors right on your aircraft, things like that. Where if you had to keep track of 20 pilots, that would be pretty difficult to do in a realistic basis.

MR.: I only think that that scenario maybe works only in certain situations, too. Right now with one manager for one aircraft, each helicopter is an individual resource and it can go function by itself of they can come together and function on large heli-bases. Whereas the manager may serve in another function too as far as running that overall operation. One manager per aircraft certainly gives you a lot of flexibility with that firefighting tool to move around and be managed and be mobile.

GLEN JOHNSTON: And, Jim, if I may add, Jill touched on it but a lot of the things that we do, including the briefings, are part of the OSHA management of the program, which are regulatory, as you know.

MR.: You mean OSHA requires that kind of stuff? You mean they don't let you run your program?

GLEN JOHNSTON: No, no, in any program if we're out going to cut a tree down or whenever we do a job hazard analysis, we do a briefing, everybody signs the briefing. OSHA's position is if you do not have a signed piece of paper that a briefing took place that briefing never took place. It doesn't matter how many witnesses you had. And that is one of the requirements that these managers have with these pilots after the briefing.

JILL MCCURDY: And the managers have to keep a daily log of what went on during the day.

GLEN JOHNSTON: So the managers perform a regulatory role as well.

MR.: And when you bring in National Guard pilots the same thing, OSHA rules there?

GLEN JOHNSTON: Sure.

MR.: It's kind of makes you wonder how we fight wars, doesn't it?

MR.: Can you walk us through, we've heard estimates of several hours after the helicopter manager gets on site going through the paperwork for the helicopter and the pilots and making sure everything is up-to-date. How long does that process take when the manager initially meets the equipment, before the equipment is ready to fly?

MR.: I would say an hour to two hours at the most. They do an inspection of the aircraft, a quick inspection to make sure that it meets the contract requirements for a lot of the safety items -- mirrors, painted rotors, high-visibility rotor blades. They do an inspection of the aircraft and note any damages that are done to it -- broken Plexiglas, torn seats or whatever, because firefighting is a pretty rough business out there. We document all of that so at the end of that we're not having claims coming back to us that, well, this happened on the third day or whatever.

And they look at the logbooks and they check the aircraft card, they check the pilot's cards. And once all of that stuff is done, they're basically ready to go to work. They get a briefing on the fire once they get there, local hazards in the air and that type of stuff, but it really doesn't take that long.

MR.: And the failure rate of passing those?

MR.: It's discrepancies. I would say it's not very common.

MR.: You're talking one percent, 10 percent, 30 percent?

MR.: I'd say 5 percent, if I was going to guess a number, 5 percent. Because they are pre-inspected by maintenance inspectors and they are required to have a copy of the contract with them and they know what is expected of them. When they get there, they want to go to work too and we just make sure that everything is order, get together and go.

MR.: Thank you.

GLEN JOHNSTON: Earl, could I build a little bit on that question and kind of clear up something, Jim, you were talking about?

We got some numbers over lunch for you and there are 694 interagency carded helicopter managers out there, just under 700 folks in the nation. There are 261 type 1, type 2 Call When Needed contracts on this list that Jill presented you.

I think what people talk about the aircraft waiting for a manager, you're looking at a situation where, say, a fire starts in Medford, Oregon and the helicopter company is sitting there with their helicopter and a lot of times they'll preposition these on their own nickel, so they're sitting there when the fire starts. But that call that we need a manager

may come out of Boise, Idaho. You've got travel time and logistics to get that person there. You're probably talking six to eight hours before a fixed wing will bring them in. And I think that's when you may have been hearing in a lot of the cases that we're talking about the marrying up times.

JIM HALL: Well, what we heard, and Jim expressed some of his philosophy so let me express two of mine. Number one is I always hate to see the government require other people to do things the government doesn't do themselves, and I also hate to see where there are different levels of standards for safety.

One of the things that I was pleased with while I served on the NTSB is we were able to come up with one level of safety whether you go out here and get on a commercial aircraft or whether you get on one of the larger jets. We used to have two levels of safety. I remember we had a lot of accidents and people said, you know, I'm buying my ticket, it seems to me I ought to be treated equally.

What we heard and since there seems to be an undercurrent of feeling about private contractors and that concerns me as a citizen, because if you are going to contract, that's a two-way relationship. The government is saying we need this service provided and in order to do that effectively you've got to have communication, and what we have heard consistently is that there isn't that level of communication, at least from the folks outside the government.

But what we heard from the state of Oregon was that there were too many people required and it was too expensive to provide the same safety standard for the helicopter operation in Oregon as it was with the federal government.

And I think Jim's point is whoever we are putting out there over the fire, the taxpayer, the tax dollar doesn't know what's exclusive use and what's on-call, the people don't look out there and say, oh, that's a state of Oregon helicopter, oh, that's a Forest Service helicopter, oh, that's a BLM helicopter.

And I would like to see us move, and I don't know whether this will be part of what we're looking at, this is an individual expression, so there is one level of safety. And I think that should begin with the federal government, but I think it's very difficult for the federal government to tell the state Oregon or the state of Tennessee or stubborn people from the state of Texas particularly that they ought to something when you look and federal agencies are doing different things in the operation of essentially the same equipment for the same mission.

Now, I don't know whether -- and I've worked inside government and I understand and I admire everybody that's in public service. That's to me the heart and soul of folks. But those are the issues that I still haven't gotten resolved in my mind. I'm going to have to read through this IHOG, I'm going to have to read through some of your accident reports to understand whether you really need as many people as you have and whether there isn't a smarter way as well as just as safe a way to accomplish being sure

that resources are there for the initial attack when they're needed. And what happened in Oregon was, and you guys help me, if you heard of this, there was a fire that was going into the state or state into federal and their resources then could not be applied because they didn't meet the IHOG rules. And we'd like to see one standard for the federal government and then that standard I'm sure, if it's a safe standard, would be one hopefully that would be adopted by the states as well.

GLEN JOHNSTON: I guess just real quick here. You made a good statement and I appreciate it and I also appreciate your work with the NTSB. I was aware of the level 1 and 2 and your work there, by the way, and I applaud that.

And on the state forester side I can guarantee you the Forest Service and the BLM does listen to them even if they are from Texas.

On the rest of that I honestly think that's probably a unique situation that you were told about. It is by no means the rule out there. I will guarantee you that in my position and as a federal employee.

I think the other thing that I really want to make clear in response is that our Call When Needed program are like part-time employees so that's not treating an employee any differently, but they're not there all day. They're logging and they're doing other things. They are a very unique resource and we can't afford to put personnel with them continuously and wait for them to come off of their job because they're part-time with us and work for us. And this is why we get into the situations where we have to wait.

On the two levels of the IHOG, on the qualifications of the managers with the states, we do have a system that works with the states and the state foresters like Jim that develop those standards and are agreed-upon between the federal agencies and them. This is not unique. There are other standards that are in different levels. We tried very hard to make those as level as possible. Obviously we do that with the BLM and the Forest Service. We have different platforms. We have the aerial supervision module, we have those pilots in the room and we have lead plane pilots. Those are two separate programs that have different standards that are doing basically the same function in a lot of ways.

We're still evolving as an agency. We're into a whole new regime of fire. We're seeing landscape fires we've never had to deal with; 6,7 million acres in a year is phenomenal. Fire behavior is phenomenal. We're coping. We're evolving. I can guarantee you that with that situation you were told it is not the norm.

JIM HALL: Well, what we'll do is we've got that fellow up in Washington and the fellow in Oregon and I'll get you the names so you can talk to them --

GLEN JOHNSTON: You can pass that along to Tony.

JIM HALL: -- and see what the situation was.

AL HYDE: Earl?

JIM HALL: And then Bill I think has some.

EARL MCKINNEY: Maybe this could be talked about in the open session too. I'm sort of interested in data analysis and how data is collected so that we can improve and evolve as time goes on. Can you talk, Bob or Glen or anybody about how at the end of the season data is collected on the fires that got away or the fires that you never got a chance before they got away? How do we know where the assets were when the fire started and we never got to it because we didn't have assets available? Can you tell me what's collected at the end of the year or what information we're gathering as the years go by so that we don't have conditions like we heard about in Oregon where we had to wait for awhile?

MR.: Well, as far as fires that got away, Jill had an interesting analogy at lunchtime and I'll let her talk about that, but as far as where the data is or where those records are at, those are on the forest or with the individual dispatch centers. Those are the people that run that initial attack situation. And let's say we have ten fires start on a national forest and there's a plan in place for that piece of territory on how we're going to dispatch resources. And there are a lot of different things that they look at. They may go out with an airplane and look at those ten fires. And let's say we only have five helicopters and maybe two loads of smokejumpers. A local expert, a fire management officer maybe who goes out there on air attack, they go out and they assess that situation, they look at which one presents the greatest potential to be an escape fire, to take off or threatening structures, there's a lot of different things to look at, they'll make a decision on which resources go where. And a couple of those fires may be out there with no action on them. And certainly they have the potential at any time, one of them has the potential to get up and romp, take off and --

EARL MCKINNEY: How are those transactions recorded for future analysis?

MR.: Dispatch logs.

EARL MCKINNEY: Dispatch logs. Where were we in Idaho? Lucky peak?

MR.: Lucky Peak. The controlling dispatch office for that is right they're across the street from the national fire center there in Boise National Forest.

EARL MCKINNEY: So, at the end of the season that they would have 417 lightning strikes, 213 human caused, here are the different places they were, here's what happened to them, here's what assets were devoted to them?

JILL MCCURDY: Yeah, they should have an accurate report on the fire from the time it was first reported, whether it was a lookout that reported it or somebody in their own little Cessna flying by.

EARL MCKINNEY: I'll just keep going, because I'm short of time. So all that data is collected and how is that pulled back into how we fight fires next year? We look at that the say, you know, if we had two more heli-attacks out 200 miles north we would have caught half those?

JIM HALL: Because, you know, when you're on a blue ribbon panel and you're on the subject you've never really dealt with before, and you're asked within the reasonable period of time we've been asked to report, that type of information would have been what I thought would have been part of some of the first briefings we received.

GLEN JOHNSTON: I understand. The national fire center does rollup type numbers on that and that's through the coordinator up there and I believe if you go back through Rose she'll be able to supply you with those reports.

And some of that, just real quick, the national fire review, the 2000 fire policy, Al was part of on that and worked with us, we pointed out in that report that the Bureau of Land Management, the Park Service, the Forest Service, Bureau of Mines, everybody is rolling up numbers and working on different data systems. The states are in different ways of doing that.

We recommended in that report that there be a central type reporting system. In the '03 budget language under the interior approp bill right now it recognizes that report and is calling for us to do that. The money is not there but it's calling for us to do that.

JIM HALL: Would it make more sense if we had one agency at the federal level responsible?

GLEN JOHNSTON: Oh, please don't ask me that.

AL HYDE: That's a perfect segue to broaden this conversation.

GLEN JOHNSTON: Let me go back to the national --

MR.: Because we were at a point where I thought I had the perfect segue into the whole notion of looking at all of the resources. We've got a lot of air attack people here and other folks who have been sitting here all day waiting to have a chance to come up and talk. Would you please come up here? And I am tired of talking about IHOG.

GLEN JOHNSTON: Let me just quickly say there are 13 agencies that perform wildland firefighting, 13 different agencies.

MR.: At the federal level only.

GLEN JOHNSTON: At the federal level, and are responsible for wildland fire.

EARL MCKINNEY: And while you're still up here, can I go back to Michael. I'm curious at the end of the season how does policy change between the years based on what we learned last year? Is there a group that meets and says, you know, we need six more air tankers, three more --

GLEN JOHNSTON: We have a computer program and off-line I'll get all information.

JIM HALL: What are the 13? That's the first I've heard of that number.

GLEN JOHNSTON: FEMA, DOD, USDI, the Forest Service, Fish and Wildlife -- you need a copy of the 2000 fire policy.

JIM HALL: The 2000 fire policy.

GLEN JOHNSTON: And that actually is an outline to do exactly what you just asked, and Al Hyde was the facilitator on that.

MR.: And before I leave, I left the gentleman with two papers, one white paper and another paper on the expanded use of helicopter modules, and I'd like you to take a look at those. Those definitely apply to what we've been talking about the last hour. Those were written for region 4 but probably have national applicability.

EARL MCKINNEY: Is there a date on --

MR.: And thank you very much for your time. Those were both done this -- about a month ago.

EARL MCKINNEY: Okay. Thanks.

JIM HALL: Al, have we seen the 2000 fire policy? Is that part of all the material that --

AL HYDE: Yes.

JIM HALL: And where is it? Do you know?

AL HYDE: Well, not only is it there, but I also have a new summary on it for you as well.

JIM HALL: Good, okay.

AL HYDE: You know the best way to do this is to start over in the corner and have each of you introduce yourselves and say a quick word or two about what you're most interested in, in being here today and then we'll go around and then throw it open from there.

MR.: My name is (off mike.) I'm with the BLM National Aviation Office (?) at the (off mike.) The idea was to come visit and see what the discussion was within the group and the direction it was headed. (Off mike.)

JIM HALL: What direction are we headed?

MR.: That's what I came here to find out.

MR.: So did we.

JIM HALL: Well, if you find out, let us know.

MIKE MELTON: Mike Melton (ph). I'm representing the state of Utah fire management officer in central Utah and also staff the BLM air attack platform in Richfield.

The discussion has been really interesting for me, because I spent 15 years with the state of Oregon and have integrated with the federal system quite a bit. And a lot of that discussion that you are having, a lot of it really just comes down to economics. When you come down to being in partnerships with counties with limited budgets that I mean they're counting every penny and somewhat the wholesale approach that sometimes takes place with the federal firefighting operation it's difficult for a small state or counties, if it's on private land, to have the infrastructure and staffing to bring the IHOG, for instance, to bring those state operations to that level. I'm not saying that it's a bad thing and I'm a proponent of the IHOG. It has an awful lot of really good safety items in it that are written in blood.

Another concern is, and I think I expressed the cost issues, but also the aging fixed wing aircraft that are out there and just the general concerns.

EARL MCKINNEY: Can I interrupt, Mike, and just ask, you've been in Oregon and I was just curious, I heard different tax levies based on different states for homes. Is it possible, is that a different source of revenue for state firefighters to assess --

MIKE MELTON: You know, it could be here in Utah. I've found it to be a real big land owners rights type of state. Where you have states like Oregon that can do their funding because they're resource based and funded, there's a huge difference there with the resource base to fund a forestry program in the state of Utah versus Washington and Oregon.

As far as levies and such, I think what you're talking about is a surcharge that Oregon uses. I think that a lot of the states need to look at where they're going with their funding base and how they get their budgets, but it's just one catch-call method isn't going to do it for individual states.

MR.: And how would you assess Oregon's safety record for helicopter operations?

MIKE MELTON: Well, there are a couple of different things. The eight hours of flight time is standard across the board, where external loads on helicopters, Oregon is fixed to six hours on the hook. That was part of an analysis that that last two hours of operational period with external loads was the upper area of the accident rate, which was completely different than the federal government.

The oversight of the helicopters, it depends on the mission that they're doing. Myself, I feel that one person can account for the timekeeping and inspections on three aircraft, if they're doing nothing but safe bucket work, if that's all they're doing. Where the complexity comes in is when you start moving people, when you start moving stuff. Those people, that oversight is very, very important from a safety aspect. It's mission driven. The two for one that the federal government has made through the approval process at the regional level is a good step. It's a good step.

The other thing, I think the figure was brought up of 670 helicopter managers nationwide, was that the figure, something along those lines?

MR.: Six hundred ninety.

MIKE MELTON: Okay. Whatever the case may be, you know, I'm counted in that number but myself I'm also certified and carded to do a lot of other different things. Other functions within the firefighting organization draws from that pool to do other things. And so the 200 CWN contracts, and then we have all these managers out there; don't let that deceive you, because there are people that are carded as helicopter managers that are air attack supervisors, division supervisors, these different functions out on the fire. So it's a finite pool.

With the National Fire Plan and the increased funding and positions I think that's going to help, but you don't go from being a firefighter to managing an aircraft overnight. It takes time. It takes time.

MR.: Pardon me for beating on this point just a little bit longer, but --

AL HYDE: Not much longer, because other people want to talk.

MR.: I understand. But I cannot for the life of me understand, having worked in corporate aviation, in flight test, in military, where having a crew chief is a normal way of doing business, per aircraft often, and his responsibility is to make sure it's airworthy and it's ready for the mission no matter what. And then good training of the crew, the pilots, if you have another guy in the airplane, in the helicopter's case, they're trained to a certain standard and they are responsible for the ship and for the safe operation going out there. And if they're trained properly, there's no reason why they can't go out and do the job and bring everything back all the time.

I fail to understand what's different about firefighting and moving the people to a fire site, et cetera, that requires this incredible level of oversight on a one for one basis, two for one on certain missions. Can you clarify that for me somehow?

MIKE MELTON: Well, when you look at having multiple aircraft in a closed environment and in close proximity, also when you look at the conditions that we work under, high temperatures, high elevations and altitudes, unstable weather conditions, those are all things as aviators you know are the toughest parts of the environment when you're working in those environments. That increases the risk. By mitigating the risk by oversight I think that we're being more accountable down the road.

MS.: Any other helicopter people want to answer that?

MS.: I think one of the major things is that a lot of our responsibility as a helicopter manager is to be a firefighter and to manage the people that are working under us. In a lot of cases it takes up to five years to get to the point where you can even become eligible to go to the training to become a manager. So I think that's part of it is when we go to a fire I'm not only responsible for that aircraft, I'm also responsible for the nine individuals under me to make sure that they're operating safely and are actually able to do their job effectively. I'm responsible for them and I'm responsible for the aircraft.

MR.: And that's typically an exclusive use.

MS.: Right.

MR.: Now, you don't send that helicopter manager out with every CWN, do you, because those people often aren't qualified to that level, those helicopter managers, right?

MS.: The Call When Needed managers, their main responsibility is the helicopter and (off mike.)

MR.: They're more of a contract situation.

MS.: Right. And I think that some of the changes that Glen and Jill were talking about is that now they've kind of modified the requirements to become a Call When Needed manager and you don't need the line calls to take part in that position. It's more of a contract administration issue.

MR.: Okay, thank you.

HARRY HINSON: Harry Hinson (?), with Gray Western Aviation (?). We're an air attack platform contractor up in northern Utah. (Inaudible) from Tucson right now and I got an e-mail to show up and since I usually do what I'm told I showed up. (Laughter.)

MR.: That's the one guy that knows for sure why he's here. (Laughter.)

NICK STROHMEYER: My name is Nick Strohmeyer (?). I'm the assistant foreman on a local heli-attack crew but I'm also a helicopter manager. I've worked in several different western states with both the BLM and the Forest Service. And I came today just to learn and to listen a little bit.

One thing I guess I would add is that although I've worked for the Forest Service and/or the BLM for the last 14 years straight, I'm still laid off for three to four months of the year. So a lot of the information, decisions, the policies that happen during the wintertime we have to catch back up in March and maybe that answers a little bit of the question you had, Bill, with these people should be able to handle so many helicopters or have the responsibility to (off mike), which I think the Forest Service supports us in doing. I'm one of the people that calls Jill and Glen from the field. But a pet peeve of mine is just being laid off for a certain amount of time every winter and kind of missing out on the opportunities that are there.

JIM HALL: Do you think you have adequate training for your job?

NICK STROHMEYER: I do.

JIM HALL: And are you on a Call When Needed helicopter or exclusive?

NICK STROHMEYER: I'm on exclusive use, but I do at times handle Call When Needed helicopters also.

JIM HALL: And on the Call When Needed are you usually there before the helicopter or after the helicopter?

NICK STROHMEYER: It depends. Theoretically I should be there before the helicopter, but oftentimes I believe Glen mentioned that the local vendor will be there quicker because they preposition themselves and they'll be waiting for the managers, so that does happen.

JIM HALL: Is there ever an occasion where the helicopter managers are exposed to the contractors? And off season when you're laid off, do you ever have any interaction with the companies?

NICK STROHMEYER: I don't personally but there's opportunities to --

JIM HALL: I mean on a formal basis, do you ever at the end of a fire season sit down with the companies and talk about what went right, what went wrong, how we might improve our performance?

NICK STROHMEYER: No. We just do the evaluation forms that Jill mentioned that they started. So at the end of a shift it could be done day, it could be 14 days of

working with a vendor, I'll fill out a report that kind of says how the vendor operated, the private company, and then that's if they can (send it to ?) a regional office.

MR.: You just made a point that's causing me to be curious. You indicated that the vendors sometimes get there first because they preposition themselves to be in the right place at the right time?

NICK STROHMEYER: Sure.

MR.: Do they just do that on their own?

NICK STROHMEYER: They sure do. I can't remember who mentioned it, but, yeah, they'll do that on their own nickel just instead of sitting in Tennessee when the fires are starting to get big in the Northwest. They'll on their own nickel preposition themselves.

We have also definitely in southwestern Oregon this happens, but locally here we'll have some contractors that the fires will start up almost in their backyards so they'll be there before we are.

MR.: Okay, but there's no deliberate effort for the federal agencies or the state to match the managers with the prepositioned helicopters?

NICK STROHMEYER: This is getting a little bit over my head here, but I believe there is to a point some prepositioning depending on the severity of the fire season. While they can move a CWN manager and marry them up with a type 1 or a type 2 CWN helicopter to preposition them.

JIM HALL: Just very quickly, because we've got so many more people to hear from, but what is your opinion of the level of professionalism that you see with the operators? Is there a marked difference between the exclusive use and the Call When Needed?

NICK STROHMEYER: With the vendors, no, but there's several different companies out there and there's some good and some bad. And there is some good to have exclusive use contracts and some --

JIM HALL: When you see a bad one, what do you do?

NICK STROHMEYER: We do as much documentation as we can.

JIM HALL: And are you familiar with any of the ones that you thought were bad that got eliminated?

NICK STROHMEYER: I believe there are some that are no longer in the system.

MR.: Nick, can I ask one question? Any feedback you generate toward the helicopter management program in terms of we could speed the process up if we did the paperwork after the -- you know, is there any formal mechanism for collecting before you go off on your enforced vacation at the end of the year suggestions for next year?

NICK STROHMEYER: I guess are you asking, sir, a program in place for me to give feedback --

MR.: And the helicopter manager to put inputs into the system and say, you know, boy, we could really cut down 45 minutes on this inspection if we did --

NICK STROHMEYER: Yeah, oh, definitely. Glen and Jill have an end of the year meeting with all the managers in our region that we can put input in about the fire season.

MARINA RIBA: Hi. My name is Marina Riba (?) and I'm the assistant manager on the West Side (?) heli-attack crew right here in Ogden, Utah. And I've had experience in several different states. I worked in Alaska for about five years and a few other western states.

And I, just like Nick, came mostly to listen and to learn and give input if I can help out in any way.

JIM HALL: Now, what else are you carded as?

MARINA RIBA: I could get away easily. I'm carded as a crew boss and incident commander type 4 and a few other qualifications related to helicopters -- infrared camera operator and things like that.

JIM HALL: And what percent of your time do you spend as a helicopter manager this past season?

MARINA RIBA: I would say almost 100 percent running a crew and then I also was a Call When Needed manager on two helicopters and once I was there before the helicopter and the second time I was on the fire and the helicopter arrived and I was just transferred from one crew to manage that helicopter so we're basically there at about the same time.

And my pre-work inspections generally take about I would say 45 minutes, not more than an hour. And I feel like the work that we do there is good, it's beneficial and it helps to make the operations safe. I can't really see a way to streamline it, but I think it works. I don't think it's broken personally. That's working well.

KENNETH PERRY: I'm Kenneth Perry. I work for the BLM. I'm an air tactical supervisor with the aerial supervision module program. And we are planning on going to the Sacramento meeting also, but we decided to stop by here to see what was going on.

MR.: Where are you based?

KENNETH PERRY: California, Lancaster.

RYAN KERREL: My name is Ryan Kerrel (ph). I was recently hired by the BLM as a lead plane pilot, began my firefighting career in 1990 on an engine crew working for the BLM in east Idaho. I've had the opportunity over the years to work on hand crews, helicopter crews, fought fire all over the country and in Alaska over the past few years. And originally I hadn't planned on addressing the panel, but after hearing Mr. Lynn talk to you guys a little bit I thought it might throw myself out there, and if you guys had any questions from a ground firefighter standpoint or the aviation side, whatever, I'm available.

JIM HALL: What's changed on ground firefighting since you've been doing it?

RYAN KERREL: When I began in 1990 it didn't seem like we were as top heavy as we are now with management. It seemed to me that when I first started that things were a little bit cleaner, everybody had a definite job, the managers were more available to get involved in ground forces, more approachable and now things have become quite complex. I don't think that there's as much access for the ground firefighter to talk to managers or to really become that involved with upper management in some of the decisions that are being made out there.

JIM HALL: Thank you.

DIANNE PRICE: My name is Dianne Price and I'm also an air tactical supervisor on an ASM mount (?) module for the BLM. I started my career in 1979. I've been on a heli-attack crew, hotshots. I was a smokejumper both for the Forest Service and the BLM, worked on engines and became an air tactical group supervisor and then joined the BLM and became an air tactical supervisor.

And I guess my question or why I'm here is I wanted to see what you were all about, because I've been doing this job a long time and, of course, any job is important to the person that's doing it, so this job is important to me. And I guess some of my questions are like when you address safety are we just talking aviation safety or are we talking firefighter safety, because that's one and the same. Because basically aviation is a support function to the ground firefighter. And there are a lot of reasons for that. And also I guess when you talk operation effectiveness it's just making sure you understand the mission and understanding things like line production, which is a very important part of the mission, because line construction is pretty much what we do to put a fire out.

So I guess I just really wanted to see if, you know, I mean because in order to address these issues you need to know what these issues are and how it's really done.

MR.: Can I ask Dianne and Ryan kind of a combined question --

(Audio break, SLC 3, side A to side B.)

MR.: -- to get fatality accidents on the ground with ground firefighters and maybe the employment of ground firefighters has changed over the last five to eight years, going back to the accident in Colorado and the one last year?

DIANNE PRICE: No, it hasn't changed. Basically, I think what we all need to understand is that our job has an inherent risk. Fighting fires is a risky job, just like a tree climber is a risky job. The people that work on high rise buildings, it's a risky job. There probably always will be a risk to the job and there's just no way to take it out, and I think we need to understand risk management and that I think is something that we don't do enough of is looking at managing the risk.

MR.: Who is it that is "we" in that sentence?

DIANNE PRICE: Just our agencies, us. I mean, as an agency I think that we don't.

MR.: Can you expand on that? How would you do it differently to do better risk management?

DIANNE PRICE: Well, I think what we need to do is look at the risks in the job and then see why these fatalities happened in a realistic way and then look to basically solve that. And a lot of it really comes down to the old funding. A lot of it's education, experience, like this individual gentleman was saying, he gets laid off for nine months. I mean, why not have him work year round and just send him to more training? I don't think we get enough training in this job and a lot of it is OJT and I think some of it could be I think if we had more avenues to train, which would be funding, then we could basically be a better organization.

MR.: If I can say something, Mike mentioned this earlier about some of the rumors that these preconceived notions that all the tankers are going to go away, and I think that the reason that some people think this is because that's the way -- and this goes to what Dianne was saying -- risk management, in a lot of ways the agencies, their risk management is doing away with what was risky and not figuring out how to mitigate the risks. And, for instance, now in region 6, although I didn't fight fire this year, there's this disengagement policy and I think that's the direction that people are going and that's not necessarily the right direction to go. You can't just stop doing it but you can mitigate the risks and make it safer, train people better to make decisions quicker and that goes along with what Ryan said ten years ago I think people were allowed to make those decisions and most of them were safe. Some people make mistakes but now I think that a lot of these regulations are set in stone, checklist this and checklist that, don't do it if this

happens, when there may be a safe way to do it but nobody's being allowed to make those decisions anymore and that goes into aviation as well as ground firefighting.

MR.: When you're dealing with risk and risk management I've heard people talking about ever since we got onto this panel, the element or there is another element too, which is the risk assessment part and I haven't heard that term mentioned anywhere in the whole time we've been here. And if you try and do risk management without doing good risk assessment first you often fix the problem before you've got it defined and the fix doesn't match the problem. Is that and I'm just not having to hear the words or did they really analyze the risk before they did it?

MIKE MELTON (?): Well, I think risk assessment in the business world or with OSHA is doing a job hazard analysis and signing a piece of paper. And you're looking at a static situation and saying these are the risks, these are the dangers, let's mitigate them and how do we do it. In fighting fire it's a fluid environment. Things are changing all the time so risk assessment should be going on all the time, every step of the way and that is our risk management. It's almost one and the same or very quick to follow the assessment is the management of that risk, just like flight test would be or a military operation would be where the outcome isn't always the same, so you have to change tactics quickly and hopefully intelligently to keep from making a mistake.

AL HYDE: We have three more people that (inaudible.)

MR.: And the way to do that, if I'm just putting words in your mouth perhaps or it's what Dianne said, training and just developing of that safety culture, is it not?

MR.: Absolutely.

JIM HALL: Before we move on, do you understand what we're charged with doing from reading that green sheet now? Or does that leave questions in your mind?

DIANNE PRICE (?): I guess my only concern is like with Mike here is we hear there is a lot of talk and there is a lot of rumor about what you're actually here to do and I guess my only concern is that I just want to make sure that if you're here to assess the aerial firefighting, I just think you need to know the firefighting part of it. I don't think you can truly look at aerial firefighting without understanding firefighting and I guess that was my major concern.

MR.: Well, can I confess then that we have asked to go out on a fire, we have asked to get in an airplane over a fire; it hasn't happened yet.

JIM HALL: All right, let's keep moving then.

MIKE MELTON: Can I jump on that?

MS.: Why don't you jump on that, Mike?

MIKE MELTON (?): Again, maybe you didn't get my e-mail. I did try and get the panel onto a fire and I was more than willing to guide you through anything that you needed to go through -- aviation, ground, helicopters, fixed wings. Unfortunately, it just didn't happen. With your schedule it's tough to get you to do that. There's no doubt about it. But I will promise you this, that if you do want to get out and see some simulated firefighting I can arrange that for you. It may not be with an aerial tanker but I can probably get some lead plane, air attacks and some helicopters to at least simulate what goes on.

The tragedy would be that you would not have the dynamics of any smoke, flame and the excitement that goes along with it. So if you want me to, I'll try and arrange that for you.

AL HYDE: We have three more people here, there and here.

CLIFF NOUVEAU: My name is Cliff Nouveau (ph) and I started to fight fire in 1973 as a ground firefighter, went through the ranks like a lot of people here did, hotshot, smokejumper and I'm now a pilot. I've been flying since 1989, been a lead plane pilot since 1992.

I'm getting close to retiring and I'm a critic. And you're touching on some questions here that I'm finally glad to hear. The question that Ken asked down there to Dianne and I think the gentleman at the end of reference 1994 South Canyon I think are critical to where we are today. At least in my career path I've seen a huge change.

The question I think that you're getting there, Ken, in risk management and assessment is a huge difference between our managers and those of us that do the job.

I've taken some notes from questions that you've asked and you've zeroed in on the helicopter side pretty well and our frustration on the operational side we've asked ourselves the very same question. Dianne and I fly together and we have the same hang-up with this. I guess my huge concern is we're full of managers, the operational side of the job has fallen down and we've traded safety -- you know, we use safety as the kind of cover to have these positions but are we really being safe or doing better and that's a big concern and I don't think we are.

Back to 1994 as a big change in philosophy of management, I think the emphasis was taken away from the person on the ground to make a decision of his own safety and was placed in a manager that may be sitting at a desk somewhere and people's careers suffered and people lost their positions because of that as managers and really where they had disjoined contact with the people that were actually killed on that mountain that day.

So I think that has affected us down to 30 mile here a couple years ago and in Washington has done the same thing and we just keep nailing a few more nails in the coffin in terms of being effective and in my books we're less safe than we've ever been in

terms of fighting fire, because we've backed off to a position where we think we're safe and we're really not.

MR.: Would you say this is on the ground, aviation, all of the above?

CLIFF NOUVEAU: Yes. I mean, this risk management thing is huge. I hate to refer to some of our people in management, but Tony Kearns (ph) said to us when he first got the job, he said, we're down there -- Mike invited him to fly with us and get out on a mission and he balked at it extremely, didn't want much to do with it and he did make the comment, he said, "No house down there is worth the risk that you need to take." Our management, their risk management is to avoid doing the job. Don't do it. Zero risk is zero flight time. And so those of us that have been doing this for a long time don't understand that mentality, so there's a big difference right there.

MR.: Do you know how you would get back to where things would be more effective? Have you got some ideas?

CLIFF NOUVEAU: It's a good question. I mean, I think we've asked that ourselves. From a ground firefighter point of view is one foot in the black is the safest place to be, literally. You always have a place to go when something changes. And that is really not in our terminology anymore. I don't know if you're familiar with the basics of firefighting, these ten standard orders and stuff. They're actually pretty good advice. We've expanded it to be all sorts of stuff now. The list has gotten really long. And I think that's an example of over-management maybe.

But one foot in the black, if you can carry that into the aviation side, is true. I mean, we need to be aggressive but we need to be thoughtful and we're out there managing, talking with the tankers, talking with the helicopters, talking with the people on the ground all the time in terms of what we can and can't do. It's a fluid relationship.

MR.: Could I ask a question that would not only help me understand what you're saying here, because I believe what you're saying is exactly right. It would help me in our aviation role but also in my role on this National Wildland Fire Leadership Council that's highly involved now in this ten-year implementation plan and looking at a whole lot of things like that.

My question of you and maybe others here, back before we had the National Fire Plan, it seemed like the general level of this MEL, this maximum or Most Efficient Level or something like that, was somewhere in the 65 to 70 percent range at best and the fire plan was supposed to bring that up to 95 percent or higher, which meant hire a lot of people. And I've seen the hiring take place but I'm not sure I've seen the delivery of improved quality effectiveness and maybe that's what I'm hearing here is that we've hired a lot of people but that hasn't necessarily made us any more effective than we were.

CLIFF NOUVEAU: (Off mike.) I think any experienced firefighter last year and the year before, when they did all this new hiring was whoa, slowdown. You're going to

hire 20 new hotshot crews and all these people and they didn't have any way to train them, they didn't have good leadership for these crews and that was a huge issue to a lot of people, to say that more isn't necessarily better. I mean, I think we could get by with bringing the level of funding up and training people better to make better decisions without throwing 500 more people out there. Is that kind of what you were getting at or the question you were asking?

MR.: Yeah, that's sort of what I think I'm starting to pick up in all of this.

CLIFF NOUVEAU: Right now the answer seems to be more directed towards quantity than quality. The answer is to throw money out there, hire a bunch of people and unfortunately I don't think we've necessarily thrown the money in the right direction. We probably haven't hired the right personnel or certainly haven't given them the training that they need to do the job in the same manner safety-wise that we were accustomed to a decade ago.

JIM HALL: You had a point?

MR.: And just, you know, when that money came down (off mike). Sorry about that.

MS.: You're going to have to play Donahue, Al.

AL HYDE: I'm doing that. But I've got two people here that want to speak yet.

MR.: Yeah, just real quick. Jose Cruz was the fire director and he said exactly what you're hearing in this room, but he also recognized that the National Fire Plan is going to take 20 years, there's five key points to it, it's just not people. There are a lot of other factors involved and a lot of other moving parts to it. But he absolutely predicted we needed to catch up on the training and it would be at least five to ten years before people moved up in positions and that whole bottom section we just hired got up into those management and supervisory ranks. So it's pretty much on track. I think what the biggest problem there was that Congress gave us the money and said do it. We didn't really get to plan for it and that was very unfortunate that it came down that way.

MR.: You've had two years. Why would you solve the nation's problems?

MR.: We have 18 more to go according to Jose.

JOHN SOPDIG: Hi. I'm John Sopdig (?), exclusive use helicopter manager here in Salt Lake for the Bureau of Land Management and basically came in today just to observe and see what I can take back to my local field office and kind of see what direction you guys are going to go in with the panel.

JIM HALL: Well, let me ask a question. We've been to two regions and one region we ended up with some BLM people and I'm glad to see all the BLM people here and then we went to one region and then nobody showed up from BLM.

JOHN SOPDIG: I was told -- I got the e-mail from the Forest Service side, so it never came down the BLM chain and I'm really one of the only people that even knew about it on the BLM side.

MS.: It's not really (off mike) that much to folks, to be honest with you. I mean, I found out on the air tanker base message board on the computer, but I know my (off mike.)

JIM HALL: We are the stealth blue ribbon panel I guess.

MS.: And I put the Forest Service Web site with all that stuff on the air tanker board site too so that would be accessible. I sent their Web master an e-mail.

MS.: (Off mike.)

JIM HALL: Well, all five of us could respond to your question, but I don't want anyone, and I hope we've measured -- this has been mentioned before, and others, each one of us were independently asked to do this. Each one of us have other jobs and responsibilities and unfortunately cannot devote the full time to this.

Personally, as I've gotten into this, because I have been into accident investigation for seven years and I'm very familiar with that in all forms of transportation, but I think the point of being -- because when you about a risk assessment you have to talk about both the air and the ground together, and I do think it's very important that we know more and I appreciate your efforts to come here and help educate us, because we have seen the dynamics change on the ground obviously have affected the risk in the air and how the air resources are being used.

So if you all have other information please provide it to us, but we are trying to come up with findings that we hope will provide some of the folks future direction.

Having spent seven years in the federal government recently, I understand in Washington we have gotcha a lot of times with the inspector generals and the GAO and with all these people and many times the managers at the top are responding to things that don't want to take a risk because they obviously don't want to then have investigations and audit. So there has to be a balance and so hopefully we can make some contribution in trying to look at resources and accountability, because one of the first things, if you're going to talk about safety is the equipment you give someone has to be appropriate for the mission and has to be safe, the individual has to be appropriately trained and then you get into the rules and regulations and procedures, checklist.

MS.: I guess one more thing I'd like to say is that really it's a team effort out there. I mean, we all work together. The heavy air tankers work with the single-engine air tankers and we work with the helicopters and with the ground. I mean, it takes all of us --

JIM HALL: Well, this has been fascinating for me, but one thing I can tell you I have learned from this is there is no lack of committed people that believe in what they're doing in this area. I've been most impressed with that, whether we're talking person on the ground or any other role.

MR.: If I could back us up just a little bit to what I was talking about before about the risk management, risk assessment, to manage the risks they've got to be managed in accordance with the mission that you've been given. And in the few weeks that I've been involved in this thing I've learned that the mission is not the same for all the agencies, that within the agencies the interpretation of the mission seems to be quite varied and there is this business of it's our job to put out the fires when they're tiny right away and do that, and somebody else says, "Oh, we want to let these ones burn or we wait until they get big and then we try and contain them," and I'm not sure how you assess the risks of doing the job until somebody has a clear idea of what the job is.

And maybe I'm wrong in that, but I think each agency has a good idea of its own job. When the whole thing has to get put together and there are a whole bunch of agencies and a whole bunch of contractors all trying to work together, and several of them have different jobs, it's very, very difficult to manage it effectively. Is that wrong?

MR.: No, I don't think that's wrong. I think the difference is that really our risk management isn't much different for us operationally. This year is different in the fatalities that we had and the two aircraft we actually had structural failures. In the prior tanker crashes that we've had and fatalities they've actually been attributed to pilot error or to (off mike.) I think these two accidents are unique.

JIM HALL: Let me say something on that. Because of the accident and the failure the NTSB is looking back at the C-130 accident that occurred in '94, '95. As you know, these airplanes are not equipped with flight data recorders or with cockpit voice recorders, so trying to determine pilot error or trying to determine exactly what happened it makes it much more difficult than an accident investigation because you do not have the modern technology that we are able to effectively use in other forms of our investigations.

MR.: Right and I apologize for a personal opinion.

JIM HALL: No, no, no. It's not a personal opinion; I just wanted to say that you're a pilot and I like to see, you know, the pilots many times we have pilot error or pilot performance accidents, but you set the stage to say it's pilot error. If you don't have the technology there to try and make a determination as to whether it's the airplane's fault.

EARL MCKINNEY: And if you've been a pilot for a while you know the first knee jerk reaction is pilot error. So the crew is always suspect is the number one problem. And having been involved in some of those in the flight test business sometimes it takes a very good investigator to figure out what really did happen, because it's too easy to blame the crew.

MR.: You know, part of your fragmentation is you're just on the tip of the iceberg; between BLM and Forest Service we're getting to be a wider and wider group. Then you go to the states and it depends on where you go to the state. You go to Texas, well it will work one way. We go on to Tennessee we'll work another way, we go into Florida, go to Alaska. So we have to deal with that day in and day out. So there isn't any standard there.

You asked the question earlier should it be under one agency for firefighting. That's been tried on a smaller scale by the Alaska Fire Service and it didn't prove very successful, though that doesn't mean it's not a good idea.

EARL MCKINNEY: Yeah, we defend North American airspace with North America Air Defense Command and we take all the resources of two countries and put them under one commander and he sends them where they need to go. And so far we've all been okay, except for September 11th and that wasn't Air Defense Command. And I think it can work really well.

MR.: Well, have you got the feel for how disjointed we are, fragmented? I mean, we not only have regions within the Forest Service, we have states within the BLM and then we have state governments themselves and so there's a huge amount of fragmentation in the programs.

And to come under, you know, it's pretty simple once we're on the fire really because we're firefighters, the fire's not any different. It's the managers that argue where the money goes or who pays for it. But in terms of resources and effectiveness, resource hoarding, where those managers are going to come from or where that tanker is going to come from, it's a huge deal and it's messed up.

MR.: Is the air support more effective than it used to be, less effective?

MR.: Less, less.

MR.: Less.

AL HYDE: What I'd like to do at this point is take a ten-minute break. I have two panel members that need to get out of here and head to Denver, but the other three of us are going to stay and come back at 3:00 and we'll stay here until 4:30 and continue this discussion and go through and give you the option of being here with us or heading down the road or whatever, and if you want to go to the airport with these guys, well then fine. So let's take a break and we'll back at 3:00.

JIM HALL: And thank everybody for their contribution.

(Break.)

MR.: Next.

MR.: I guess I have a question. (Off mike.) How do you envision the final product, I mean, that comes out of this and what type of scope is it going to be? Is it going to mainly be arbitrary recommendations? I mean, is it going to be a broad program view, ten-year plan, twenty-year plan, just the stuff that needs fixed right now? I mean, how are you envisioning it?

MR.: You know, at this stage I don't really think we have a clue, honestly. Our charge was to listen, to gather as much fact as we could possibly identify and I think somewhat by law or policy or something like that we were told that all we could issue were findings.

MS.: (Off mike.)

MR.: So we have to make findings that are so obvious and compelling that people do something about them, that they just can't leave them sit there and say if that's known we just can't leave it alone.

MR.: Okay. And that was mainly where I was going to go with it, because I mean within the industry most of us know where our problems lie and that we have had the same problems year after year and for either fiscal reasons or one way or the other we have not accomplished to actually fix the main problem. So I was just curious if that was the task that you gentlemen were given was to state those and are you going to break it up into broad overview stuff, aerial supervision tankers, helicopters?

MR.: I don't think we know at this stage exactly how it's -- we've done a good bit of thought already on how we might organize the report, but it's specifically enough to answer what you're saying for I don't think we've identified how specific --

AL HYDE: If I could interject one thing, it would be interesting to have Ken tell you about the format that the National Transportation Safety Boards use and the kinds of reports, because I think one of the reasons of having both Ken and Jim Hall on the panel is to bring that different kind of format. And I'll tell you one thing is there is one absolute given: This report will not be measured in hundreds of pages and it will not be measured in a checklist with hundreds of recommendations or even findings, because we know what happens to those kinds of things. But I think there's a format there that the group is very interested in, and maybe, Ken, if you could address that, that would be very useful.

KEN JOHNSON: Well, I could give it a go.

Both the NTSB and the TSB in Canada produce reports that you could almost peel a label off and put the other one on and you wouldn't know who did it. They're very, very similar. And we try and follow the processes of scientific analysis and we lay down the facts that we can gather and we analyze those facts, so there shouldn't be anything in the analysis that isn't in the factual part of the document.

And then we develop findings from those facts and the findings have an amount of strength or the strength of the inference in the findings is related to how strong a factual base there is for them. So we don't try and say things with a great certainty when we're on pretty shaky ground.

And then we go on from that to make recommendations, but the recommendations part certainly won't be in this report.

This kind of an exercise is very different, this panel exercise very different from what we do in an accident investigation. TWA 800 took Jim Hall and his people a little over four years to produce the report. Swiss Air 111, which you're probably familiar with, that we did is going to take just a little bit longer and that pleases Jim, because he's not stuck with this report anymore.

But those are very long, painstaking things where facts are checked and rechecked. In this thing we're going to be using a lot of information that we gather in these kinds of sessions with tons and tons of documents, a lot of the information is -- I won't say it's contradictory, but it sure needs reconciliation for it to make sense from one to the next.

So I think in this report there's going to be more exercise of judgment than we really like to do, but I think all of us have been around the track a few times and we can fish out I think fairly well the important stuff. I think we all realize that governments in democratic countries get a list of jobs to do that are well, well in excess of what there is money to do and it's all good stuff. And the Congress can only puts its law into so much lawmaking, the budget can only stand so many kinds of projects and I think the lawmakers tend to do the things that the public gives them permission to do. And in a general sense the public says we're tired of seeing wings come off tankers, we're tired of seeing houses burned up in canyons, we're more tired of that than we are of some other thing and then the politicians get the permission to deal with that problem. And if they deal with the problems they don't have permission to deal with, the next election comes around and they're doing something like we are, they don't have their job anymore.

So I think what we have to do in our report is to use the kind of language that will be seen by the public as being full of commonsense and very compelling and saying there are these very important things that need to be done to fix these problems in the United States and I think if we can manage to do that there is a very, very good chance that there will be good action on the policies, on the organization and on the funding.

And I don't think we're going to tell anybody how to fix the problems. If we can identify the problems and say they're there, they're very serious and they need to be dealt with, that's probably as much as we can do.

And if you've got any suggestions for us to do it better, please come forward.

MR.: That was the only question I had. I was just trying to envision what the end product was actually going to be and what it was going to accomplish.

KEN JOHNSON: It's, what, 35, 40 pages and as Jim has said, one of the most important things is that we don't make a finding that they need another study. (Laughter.)

MR.: We don't do that in the government, do we? (Laughter.)

JIM HALL: And, you know, I'll be very honest with you. I have participated in a number of studies with state government, local government, federal agencies, and there's nothing that frustrates me more than to do another study, which has 30 findings and 30 solutions or 30 anything else is in it and it goes on the shelf and nothing is done about it and then the next study says there was a study done four years ago that addressed this same thing, come up this next time with 60 of these things, goes on the shelf and nothing's happened.

And so I think all of us that are part of this panel, we're so committed to looking at this in such a way that hopefully by listening to you folks from all over the nation that we'll be able to, as Ken says, put down findings in such a compelling way that it would be an absolute crime for the American public, Ken's talking about through the politicians and others, to throw this thing on a shelf and not do anything with it.

So that's why we're here for you to tell us what are these findings that we can put in this report that are so compelling that it will cause something to happen, and there's not a one of you that's told us anything that I don't sense from you. We want something to happen and so keep it coming for as long as Al will let us stay here so that we can continue to find these compelling findings that will cause something to happen that's positive.

MR.: Can we address the tanker fleet and the age issue?

JIM HALL: Sure.

KEN JOHNSON: Sure.

MR.: I guess myself, you know, I'm not only -- it's interesting to me that if you look at a 1945 engine, you know, what does a 1945 engine look like and yet that's what we're flying out there. And then on the other side I see these guys that are flying these and this is what they do, they do the job. We've been through an evolution, they killed a

lot of crews, you know, C-119s and other aircraft and we've eventually left those aircraft for something different.

So I'm curious what you see is an option for whether you've gotten a feel for can we move on and is there a way that we can go.

MR.: You want to try?

KEN JOHNSON (?): Sure. You know, I know those airplanes. Those are the ones that I was flying in the Air Force in the middle 1950s that we all thought were too old then.

We've seen that the government of the United States provides aircraft and training and operational supervision for its fleet of airplanes like the ones you fly for the lead planes and there are some pretty good standards on that. And we've seen that through the contracting process that the way the contracts are written there seems to be very little in there that asks the contractor to ensure that he's providing a safe kind of operation. There's not a whole lot that seems to provide for good adequate training and there's these old worn out military airplanes that were around and people could pick them up and they could do a job at the cost of a lot of crews.

I think that whole business has to be looked at. The government has to be asking the question as to how they justify morally providing a standard of safety for their own employees and a different standard of safety for those other Americans who they employ by contract and if you leave that question on the table people are going to have to think about it.

We're going to have to look at the wisdom of taking these old military aircraft that were built to drop bombs on Germans or whatever they were built to do and employing them in a very different environment, maintaining them to the maintenance standards that they had for their original purpose and not knowing really whether fatigue life and all that sort of thing is being appropriately considered, and I think that sort of thing has to be looked at if we're keeping it to the tanker fleet you're talking about.

We have to look at I think where the aircraft are employed and what's suitable kind of performance for the places that you've got to put them and whether you need purpose-built aircraft or whether you can modify some old airplanes or whether you just pick up what's in the junkyard and put it back in the air and do the job.

And I think if we put our minds to those things and get the thoughts clear, what the people who are in charge of the programs will have to do is say, yeah, it obviously can't continue that way and we've got to fix it. We can't tell them how to fix it. I think if they talk to you and they talk to the contractors you can get together and say this is really what we need to do the job. And I think if that can come out of what we're doing, then we've got to be fairly happy.

AL HYDE: To be fair, what's your thought?

MR.: Well, I think that's good, but I guess what I see is a lot of polarization of special interest groups between the air resources. Rather than us coming in under one umbrella as a firefighting group we've got helicopters competing for air tanker space and we've got single-engine tankers competing for their little niche and realizing that we need them all. It's like Mike said, that analogy I think is good. It's just another tool on our toolbox and we need to be given that opportunity to speak as a single voice. And a lot of the helicopters we're using out there are just as old. Those Sky Cranes, those '61s and stuff are old, too.

KEN JOHNSON: I don't think you asked me that, though. I think you asked me about the heavy fixed-wing tanker fleet, did you not?

MR.: Well, but that's what I mean. You can't single them out I think out of the aviation group.

KEN JOHNSON: No. I tried to confine the answer to dealing with those, but the management of the whole thing, the command and control structure, how you put the resources that all taxpayers put a little bit of money into each one, into a way that you get the job done well, as cheaply as you can, without killing people has got to consider the whole fleet.

MR.: Well, that just brings you to king for the day. I mean, what I would do, it would be late model (HERCS ?) that are available through the military or however. I'd contract the crews and contract the maintenance and the government keep the paper on the airplane.

KEN JOHNSON: Yeah, and the HERC has got civil certification as well and you might even go to get some new ones built special purpose. All that sort of stuff is there to be considered. Those guys that were in this morning with the little agricultural airplanes probably have a place in the thing somewhere.

MR.: Oh, they do, definitely.

MS.: Yes.

MR.: You know, one is not exclusive of the other and that's what concerns me is we need them all. And for us on the fire they have their place on the fire.

MR.: And we can't do everything, but I expect you've got to look at crawler tractors and backhoes and pumps and engines and all that stuff and it's all got to be brought into balance one day, but all that's not going to be solved in one day.

MR.: I think on the ground it's been a little more proactive. They actually have monies that are allotted for down the road for replacement of their fleet, but we haven't done that for aircraft per se, especially on the contract side.

JIM HALL: Could I ask a question maybe of you? The National Fire Plan to be in a year, was any of that specifically put into aviation?

MR.: As far as aviation personnel and programs (off mike) things like that we did do. And probably just real quick when you talk about aircraft replacement (off mike).

(Audio difficulties at source.) (Cross talk/laughter.)

MR.: When you talk about the National Fire Plan and just to get back to that, yeah, we did beef up our aviation program under the National Fire Plan dollars. Both agencies did. But it's really important to understand in our working capital fund where we replace an engine we pay a fixed operating rate per month into a pool of money and then those funds eventually five or ten years, depending on the piece of equipment, we'll replace that piece of equipment.

In the aircraft end of it in our government owned aircraft, which we have 41 of in the Forest Service, BLM has, I'm not sure, do you know?

MR.: One.

MR.: One?

MR.: The Otter.

MR.: The Otter? They have one. We pay a fixed operating rate under that exact same program, but by law we cannot replace those aircraft, cannot buy new aircraft. So we are looking for congressional dollars anytime we go to replace an aircraft and that's something I know is frustrating Tony Kearn back in DC right now with the aging fleet on the Barons. We paid in but we don't get to use the money.

MR.: I think another piece of it that you have to look at as well as the complexity of this structure of somebody said I think 13 federal agencies and I don't know how many states is what percentage of the people that are in the service either directly or by contract are fighting fires and what percentage of them are there counting whatever and not fighting fires and streamlining as much as possible this stuff.

And at the same time I know all governments have an OMB or something like that that says unless you can account for every nickel we aren't going to give you any more and it's always a struggle, but there is I think a tendency to put maybe more than appropriate amount of resources into the overhead functions and be a little skinny on the line, in all governments in all activities.

MR.: You know, just real quick, you've touched on two of my topics that I love to talk about. One is going back to Jose Cruz, who is our director when I was back in DC and Jose would look at every dollar and say how many firefighters on the ground will that cost if we buy extra engines that sit on the shelf with the Barons. Don't buy the engines; put more firefighters on the ground. He was one director that pushed dollars down all the way.

We're now under a plan that continues to do that that he wrote, and I feel really good about that, that we do work very hard to do that, but our overhead is larger. I will be the first to admit it.

The second thing you touched on, and be it whatever government --

(Audio break, SLC 3 to SLC 4.)

MR.: (In progress) -- so that's why I was asking.

MR.: Yeah, I'm familiar with birddog operations.

MR.: It depends which birddog and which province you're talking about. There's a little difference there. But I mean they're really very similar. They just (inaudible) culture in the way they develop the training is the difference in the way that they approach the same job. I mean, you know, the lead plane versus birddog, we may do more actual leading than, say, the province in Alberta but in BC their birddogs actually will do a very similar role to ours. And then you can always throw in the (inaudible) BLM does (off mike.) The job's not really that much different.

MR.: Okay.

AL HYDE: Do you want (three minutes ?) on this clock?

MR.: So I guess that's all I have on the Baron replacement, haven't heard anything about it. I can't answer what the new replacement aircraft would be. I guess some part of the other as a safety tool effective and being efficient out there also has been addressed mostly with dispatch problems or, you know, I don't want to go down that road either, but Cliff was talking about earlier some of the efficiency. I think you asked are we as efficient ten years ago as we are today. I don't think Cliff was referring to on the fire efficiency, but a lot of those problems I believe are from a dispatching situation.

I've been in numerous situations, a couple quick stories. About three years ago I'm in Ogden and I see a fire on the hillside five miles from my location and for me to call dispatch and report that is about as criminal as going out and starting a fire, I think the way they would see it. Hey, a lead plane guy is calling us on the phone to report a fire.

So from the time I noted the fire until I got my dispatch order was 35 minutes and I don't know if you guys are that aware of how the dispatch organization works, which I think can tie back to some of the efficiency in getting fires suppressed when they're small, which reduces the risk of large fire operations. Has that been discussed with you guys? Have you asked questions about how your dispatching goes? And I think that ties all into the safety analysis and hazards.

MR.: What about performance and visibility from the lead plane? If you're specifying a new lead plane, what does it need to do that's different than what the Baron does or you need to be able to see?

MR.: Well, I think from a lot of the lead plane drivers and whatnot, the Baron, as old as it is, from a visibility standpoint it's not too bad visibility wise but performance wise it's underpowered, especially on one engine. (Laughter.) Because I know.

So, I think that's one instance, getting back to dispatch that we were talking about, because I know you guys are taking in all of this and how effective are they out there and all that. Another fire that I was on, the Bullock fire out of Tucson, Mount Lemon in April-May timeframe, I don't know if you guys are aware or have heard of it, kind of early season. I think it went to $45 million or something.

An initial attack candidate air tanker pilot, which means he can drop over the fire without a lead plane, without an air attack if he has that card, he was qualified, he was over the fire at 7:00 that morning, a P-3, 3,000 gallons, ready to drop on the fire. The fire at that time was an escaped campfire. He could barely see the smoke. Dispatch says, well, there's no lead plane there, there's no air attack there. You cannot drop on the fire and it was not in an urban interface situation. So he goes back to the tanker base loaded.

MR.: Not in a really tight valley or something? Not difficult drop conditions?

MR.: Correct. So I use the term dispatch is fighting the fire, which gets back to the effectiveness, efficiency of not just myself and the air tankers and the helicopters, the smoke jumpers, they all hear that. Hey, there's a fire on the hillside and it's 30 minutes, an hour later before you have the documentation to go fight the fire, which somebody from the outside, how can you guys weren't there earlier. And I just don't know, I'm just expressing my feelings on dispatching and IA and efficiency and all that.

MR.: Those are the kinds of things I think that we can put into findings that the politicians are going to say the taxpayers won't have any patience with and that have to be fixed.

MR.: Right.

MR.: I'd like to add to that, too, because that's an exclusive use manager. On the front range here in Salt Lake we'll have, for instance the state had a fire, the Hoff (?) fire east of here. It was an hour and a half before we were dispatched, simply because we

were on hold in case another fire started, and that happens everywhere in the country all the time. You're on hold in case something else happens. And I think that's a huge problem, a huge problem.

The Big Wash fire, we were down in St. George, Arizona. We sat there for three days watching it burn before we went to the fire, and they had orders in dispatch for us to go.

So I think there's a huge breakdown nationally in the dispatch system. I know they're cleaning it up with (Ross ?) and a few other things, but fire managers like to hang onto their things. They get something, they want to hang onto it in case something else pops and they have the resource there.

And two of the things that I have, two of my biggest challenges as a heli-attack supervisor are inconsistent budgeting from year to year. One year I can buy everybody on the crew brand new gear; the next year I can only hire eight people instead of nine because I can't afford them. And the second thing is non-standardization, where I believe part of that is a function of the multi-jurisdictionality we have where, for instance, communications, I know we talked about this a little bit in the hall, there's 800 megahertz, that's what all the county guys are using, the structure guys, DOI is going to digital, Forest Service is kind of, well, we may go digital but we're going to stay analog for a while so we can't talk to each other.

From a safety standpoint I know in region 4 they require their helicopters to be part 27 compliant and BLM says it's not necessary, we don't need to be compliant, and furthermore we don't need to rappel because we have 80 smokejumpers in Boise that can help you out.

So we're slowing down our initial attack, we're squeezing, my helicopter is 18-years old, we're squeezing that into Juniper; granted, it's only 12 feet high but we're squeezing that into spots we shouldn't be when we should just be rappelling in there. And furthermore, we should have a part 27 compliant ship that I feel more comfortable putting my people on board it.

So I think to sum it up the two biggest things for me as a GS-9 crew supervisor are inconsistent budgeting and just in general non-standardization of the whole system.

JIM HALL: Could I come back to a statement you made a while ago? I have this ongoing personal battle with the federal agencies over detection and you just hit a hot button with me over your statement that there's not much worse than a lead plane pilot reporting a new fire and from a state perspective the quicker we can find a fire and get something on it to put it out the better off we are.

MR.: Yeah, I was just kind of joking about that. That was a joke. It's just (inaudible) from dispatch. Well, let me back up a little bit. I call dispatch. I'm a lead plane pilot. Oh, I want to go out and fly, I want to go fight fires and they're like, oh,

great, you're reporting a fire. I'm just saying that's kind of the aura of sometimes dispatch of getting us out there.

You know, actually the FAA control tower in Ogden where I'm based they're the ones that call the fire and they say, well do you want to call them, and I say, no, they'll probably accept it more if you call in reporting the fire than me reporting the fire. That's what I was just kind of in a joking manner was what I was referring to. And then I had to call the tanker base and tell them their backyard was on fire. (Off mike.) It was 35 minutes from that call before I got the dispatch and it takes me 30 seconds to get there in the airplane; it was literally that close.

MR.: I'm glad I asked.

MR.: We're out of order here, sequentially we're out of order, but I just wanted to stay on the initial attack. It's been my belief for a long time, having come out of industry and been involved over 20 years in this aerial fire suppression business, I think we as an agency or agencies need to redefine what we mean by initial attack. You've heard the term initial attack over the course of the few weeks you've been around. And we in the fire community throw it out pretty loosely. We know what it means to us, but I think over time we as agencies have lost our definition and level of commitment to what we mean by initial attack and how we are going to achieve that goal.

That kind of touches on what Greg and this other gentleman were talking about when you see a new fire, why does it take 35 minutes. Well, there are other things going on behind the scenes. Is that a priority within that land manager's area? Where is it exactly? How is he tasked with suppressing that fire in that area?

Secondly, in large fire support, yes, we have problems. There have been many times, in fact, most times for a large fire the air resources, at least the fixed wing air resources aren't launched until 1:00, 2:00 in the afternoon when the fire is at its peak as far as the burning period, the heat of the day and wind of the day, when in a lot of cases it may be more prudent to attack that fire early in the morning when the fire is laying down.

These are things that have been happening for years. But again how long does it take for you to get your dispatches? It's analogous to driving down the highway. When one person steps on the brake, the person behind them steps on the brake, steps on the brake, it slows the whole process. Perhaps we do have too many layers to go through in order to access those resources and to get those resources coming to the fire.

I'd also like to carry out just one statement. Back, Ken, when you and Cliff were talking about the fixed wing air tankers, you know, Canada has an air tanker program as well and they too fly old airplanes, round-engine airplanes. They have the A-26s and the DC-6s and they've evolved into the Conger 580 and Electra. It might be useful to see what they are using as a maintenance model and training model and then compare it to what we have here.

MR.: We're doing that on the 24th of October.

MR.: Okay.

MS.: That's a trip they won't take me on. (Laughter.)

JIM HALL: We heard something along the way regarding what you just said about how much more effective it would likely be to attack some of these fires from the air in the morning, but the reason they couldn't do that was because all of the managers were in briefings and meetings and all those kinds of things in the morning and nothing could happen until they got out of their meetings and therefore nothing happened until the afternoon.

MR.: Well, that could be true, Jim. You know, I've always thought over the 20 plus years that it just wasn't fair to hit the fire while it was lying down. (Laughter.)

MARINA RIBA (?): Okay, I guess I'll step in right now. I just had a few points in closing. One thing is the helicopter crew I work on is a little bit unique. We have two helicopters. One is a national resource. It's a Bell 205 A1++, so I have the opportunity to work on that aircraft as well as our local aircraft.

And I noticed a couple times this year on the national aircraft it does go across the country. It was on the East Coast, West Coast last year and a lot of the states in between, but what I have seen a lot over the last two years is once we get to a fire there really is a tendency of the team to really want to hold onto the resources well after the fire has stopped its significant growth and that's just something as far as I see kind of where you're focusing your efforts, which is maximum efficiency and use of our resources, which I think is everyone's goal, but that's just something that I've seen a lot. Oftentimes the last two or three days we're on the fire we rarely fly at all or if we do it's only one or two hours. And I know that just from looking at the situation report that there are other fires that could use us and fly us more.

So that was one concern and then the other thing is just reiterating what Nick said about investing in our employees. I know Murray Taylor wrote an article. I think it appeared in the -- well, I forget which paper it was in, but basically what it outlined was that because of the way our funding works, some years it's up here and the next year it could be way down here. We end up losing a lot of really good people because there is no incentive for them to stay. And we have a lot of good GS-4 people. That's probably about 75 percent of our crew right now I think. If we can establish more incentive for them to stay because once they leave we lose a person that's got two or three years experience and they're going to a city fire department because there are more opportunities and more pay there. But if we could maybe offer higher grade levels or more appointments for them and thus more training I think it's going to be beneficial for everyone.

That's it.

AL HYDE: We've got a few up here and then we'll do the back row.

MR.: Okay, real quick. I've got a question, but first I think I'm speaking for these guys that, look, when you're talking about dispatch and initial attack and stuff, it's not bellyaching, it's that if that easy fire gets big then you're sending more people out to assume higher risks and all that sort of stuff, so it is a safety issue.

The question is, and the answer to that will be my concern, we were talking about percentages and qualifying numbers and things earlier. What percentage or what ratio in all of these meetings that you've been to -- I don't know how many you've had; three, I guess -- is it between management and operations people that are speaking and asking questions and that sort of thing, just right off the top of your head?

MR.: Are you saying --

MR.: I'm saying like --

MR.: Are there very many management people showing up that --

MR.: And the relation to or ratio to operations people, people that are out there doing the job? Where is most of the concern coming from? Where are most of the questions coming from or comments?

MR.: I don't know if I really looked at it consciously that way. Obviously there are fewer managers than there are other people, although it may not seem that way. And the managers who have been coming I think have been pretty active. The managers who have been active we've noticed. I guess there might be some sitting there who never said anything and we wouldn't know whether they were managers or not managers. But we've had some pretty good stuff from managers and we can get that easily any time. What we can't get easily any time is the views and the experiences and the issues as put forward by the people who are on the ground doing their job and I think we're getting a whole lot of that.

MR.: Good. That was my concern. Thanks.

AL HYDE: I'll give you some specifics in terms of the four places we've been so far. It's about quarters. About fourth of the people who have been here maybe, the panel has heard from somewhere in the neighborhood of about 75, 80 people so far and about 25 percent of them are contractors and industry types, 25 percent of them management people clearly in the organization, 25 percent have been other states, cooperators, other people, whatever, and then the last quarter has been people on the ground level. And I would also say if you take those numbers you'd skew them, it's about 65 percent aviation directly related, 35 percent are the other.

MR.: I guess I'd just like to comment, having listened to the discussion this morning and realizing that you guys have just come from the Portland meeting, my impression this morning was that you're getting hit pretty hard by I hate to call them special interest groups but Oregon has a real heavy helicopter bent in the people that you probably talked to and judging from the conversation this afternoon you guys have been hit by these folks.

I guess as a person that came up as a ground firefighter who's now involved in aviation I would urge you to listen to these people, but don't draw any conclusions that would eliminate any of our tools. As vociferous as the single-engine air tanker people were this morning, they are not the answer to the problem. The helicopters are not the answer to the problem. Everybody has a piece that they can contribute the puzzle and it's a very large puzzle. And to eliminate any piece of that puzzle you're going to create a whole new set of problems that we're going to have to deal with, even, you know, trying to replace them with some of these other puzzle pieces.

And so I guess my thought that I would like to leave you with is don't eliminate anything that the ground firefighter has come to rely on, because the tools that we have now work very effectively and efficiently, they enhance our safety. And some of the problems that we're facing with these tools involve dispatch, efficiency in getting them out to the fire line and things like that, but they're not the tools themselves.

MR.: I think one of the reasons that they put a bunch of bald-headed and gray-haired old guys on the panel is that we've been around this track a couple of times and we have heard lots of times from interest groups and I think we're not bad at distinguishing between what they have to contribute and what they have to serve themselves. We're not perfect at it by any means, but we're sure conscious of it.

JIM HALL: If I could follow just a little bit on that, too, I think that one of the things that we've heard, there's lots of different perspectives on just about every aspect of firefighting that we keep hearing from, but I think if there's one consistency that I'm hearing throughout it should give some degree of comfort to you and the statement that you're making in that I don't think we've talked to or listened to any group, regardless of how narrow focused they are, from the private sector to top management that hasn't said exactly what you're saying, that there's a bunch of different pieces to this thing and it's very important to recognize that each piece has a place, but that piece needs to be made at a most effective, safe, cost efficient, sustainable and all these things that we're looking at, but I don't think anyone has told us you need to get rid of the seats, the helicopters are driving this bunch out and that's great news or anything. We just keep hearing over and over exactly what you just said, and to me that's a good sign, too. And I think that's a good finding for our commission.

MR.: I agree with you, Jim, and there's a bit of the commercial heavy-lift helicopter guys will say we really do what we do very well and you might just want to adjust the balance a little bit our favor because we're so good, and then you talk to the fixed wing guys and they read the same manual.

MR.: And that was the impression that I was getting when the single-engine air tanker folks were up here making their piece. Unfortunately, what I didn't hear were the questions that I would have asked them, single-engine versus multi-engine safety. They're building these air tractors to be survivable in a wreck. I would argue that we get aircraft out there that don't wreck.

JIM HALL: Don't wreck. Well, sure.

MR.: Why do we want to subject our pilots to even having the risk of having a single-engine go out and then they have no options? And these are some of the questions that I didn't hear being asked.

MR.: Right. Those things crossed my mind. I started flying in 1953 so I've been through a bit of that stuff. And I didn't feel the need to them to ask them because I think I've heard that stuff before and I kind of know where they're coming from and I was looking for stuff that I hadn't heard before.

DIANNA PRICE: I guess the only thing I would say in closing is that being an air tactical supervisor and having a bit of a responsibility over a fire, I'm accountable, but I feel that accountability is lacking in our organization, especially when it comes to our coordination centers, because they make decisions but they're not accountable for their decisions. I mean, the decision they make might have kept a fire at an acre and not gone to 300 acres, but there's no way of ever going back and saying, well, you were accountable for that decision because you decided not to send that air tanker that was requested by the guy on the ground, because he's the one who puts the request in normally through me. He'll say, I request three air tankers. I call dispatch. It goes to the coordination center and they say, well, no, that's not a priority. I mean, there's no real accountability for decisions being made at that level, because they're so removed from what actually happens in that decision that they don't see. And there needs to be a little more accountability because I think they'd be more on it if they had to be more accountable.

MR.: I think there's a principle of doing things that can or need not be employed, and I'm very much in favor of employing it, and that is driving the decision-making down to the lowest level it can be held accountable for it, and if they really have, the whole service has that in its mind all the time, a whole lot of things can change and mostly for the better.

JIM HALL: Are you speaking about a geographic coordination center or --

DIANNA PRICE: No, it's really kind of -- I mean, I fly all over the United States and it's just an underlining, it's the way our system is built that people can make decisions but nothing will ever come back to them for making that decision. It will go to the person that actually had to deal with the fire or be on the fire. I'm accountable, really, or the IC is accountable but it never goes back to who held that resource from us. It's kind

of hard to explain, but I see that a lot in the summer that people make decisions but they just make them because they have no accountability to the decision. And that's that hoarding, resource hoarding. They hoard resources because they can, because they have no accountability. I mean, it's just something I've seen.

KEN JOHNSON: I don't know if you have it in your civilian part of your public service. In your military and in ours I know we had what we call career-ism, where people ducked all the controversial decisions so that you wouldn't get a bad mark on an evaluation and slow up your career. And that's a horrible infection to have in an organization.

MR.: We're infected.

DIANNA PRICE: We're infected. I mean, we're the ones that are held accountable.

MIKE MELTON: I guess the last point I want to make, because I think everybody over here made a lot of points that I wanted to make is you said that, well, Rusty was pointing out that you only had a short period of time to make your analysis. That is a travesty. And you said that you would report on the big things. As you can see, there's a lot of little things that are making the big problems and no matter what you say I know that there's a lot of things that aren't going to be brought out and given to whomever is going to receive this report.

And I guess in closing my question is who is accountable for the report that you will present?

MR.: Who is accountable for it?

MIKE MELTON: In other words, you're going to come up with your findings, you're going to give it to somebody. Is that person going to put it on the shelf? Who are we going to look for?

MR.: We don't know. I think if we write it the right way it will be too hot for anybody to put on the shelf.

AL HYDE: The report goes directly to the chief of the Forest Service and the head of BLM. Tony Kearn will put together a group that will start working on the implementation component part of that in December and will also feed into the strategic planning process that goes out to (off mike.) That's what's (off mike.)

MR.: Well, make it hot, boys.

MR.: Does any of this report that you guys are doing here get tied back into the investigations on the two airplanes that came apart, being the reason why you're here today?

MR.: I can answer that one for you, if you'd like. We actually did put out that safety alert to the chief that the accident rate was unacceptable and we needed someone to look at it independently and that's this panel.

MR.: But will our work go back to the NTSB? Is that what you're asking?

MR.: Is there a joint function there with the report or (off mike) -- report after yours?

MR.: I don't think there's any joint report.

MR.: (Off mike) -- what they found and what you guys found?

MR.: The panel has been to the NTSB and has been briefed on the investigation of the two accidents, has been briefed on what the NTSB is doing generally about firefighting aircraft and government aircraft and I don't know what the investigators will do, but I do know that the Canadian and American agencies work very, very similarly and if it was in Canada the investigator would be expected to look at this. And I think the NTSB, my guess is the NTSB investigator will be expected to look at what we see and pull it into what he does.

AL HYDE: It's a curious coincidence that the day after we were briefed by the FAA and the NTSB they issued their own news release and then came out with a new directive on Thursday, which has now been supplemented in. There's a new inspection process and you can look at that on their Web site and you'll see that, as co-chairman Hall would say, how interesting it is that this has now become a much higher priority for the FAA and NTSB as a result of this….

Robert, are you going to finish so we can go home?

ROBERT: Yeah, I'd love to beat traffic, thanks.

What I would actually like to kind of pick up on is what Mike was saying. On your final report, as you write it, remember who your audience is, is not the chief of the Forest Service or the USDI; it's a congressional staffer that's going to be looking at that and that is really who I believe the audience will be that will take this and do something with it.

JIM HALL: We've talked about that and I think we see that and something else. I think it has to be compelling to the American public who will drive the staffer who will look at it.

ROBERT: Exactly, and those are the words I think you --

JIM HALL: We have that very clear in our minds.

ROBERT: I really appreciate that and from this interagency group in the Great Basin we really appreciate your being here. Thank you.

AL HYDE: And I would tell you one last thing. The word on the street is, on my street in Washington, is that Congress, the House is basically postponing hearings they were planning on having on that until after this report is done.

I have one last thing to say to you. If any of you would like a copy of the transcript of this day, you'll put your name and e-mail address on that little piece of paper over there and when it comes out in two or three weeks I will send you that and a copy of the report. If you don't, then you can pick it up on the Web site at your leisure. You don't have to put your name down there, but if you want me to send it to you, just this particular session so you have it for your file, I'd be more than glad to do so.

MR.: It's probably just a post meeting comment, and I can only speak for myself, Tony Kearn phoned me and asked me if I was interested in this and he said we're looking for people who are independent. He said he was not coming to the meetings because he didn't want to appear to influence anything, and that he wanted us to write a plain language strong report. So that's what I heard. I don't know what the others heard, but I expect it was pretty similar.

MR.: If you get that question again at the next meeting, just say it's clear text, so you understand --

MR.: Okay.

AL HYDE: Robert, thanks to all of you for hosting us and thanks for coming and you're now about to embark on the most dangerous portion of the day, which is driving home in the traffic. Take care.

[END OF MEETING.]