

FIREFIGHTING AIRCRAFT SAFETY

HEARING

BEFORE THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDRED EIGHTH CONGRESS

SECOND SESSION

JUNE 2, 2004

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ONE HUNDRED EIGHTH CONGRESS

SECOND SESSION

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FIREFIGHTING AIRCRAFT SAFETY

WEDNESDAY, JUNE 2, 2004

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, DC.

The Committee met, pursuant to notice, at 9:31 a.m. in room SR-253, Russell Senate Office Building, Hon. John McCain, Chairman, presiding.

OPENING STATEMENT OF HON. JOHN MCCAIN, U.S. SENATOR FROM ARIZONA

The CHAIRMAN. Good morning. Today's hearing is to address the recent decision by the Department of Interior and the Department of Agriculture to cancel contracts for all 33 of the large firefighting aircraft. That action has a substantial impact on many states in their efforts to fight forest fires. According to the Forest Service, 20 percent of all retardant used to suppress wildfires was delivered by these 33 aircraft.

We are told these cancellations were in response to a safety recommendation letter issued by the National Transportation Safety Board that reviewed three accidents involving firefighting aircraft. However, it should be pointed out that the key recommendation in the NTSB letter was not for the agencies to cancel contracts. It was that the contracting agency should further develop a maintenance and inspection program to ensure the safe operation of these planes. Rather than instituting such a safety system, however, the agencies involved simply canceled the contracts for the aircraft.

Some Forest Service officials were quoted in the press as being, "surprised," that the NTSB concluded that they had responsibility for the safety of these planes. But there is no justifiable reason for such a reaction. This issue has been around for years, with reports by the General Accounting Office, the USDA Inspector General, and even a joint report by FAA and the Forest Service, all of which recommended improvements to the safety oversight program.

Moreover, after two accidents in 2002 the Forest Service contracted with Sandia National Laboratories to develop a better safety oversight plan for these aircraft. Sandia visited every aircraft operator and developed a number of recommendations. Among the recommendations was a requirement that each of the 33 aircraft receive an in-depth inspection. The majority of these inspections were completed by Sandia and the FAA in 2003.

The NTSB report briefly discussed the Sandia study as follows, quote: "The Safety Board is aware that the Forest Service has recently embarked on a multi-year plan to evaluate and improve the

airworthiness of its airtanker fleet, including modification of its maintenance program so that it more closely reflects the firefighting mission. The board supports this initiative and looks forward to learning more about the progress and results of this plan.”

Again, the NTSB report did not recommend grounding these planes. In fact, according to the excerpt I just read, the NTSB supported the approach that was being recommended by Sandia.

While the safe operation of these aircraft is of paramount importance, we cannot lose sight of the fact that lives on the ground are also at risk. We are already well into fire season in many states. The destruction that wildfires can cause is almost beyond comprehension. In Arizona, for example, the 85,000-acre Rodeo fire that occurred in 2002, which had already been declared the worst in Arizona’s history, merged with the Chattasky fire to form an inferno that destroyed 468,000 acres and more than 400 structures. A total of more than 630,000 acres in Arizona burned in that year alone.

Therefore, during today’s hearing I hope we will receive testimony from the agencies on what actions are being taken to return the tanker aircraft safely to service. They clearly are a critical part of our Nation’s firefighting arsenal, especially when used for initial attacks on emerging fires, where the use of tankers buys time for fire crews on the ground, and when used to protect buildings.

I look forward to hearing from our witnesses.

Senator Burns.

**STATEMENT OF HON. CONRAD BURNS,
U.S. SENATOR FROM MONTANA**

Senator BURNS. Thank you very much, Mr. Chairman, and thank you for holding this hearing. And thanks for inviting Mark Timmons, who is President of Neptune Aviation Services out of Missoula, Montana. We are happy to have him here. As you may know, Neptune has played a vital role in firefighting in my state and many others states in the West. It represents the very best of the companies contracted to fight fires and, as you can imagine, I am very concerned about the company’s well-being.

My concerns also carry over to the entire West. We are about to head into another fire season, which is probably going to be another record. The drought conditions continue in the West and just institutional knowledge will tell us that we are going to need some aircraft to fight fires.

I also believe that we have a situation that can be alleviated if we can get some good faith negotiation between the appropriate agencies and the companies involved. Both government and private entities have the same two goals: the aircraft need to be safe, they need to be properly maintained; we need resources to fight this year’s fires.

I want to emphasize that wildfires still concern us in the West. Last year wildfires nationally burned 3.6 million acres and cost \$750 million. Within that, in Montana we burned up 860,000 acres at a cost of \$260 million. So we are concerned. Over the past 4 years, nationally 22 million acres have burned. That is 34,000 square miles, with a cost of over \$4 billion. In Montana we account for 2.3 million acres. In a fire season alone we have 190 million

acres that is at risk due to insects, disease, and hazardous fuel accumulation. We still have those conditions even though we are working on them every day.

Mr. Chairman, we have a drought condition in the Rocky Mountain states of my state and Idaho, Wyoming, Nevada, Colorado, Utah, New Mexico, and Arizona. They remain—those levels remain in severe or extreme fire danger. Even with the current rainfall in Montana, 70 percent of the subsoils are short of moisture. Many snowpack water equivalent sites are 50 percent of normal. The scenario is not good and I believe we need all the resources that we can gather and utilize them this summer.

Finally, I hope that we can find some solutions today. In my meetings with the various agencies and others involved, I have found that there is a lot of finger-pointing and, quote, “My hands are tied” talk. I see a company like Neptune, who has civil airworthiness certificates in the FAA certified maintenance program, suffer from this decision. I do not know if we need a study that looks at each operator individually, but I would like to examine our short and long-term options.

Flying any airplane is dangerous business, as you well know. Let us get the safety measures in place, acknowledge that there are those who already have those safety measures in hand and are doing them today. Good companies should not suffer from a blanket decision that did not take everyone into account individually.

So thank you for holding this hearing, Mr. Chairman. We have got—I think we can work this whole thing out. I did not know the issue was going to get this big, to be honest with you. But there are so many grey areas in this thing, and everybody kind of—it is kind of a CYA thing, but we have to resolve it because we are in the fire season.

Thank you again for having this hearing.

The CHAIRMAN. Thank you.

Senator Wyden.

STATEMENT OF HON. RON WYDEN, U.S. SENATOR FROM OREGON

Senator WYDEN. Thank you, Mr. Chairman. I too appreciate your holding the hearing. We have got four westerners here and it is a bipartisan quartet, and that is exactly what I think it is going to take in order to turn this problem around, because it is pretty obvious that we have a responsibility vacuum. It seems that everybody thought somebody else was in control of ensuring that these tankers were safe for wildfire fighting and at the end of the day it seems that nobody was really in charge.

I am particularly interested in making sure that today it is clear that there is now a plan for dealing with this problem and that it is clear who is responsible for taking the lead in ensuring that the recommendations, the safety recommendations, from the National Transportation Safety Board, with whom I met yesterday, are actually followed.

I think it is also important that we look at new ways to ensure that there is enough scientific information to design a safety program that takes account of the special stresses of firefighting. Certainly that means that there has got to be a process for obtaining

the data. One question that I want to ask is whether the installation of flight data recorders on aircraft in the firefighting fleet would be of some value in collecting data immediately during this fire season.

So there are important issues to be dealt with and, with the four of us all coming from the West, it is pretty obvious that for the next few months we are going to see people all over the West grabbing their belongings, fleeing their communities. I think there is a responsibility to get this tanker policy right to ensure that we have the tools for wildfire fighting. I look forward to working with you, Mr. Chairman, and our colleagues to do that.

The CHAIRMAN. Thank you.
Senator Boxer.

**STATEMENT OF HON. BARBARA BOXER,
U.S. SENATOR FROM CALIFORNIA**

Senator BOXER. Thanks very much, Mr. Chairman. You could not have picked a more important topic for my state right now, and I know all of us in the West are so worried about the conditions.

I would ask unanimous consent that my full statement be placed in the record and I will summarize it as fast as I can.

The CHAIRMAN. Without objection.

Senator BOXER. We all have to just look back to the devastating wildfire season last year, when fire swept through Ventura, Los Angeles, San Bernadino, Riverside, and San Diego. It was a result of many conditions, including not enough rainfall and the bark beetle infestation that killed trees throughout the region and turned them into kindling. Twenty-four people died, 750,000 acres were burned, and 3,700 homes were lost, give or take a couple.

One important tool for us then was the Forest Service contracting for aerial tankers. There were 23 used in those efforts, which were contracted from private companies. After three airtanker accidents, one in 1994 and two in 2002, the NTSB released recommendations that Department of Agriculture and Interior develop maintenance and inspection programs for firefighting aircraft.

Now, rather than do that, the Department of Interior and the Forest Service simply canceled the contracts. So we may well lose this vital resource. Now, I wrote to Secretary Veneman and Interior Secretary Norton and requested information on what measures are being taken to ensure that airtankers will be available when needed in light of the decision to terminate their contract for 33 large airtankers. Mr. Chairman, I have yet to receive a response. That is why I think this hearing is so critical.

I just want to quote Fire Chief Bill Smith from San Bernadino after he read that the tankers were grounded. This is someone on the ground. This is not a political person. He said, "In reality, it is just pretty scary going into this type of a fire season without this fire resource. When they are available, when they can be used, they have a major effect on fighting." And he went on to say the tankers were especially helpful in getting a handle on the fires in the early stages.

In Victorville, we know flames were approaching, airtankers were used to get the fire under control. During fires last year,

David Weldon, San Diego County Sheriff's helicopter pilot, hovered over the Cedar fire in Cleveland National Forest and was unable to do anything about it. He said if airtankers had been deployed the Cedar fire could have been put out.

Now, we know we have used helicopters, but they are not a substitute. We are hoping that your alternative plan is not the one we think it is, which is to use California's airtankers, because that is just not enough. We used all of those the last time.

Agriculture Under Secretary Mark Rey stated at the Energy and Natural Resources Committee—Mr. Rey, you are here today—that “Thousands of wildland fires are suppressed without the benefit of air support.” So I hope I am not reading into the fact that you do not think that these tankers work, because if that is your position that is contrary to my people on the ground who are dealing with this every single day.

So, Mr. Chairman, thank you. I think maybe we need to look to the FAA on this whole matter. This hearing is so crucial. Again, I thank you for holding it.

[The prepared statement of Senator Boxer follows:]

PREPARED STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM CALIFORNIA

Mr. Chairman, thank you for holding this important hearing today.

Last year, California had a devastating wildfire season. The fires extended through Ventura, Los Angeles, San Bernardino, Riverside, and San Diego counties. This was a result of many conditions, including not enough rainfall and bark beetle infestations that killed trees throughout the region and turned them into kindling. From these fires, 24 people were killed, 750,043 acres were burned, and 3,710 homes were destroyed.

One important tool in combating the fires was the Forest Service contracted aerial tankers. There were 23 used in the efforts, which were contracted from private companies.

After three air tanker accidents—one in 1994 and two in 2002—the National Transportation Safety Board released recommendations that the Department of Agriculture and the Department of Interior develop maintenance and inspection programs for firefighting aircraft.

Rather than doing so, the Forest Service just simply cancelled its contracts for air tankers. Therefore, we may well lose a vital resource.

Right after the tankers were grounded, I wrote to the Agriculture Secretary Ann Veneman and Interior Secretary Gale Norton and requested information on what measures are being taken to ensure that air tankers will be available when needed, in light of the decision to terminate their contract for 33 large air tankers.

After the news that the tankers were grounded, San Bernardino County's Running Springs Fire Chief Bill Smith said in a local newspaper, “In reality, it's just pretty scary, going into this type of a fire season . . . without this fire resource. When they are available, when they can be used, they do have a major effect on fighting.”

Fire Chief Smith continued to say that the tankers were especially helpful in getting a handle on the fires in the early stages.

During the wildfires last fall, tankers were used to control the fires. In Victorville, as the flames were approaching, air tankers were used to get the fire under control quickly.

During the fires last year, David Weldon, San Diego County sheriff's helicopter pilot hovered over the Cedar Fire in the Cleveland National Forest and was unable to do anything about it. He said that if air tankers had been deployed, the Cedar Fire could have been put out.

In California, there are other resources to combat fires, such as 23 commercially operated fire-fighting helicopters—which includes three Sikorsky Skycranes—and 23 S-2s, which are smaller air tankers belonging to the California Department of Forestry and Fire Protection. There are also military aircraft in California.

In some cases, helicopters are a better choice to put out fires in the mountains, but we still need the tankers, especially for longer distances.

I understand that the Forest Service has come up with an alternative plan—which has the Forest Service relying on California’s air tankers.

Agriculture Under Secretary Mark Rey stated at the Energy and Natural Resource Committee that “thousands of wildland fires are suppressed without the benefit of air support.” But, in the fires in California last year, we needed all the resources—including air tankers—to effectively fight them.

I hope to hear from these witnesses today about solutions to this problem.

First, should the tankers continue to be grounded because that was not the recommendation from the NTSB?

Second, should the FAA be given the authority to set standards for the tankers, so they can continue to be used to fight fires?

Third, if the tankers are too old to fly, then we need to appropriate more funds to replace the tankers or increase access to more military aircraft to ensure that all the resources are there to fight these fires.

Last year’s fires were devastating to my state of California. This year, we have already had large wildfires. The major fire season is only a few months away. We need to act now to protect our people and property from these fires.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.
Senator Smith.

**STATEMENT OF HON. GORDON H. SMITH,
U.S. SENATOR FROM OREGON**

Senator SMITH. Thank you, Mr. Chairman. Thank you for holding this hearing. I will submit my statement for the record, Mr. Chairman.

The CHAIRMAN. Without objection.

Senator SMITH. But I thank you as well for holding this hearing. It is, I think as Senator Boxer said, a very important hearing, even a life and death hearing, for many of our communities. I have a number of questions I hope I am able to stay long enough to ask Secretary Rey about the needs of State land, private land that adjoins forest land, and the need of the Oregon Department of Forestry to utilize the tankers that they have hired in the event that these are in fact grounded, and it is just too late sometimes to stop a fire that is roaring when it comes to private land. The truth is it does not know the border, and sometimes the bureaucracy involved really can be damaging, in this case downright dangerous.

Thank you, Mr. Chairman.

[The prepared statement of Senator Smith follows:]

PREPARED STATEMENT OF HON. GORDON H. SMITH, U.S. SENATOR FROM OREGON

I want to thank Senator McCain for holding today’s hearing which affects both of our states considerably. In fact, 15,000 acres have already burned in Arizona this season. I expect that number to be far worse in the next few months.

Notwithstanding my concerns about how we got into this 11th hour crisis, I have several issues that must be addressed on behalf of Oregonians today. I fear the image of airtankers grounded on the Redmond airfield while the Deschutes National Forest and adjacent homes needlessly burn all around it.

The state of Oregon and the Oregon Department of Forestry must be given the ability to protect homes and property within their jurisdiction. That will be rather difficult if the state has to wait for a wildfire to reach someone’s back yard before attacking it. At the very least, there should be a clear process for determining when it is appropriate to use State-contracted resources.

I would call on all Federal agencies represented here today to continue working collaboratively to create a certification process for the rest of the firefighting fleet. Otherwise, bureaucratic paperwork may just further fan the flames of an already uncontrollable wildfire.

The CHAIRMAN. Well, thank you, Senator Smith. I just want to mention again that we all know, Senator Boxer mentioned, all of us in the West, we all know what is going to happen in the next few months. And here we are at a time where there is no such thing as any act of God being inevitable, but the chances of a devastating forest fire, plural, is extremely good, given the drought conditions that exist.

At the same time, an extremely valuable asset has now been taken from the inventory, even though the National Transportation Safety Board did not make such recommendation, as we will hear. There was an interesting letter in the *Arizona Republic* from Ms. Kathleen Clark and Dale Bosworth—Kathleen Clark is the head of BLM and Mr. Bosworth of Agriculture, the Forest Service—who say “That is why we terminated the contract pending a determination that they can be operated safely. The National Transportation Safety Board has determined that the tankers have potential structural problems that might lead to a catastrophe if we send them to fight a fire. The NTSB has further determined there is no means to immediately ensure the airworthiness of these aircraft.”

I think we are going to hear testimony today that is not true. It is remarkable that in my home town newspaper the head of BLM and the head of the Forest Service would make a statement that is at best disingenuous and at worst absolutely false.

I happen to have an aviation background and I do not have a firefighting background, but I do know that the NTSB is the ultimate arbiter in this kind of situation with regards to aviation safety, not the Department of Agriculture, not the Bureau of Land Management, and certainly not the Forest Service. That is why I was motivated to having this hearing today and that is why I think it is important that we have the witness from the National Transportation Safety Board here this morning.

So our panel is: the Honorable Ellen Engleman Conners, Chairman of the National Transportation Safety Board—we thank you for coming today—Mr. Nicholas Sabatini, Associate Administrator for Regulation and Certification of the FAA; Mr. Mark Rey, Under Secretary for Natural Resources and Environment, U.S. Department of Agriculture; Mr. Mark Timmons, President of Neptune Aviation Services, Missoula International Airport; and Mr. William Grantham, President, International Air Response Incorporated, Chandler, Arizona.

We will begin with—I want to thank all the witnesses for coming today. We will begin with Ms. Engleman.

**STATEMENT OF HON. ELLEN ENGLEMAN CONNERS,
CHAIRMAN, NATIONAL TRANSPORTATION SAFETY BOARD**

Ms. CONNERS. Good morning, Chairman, members of the Committee. My name is Ellen Engleman Conners and it is truly my privilege to serve as the Chairman of the National Transportation Safety Board, representing the board's 429 dedicated professionals. Thank you for the invitation to testify before you today regarding the board's recent safety recommendations that resulted from three separate accidents involving firefighting airtankers.

Chairman we have submitted our written testimony, if we could have that as part of the record, and I will summarize it.

The CHAIRMAN. All the written testimony will be made part of the record.

Ms. CONNERS. Thank you, sir.

Please let me begin by acknowledging the tragic loss of lives in the accidents being discussed today. Pilots and crews from the states of California, Montana, and Nevada were killed during these three accidents. It is our hope that out of these tragedies and through the NTSB independent safety investigation and recommendations that good will come.

Our investigators and staff spent more than 2,500 man-hours investigating these three tanker accidents. The accident aircraft were surplus military aircraft built after World War II. From the beginning of the investigation, it was understood that these aircraft were investigated in the category of public, as distinguished from civil operations and therefore were not required by the Federal Aviation Administration to comply with many of the FAA regulations codified in 14 CFR.

For example, regulations pertaining to aircraft certification and maintenance and flight crew training and licensing are not applicable to public operations. Additionally, aircraft used in public operations are not required to be equipped with flight data or cockpit voice recorders. Therefore, it was the opinion of the board that the operator, in this case the U.S. Department of Agriculture, Forest Service, was primarily responsible for their safe operation.

As in the case with all of our investigations, open discussions were held with the parties involved. The Safety Board worked closely with the aviation personnel from USDA-Forest Service, Department of Interior, and FAA from early stages of the Walker and Estes Park investigations through the final release of the accident report and the Safety Board's recommendation letter.

Early in the investigation, within the first month or so, it became evident that there were serious issues concerning the airworthiness of these airplanes and the oversight to ensure their safe operation. As the NTSB drafted its recommendations, we held biweekly meetings and teleconferences with the FAA and the Forest Service to share our concerns and our proposed recommendations with them.

As per our normal investigation procedures, the NTSB did not inspect all aircraft in the firefighting fleet, nor did we investigate all companies involved in aircraft firefighting. The safety issues identified in the accidents were potentially present in all large airtanker operations. Thus, the NTSB safety recommendations were applicable to the entire large airtanker industry.

An example of safety recommendations being applicable to the broader industry was shown also in 1996 with the TWA Flight 800 accident. The airplane exploded off the coast of Long Island, killing 230 people. The NTSB did not investigate all manufacturers of large aircraft, but the recommendation to inert the center wing fuel tank was aimed at all transport-category aircraft.

Our recommendations regarding firefighting aircraft were specific. In order to ensure that there is robust oversight and inspection infrastructure that will ensure the safe operation of aircraft used in firefighting operations, the NTSB recommended that the USDA and the Department of Interior develop maintenance and inspection programs for aircraft used in firefighting operations that

take into account five specific factors, require that the aircraft in firefighting operations be maintained in accordance with those programs, and hire appropriate personnel to conduct oversight of those programs.

In addition, because some of these public use aircraft might be used for civil use at other times, we recommended that the FAA require the same maintenance and inspection programs. We also recommended that the FAA serve as the focal point for collecting continuing airworthiness data about surplus military aircraft from the original equipment manufacturer or the military in order to ensure that—in order to share that with subsequent owners and operators.

Our recommendations for safety apply to any airframe, regardless of age, used in firefighting. Whether an old airplane or a new airplane or an airplane still being designed, the recommendation to have a maintenance and inspection program is the same.

We note that in March 2004, the industry's Consortium for Aerial Firefighting Evolution released the Strategic Aerial Firefighting Excellence report. The conclusion contains a parallel finding to the Safety Board's finding. The safety report concluded that the local load environment in which the current and future aerial firefighting fleet remains largely unknown; until this environment is adequately characterized, there is an unknown level of risk that unanticipated in-flight structural failures may occur in both the current and future operational fleets.

The industry's SAFE report also concludes: "There is a need to implement structural health monitoring programs on a large number, if not all, of the current airtankers. Data obtained from these programs will define criteria against which the suitability of future aerial firefighting aircraft can be evaluated prior to conversion and ensure the ongoing safe and economic management of the current fleet until such time as it can be replaced."

The Safety Board is also aware that the USDA began work with the Sandia Laboratory to develop a maintenance and inspection program for firefighting aircraft. We noted in our safety recommendation letter that the Safety Board is aware that the Forest Service has recently embarked on a multi-year plan to evaluate and improve the airworthiness of its tanker fleet, including modification of its maintenance program so that it more closely reflects the firefighting mission. The board supports this initiative and looks forward to learning more about the progress and results of this plan.

In addition, the Canadians have developed an extensive program to conduct appropriate inspection of these aircraft. However, neither the nascent USDA nor the mature Canadian programs are currently in place in the United States.

The National Transportation Safety Board recognizes that aerial firefighting is an intrinsically high-risk operation. We believe, however, that the risk of an in-flight structural failure should not be considered an unavoidable risk of firefighting. The increased risk of fatigue cracking and accelerated crack propagation can and should be addressed through proper maintenance programs.

Thank you for the opportunity to testify today on these important safety matters. I will be happy to answer any questions you have.

[The prepared statement of Ms. Conners follows:]

PREPARED STATEMENT OF HON. ELLEN ENGLEMAN CONNERS, CHAIRMAN,
NATIONAL TRANSPORTATION SAFETY BOARD

Good morning, Chairman McCain, Senator Hollings, and Members of the Committee. My name is Ellen Engleman Conners, and it is my privilege to serve as the Chairman of the National Transportation Safety Board (NTSB), representing the Board's 429 dedicated professionals. Thank you for your invitation to testify before you today regarding the Board's recent safety recommendations that resulted from three separate accidents involving firefighting air tankers. Please let me begin by acknowledging the tragic loss of life in the accidents being discussed today. Pilots and crews from the states of California, Montana and Nevada were killed during these three accidents. It is our hope that out of these tragedies and through the NTSB independent safety investigations, good will come.

Our investigators and staff spent more than 2,500 man-hours on these investigations. These investigations were conducted by our regional aviation investigators, with assistance of specialists from our headquarters in Washington, D.C. Over 2,000 aviation incidents and accidents (2,059 in 2003) are conducted every year by the NTSB's approximately 35 regional investigators.

As you know, the Safety Board is an independent Federal agency and not a regulatory or enforcement agency. We are charged by Congress with investigating every civil aviation accident in the United States and significant accidents in the other modes of transportation—railroad, highway, marine and pipeline—and issuing safety recommendations aimed at preventing future accidents. NTSB reports are based on facts, science, and data—not supposition, guesswork, or desire. And, as you are also aware, the NTSB is not required to perform cost-benefit analysis of its safety recommendations.

Since its inception in 1967, the Safety Board has investigated more than 124,000 aviation accidents and over 10,000 surface transportation accidents. In so doing, it has become one of the world's premier accident investigation agencies. On call 24 hours a day, 365 days a year, NTSB investigators travel throughout the country and to every corner of the world to investigate significant accidents and develop factual records and safety recommendations.

Our final reports are a Safety Board product, not the opinion of any one individual at the NTSB. Our professional staff investigates the accidents and then provides a draft report to the five Presidentially appointed Members of the Board, who then review and vote on the report, the probable cause, and the safety recommendations.

The Safety Board has issued more than 12,000 recommendations in all transportation modes. In 1990, the NTSB began highlighting some issues on a Most Wanted list of safety improvements. Although the NTSB does not regulate transportation equipment, personnel or operations nor do we initiate enforcement actions, our reputation for impartiality and thoroughness has enabled the Board to achieve such success in shaping transportation safety improvements that more than 82 percent of its recommendations have been adopted by those in a position to effect change. Many safety features currently incorporated into airplanes, automobiles, trains, pipelines, and marine vessels had their genesis in NTSB recommendations.

I want to briefly describe the Board's investigations of the three firefighting air tanker accidents and the recommendations that resulted from those investigations.

The first accident occurred August 13, 1994, in Pearblossom, California, and three people were killed. While in level flight, the airplane's right wing separated. The Board's original probable cause was released in 1995. Based on evidence discovered in the 2002 investigation of a C-130 accident at Walker, California accident, the NTSB went back to the site of the Pearblossom accident to search for additional pieces of metal to examine. We took those pieces to our laboratory in Washington, D.C. Our laboratory examination of right side, center-wing fragments revealed two fatigue cracks that propagated to overstress fractures. One of the cracks was in the underside wing skin below a doubler, and the other was in the doubler itself. As a result, the Safety Board issued a revised probable cause in 2004.

The airplane had been retired from military service in 1986. At the time of the accident, the airplane had a total of 20,289 flight hours, 19,612 of which were acquired during its military service. Of note, the wing failure occurred after the plane accumulated only had 677 hours out of military service. The inspection and maintenance

nance programs used by the operator, which were based on military standards, included general visual inspections for cracks, but did not include enhanced or focused inspections of highly stressed areas, such as the wing sections, where the fatigue cracks that led to the accident were located. The operator did not possess the engineering expertise necessary to conduct studies and engineering analysis to define the stresses associated with the firefighting operating environment and to predict the effects of those stresses on the operational life of its airplanes.

The second accident occurred on June 17, 2002, in Walker, California, also killing three people. The airplane was making a fire retardant drop over a mountain drainage valley when the wings separated from the fuselage. Our metallurgical examination of the center wing box lower skin revealed a 12-inch-long fatigue crack on the lower surface of the right wing beneath the forward doubler. The portion of the wing skin containing the fatigue crack was covered by a manufacturer-installed doubler, which hid the crack from view and, therefore, prevented detection of the crack during a visual inspection of the exterior of the airplane.

The airplane retired from military service in 1978. At that time, it had accumulated about 19,545 hours in service. Additionally, the Air Force had replaced the wing center section shortly before it left military service. At the time of the accident, the aircraft had accumulated 21,863 hours in service. It is important to point out that the new wing center section failed after just more than 2,300 hours in firefighting service.

The third accident occurred on July 18, 2002, in Estes Park, Colorado, and claimed two lives. The airplane was maneuvering to deliver fire retardant when its left wing separated and the airplane crashed into mountainous terrain. Our examination revealed extensive areas of preexisting fatigue in the left wing's forward spar lower spar cap, the adjacent spar web, and the adjacent area of the lower wing skin. The portion of the wing containing the fatigue crack was obscured by the retardant tanks and was not detectable during an exterior visual inspection.

The airplane was in military service until 1956. It was not designed to be operated as a firefighting airplane. However, in 1958, the airplane was converted to civilian use as an air tanker and served in that capacity until the time of the accident. The investigation revealed that the owner developed service and inspection procedures for the air tanker; however, those the procedures did not adequately describe where and how to inspect for critical fatigue cracks. The procedures were based on U.S. Navy PB4Y-2 airplane structural repair manuals that had not been revised since 1948.

Many of these large air tankers are surplus military aircraft and some were built shortly after World War II. From the beginning of the investigations, it was understood that these aircraft were investigated in the category of public (as distinguished from civil) operations, and therefore, were not required by the Federal Aviation Administration (FAA) to comply with many of the Federal aviation regulations codified in 14 *Code of Federal Regulations* (CFR). For example, regulations pertaining to aircraft certification and maintenance and flight crew training and licensing are not applicable to public operations. Additionally, aircraft used in public operations are not required to be equipped with flight data or cockpit voice recorders. Therefore, the operator, in this case the U.S. Department of Agriculture (USDA) Forest Service, is primarily responsible for their safe operation.

The aircraft have been issued restricted-category type and airworthiness certificates from the FAA. However, we must be clear as to what this means. The requirements for issuance of a restricted-category type certificate to surplus military aircraft are contained in 14 CFR 21.25(a) (2) and state, in part:

- (a) An applicant is entitled to a type certificate for an aircraft in the restricted category for special purpose operations if he shows . . . that no feature or characteristic of the aircraft makes it unsafe when it is operated under the limitations prescribed for its *intended* use, and that the aircraft—
- (2) Is of a type that has been manufactured in accordance with the requirements of and accepted for use by, an Armed Force of the United States and has been later modified for a special purpose.

According to the FAA in a letter dated November 15, 2002, from Ronald T. Wojnar, Deputy Director, FAA Aircraft Certification Service, to Tony Kern, USDA Forest Service National Aviation Officer (attached for the record):

FAA-restricted type design certification of these surplus military aircraft is primarily based on military records and service history, unlike certification of normal or transport-category aircraft, which must be certificated to applicable FAA airworthiness standards (*e.g.*, 14 CFR Part 23 or Part 25).

Because these aircraft do not meet standard-category airworthiness standards, they have numerous restrictions placed on them. These restrictions are implemented through the operating limitations attached to the airworthiness certificate, as well as the operating limitations in 14 CFR. Significantly, the operating restrictions contained in restricted-category airworthiness and type certificates of surplus military aircraft typically do not include any enhanced maintenance requirements beyond those that applied when the aircraft left military service.

As is the case with all of our investigations, open discussions were held with the parties involved. The Safety Board worked closely with the aviation personnel from the Forest Service (FS), DOI, Interior and the FAA from the early stages of the Walker and Estes Park investigations through the final release of the accident report and the Safety Board's recommendation letter. Early in the investigation (within the first month or so) it became evident that there were serious issues concerning the airworthiness of these airplanes and the oversight to ensure their safe operation. The Safety Board staff was well aware that corrective actions needed to be initiated immediately. As the NTSB drafted its recommendations, we held biweekly meetings and teleconferences with the FAA and the FS to share our concerns and our proposed recommendations with them. All told, the Safety Board has spent hundreds of hours and participated in dozens of meetings or telephone calls with members of FAA, FS, and DOI on this topic.

The Safety Board also met with the Blue Ribbon committee several times during the course of its investigation. The Commission's report parallels the NTSB's safety recommendations. The Safety Board also briefed the General Services Administration's (GSA) Interagency Committee for Aviation Policy (ICAP), which advises GSA on the technical and operational issues related to aviation management, to ensure that the issues and concerns we had would be used to foster safe, effective, and efficient aviation in other U.S. government agencies. The Safety Board is a member of ICAP.

The Safety Board's investigation of these three specific accidents focused on airworthiness and maintenance issues associated with the large air tankers. However, because all aircraft engaged in firefighting operations are exposed to the same harsh environment and increased stresses and are likely operating outside the manufacturers' original design intent, the NTSB report noted that the deficiencies identified may well apply to all aircraft in the firefighting fleet. Frequent and aggressive low-level maneuvers with high acceleration loads and high levels of atmospheric turbulence are an inherent part of firefighting operations. A 1974 report by the National Aeronautics and Space Administration (NASA) noted that "... Because the maneuver loading, in both the repeated and high magnitude applications, is so severe relative to the design loads, shortening of the structural life of the aircraft should be expected." Similar findings were included in a November 1996 Supplemental Structural Inspection Document issued to Conair, a Canadian manufacturer and operator of firefighting aircraft.

We did not inspect all aircraft in the firefighting fleet, nor did we investigate all companies involved in aircraft firefighting. However, the safety issues identified in these investigations are present in some, if not all, other large air tanker operations. Thus, the NTSB safety recommendations that result from those accidents are applicable to the entire large air tanker industry. In order to meet the intent of these recommendations, that is assessing the structural integrity of the tankers, the owners and operators must have in place the appropriate programs and personnel. It is for the operator, in this case, the U.S. Forest Service, to determine that the recommendations have been accomplished. An example of safety recommendations being applicable to the broader industry is shown in the 1996 TWA flight 800 accident. The airplane exploded off the coast of Long Island, killing 230 people. The NTSB did not investigate all manufacturers of large aircraft, but the recommendation to inert the center wing fuel tank was aimed at all transport category aircraft.

In the NTSB air tanker investigation, the Board found that no effective mechanism currently exists to ensure the continuing airworthiness of firefighting aircraft. Specifically, the maintenance and inspection programs being used do not adequately account for the increased safety risks to which these aircraft are being exposed as a result of their advanced age and the severe stresses of the firefighting operating environment. In the case here of the air tankers, the NTSB did not need to look at more operators/aircraft. Our report concluded that there are no adequate standards and oversight programs for heavy firefighting aircraft either in the FAA or the DOI. No one appears to dispute that finding. Indeed, responsible private operators concur in the judgment that all firefighting aircraft should be maintained in accordance with specialized procedures that take into account the age and operating environment of the aircraft. What the NTSB has recommended is that the Federal standards for this need to be established and once again responsible operators are

awaiting the establishment of such standards premised on an in-flight monitoring program—the heart of such an inspection program.

The primary purpose of aircraft maintenance programs is to ensure the aircraft is airworthy, that is, in safe condition and properly maintained for its *intended operation*. Historically, service experience has demonstrated that it is essential to have regularly updated knowledge concerning the structural integrity of the airframe. In the case of air tankers, the structural integrity of the airplanes is of particular concern, because factors such as fatigue and corrosion tend to manifest themselves over time as the aircraft age. Accordingly, owners and operators must be aware that because the airplane is being used in a manner significantly different from its originally intended mission profile, they must maintain and inspect these aircraft in accordance with a program that is continuously evaluated and updated based on technical and engineering support and the manufacturer's knowledge of in-service experience.

However, for many aircraft used in firefighting operations, very little, if any, ongoing technical and engineering support is available because either the manufacturer no longer exists or does not support the airplane, or the military no longer operates that type of aircraft. Further, the current operators of these firefighting aircraft are typically unable to structure a maintenance program that accounts for the new mission profile because: (1) the airplane's design and service life information (such as service reports and maintenance data) is not readily available; (2) the operator lacks the necessary engineering expertise; (3) the magnitude of maneuver loading and level of turbulence in the firefighting environment is not defined; and (4) the effects of this operating environment on the service life of the aircraft structure are undefined.

Currently, there is not sufficient data to make engineering decisions or conduct engineering studies or modeling. A minimum amount of loads data is just becoming available. In some cases there may be no inspection techniques that can identify some of the hidden damage that we have found on the airplanes. We are not aware of any current Original Equipment Manufacturer (OEM) support for these airplanes that is sophisticated enough to be effective. We know some of the history of some of these planes because they came from the military, but we do not have the type of structural load history that would define the structural health when they entered firefighting service. We certainly do not know the history while in firefighting service. We need to be able to predict the problem, preclude the problem, and short of that, find the problem before there is a structural failure. These require more sophistication than we believe is being applied.

In order to ensure that there is a robust oversight and inspection infrastructure that will ensure the safe operation of aircraft used in firefighting operations, the NTSB recommended that the USDA and the Department of Interior (DOI) develop maintenance and inspection programs for aircraft used in firefighting operations that take into account five specific factors require that aircraft in firefighting operations be maintained in accordance with those programs; and hire appropriate personnel to conduct oversight of those programs. In addition, because some of these public use aircraft might be used for civil use at other times, we recommended that the FAA require the same maintenance and inspection programs. We also recommended that the FAA serve as the focal point for collecting continuing airworthiness data about surplus military aircraft from the OEM or military in order to share that with subsequent owners and operators.

Our recommendations apply to any airframe, regardless of age. Whether an old airplane, a new airplane, or an airplane still being designed, the recommendation to have a maintenance and inspection program is the same. However, we are not locked into a rigid format for a solution. There may be many processes that can be used to prevent or predict these types of accidents. They can take on many forms, and we are happy to see any that work.

We noticed that in March 2004, the industry's Consortium for Aerial Firefighting Evolution (CAFE) released the Strategic Aerial Firefighting Excellence (SAFE) report. The conclusion contains the parallel to the Safety Board's finding. The report "focuses on mapping a course that will ensure the ongoing safe and economic utilization of both the current and future aerial firefighting fleets for many years to come." However, the CAFE also concludes that "the load environment in which the current and future aerial firefighting fleet remains largely unknown. Until this environment is adequately characterized, there is an unknown level of risk that unanticipated in-flight structural failures may occur in both the current and future operational fleets."

Furthermore, the industry SAFE report states: "Many of the aircraft operating in the aerial firefighting role are not well supported by their Original Equipment Manufacturers (OEMs). This is often a result of the OEMs no longer being in business

or wishing to avoid economic/liability issues associated with operating a limited number of aircraft in a severe role, for which they were not originally designed. For this reason, every attempt should be made to procure the original design/modification engineering data for future aerial firefighting aircraft."

"The original design of most of these aircraft assumed that their primary mode of operation would be take-off, climb to altitude (typically from 14,000–30,000 ft ASL), cruise at altitude, descend and land. Consequently, their continuous use in a low-level environment (defined as less than 2,500 ft AGL) during aerial firefighting operations is quite different from the passenger/cargo role for which they were primarily designed. As has been documented on many occasions, aircraft performing any role in a low-level environment are subject to a far more severe loads environment as a result of a significant increase in frequency and, on occasion magnitude, of the gust and maneuvers load spectra they experience. In the case of aerial firefighting aircraft, the severity of the low-level environment is further exacerbated by the increased turbulence that is frequently encountered near the fire. Continued operation in this type of environment can result in either an increased frequency of known structural problems and/or the occurrence of structural problems that have not been previously exhibited by similar aircraft operating in their original passenger/cargo design role. In past years, much emphasis has been placed on the high g-loads that have been recorded by aircraft operating in the aerial firefighting role. While the occurrence of such loads is obviously of some concern, there is a growing body of evidence to suggest that they are not the primary cause of the operational failures. Rather, the majority of the damage sustained by aerial firefighting aircraft structures appears to be attributable to cumulative effect of the large number of cyclic (fatigue) repetitions of relatively low-level (magnitude) loads to which the aircraft are subjected."

The industry's SAFE report concludes:

"There is a need to implement structural health monitoring programs on a large number, if not all, of the current air tankers. Data obtained from these programs will define criteria against which the suitability of future aerial firefighting aircraft can be evaluated prior to conversion and ensure the ongoing safe and economic management of the current fleet until such times as it can be replaced. While some steps were taken to address this issue during the 2003 fire season, to date only funding to support the limited FAA program has been assigned for the 2004 fire season. As far as CAFE is aware, the USDA/FS has so far allocated no funding to support structural health monitoring programs during the upcoming 2004 and subsequent fire seasons."

The Safety Board is also aware that the USDA began work with the Sandia Laboratory to develop a maintenance and inspection program for firefighting aircraft. In addition, the Canadians have developed an extensive program to conduct appropriate inspections of these aircraft. However, neither the nascent USDA nor the mature Canadian programs are currently in place at in the United States.

The National Transportation Safety Board recognizes that aerial firefighting is an intrinsically high-risk operation. However, the risk of in-flight structural failure should not be considered an unavoidable risk of firefighting. This increased risk of fatigue cracking and accelerated crack propagation can and should be addressed through proper maintenance programs.

Again, thank you for the opportunity to testify today on these important safety matters. I will be happy to answer any questions that you might have.

The CHAIRMAN. Thank you very much.

Mr. Sabatini, I welcome you and I amend my previous remarks. Both the FAA and the NTSB are the people we rely on to give us the information that we need concerning aviation safety, and I apologize for leaving you out. Mr. Sabatini, welcome.

**STATEMENT OF NICHOLAS A. SABATINI, ASSOCIATE
ADMINISTRATOR, REGULATION AND CERTIFICATION,
FEDERAL AVIATION ADMINISTRATION**

Mr. SABATINI. Thank you.

Good morning, Mr. Chairman, members of the Committee.

Senator BURNS. You might want to pull that microphone up a little bit closer. Thank you.

Mr. SABATINI. You are welcome.

My name is Nick Sabatini. I am the Associate Administrator for Regulation and Certification in the FAA. I am pleased to appear before you today to discuss the respective roles that the FAA, the Forest Service, and the Department of the Interior play in the safety oversight of Forest Service and DOI firefighting operations.

Recent decisions by the Forest Service and DOI to terminate contracts with companies that operate airtankers followed NTSB recommendations that arose out of investigations of fatal air tanker accidents. Because the decisions to terminate the contracts were safety-related, a clarification as to why the Forest Service and DOI and not the FAA are making safety determinations with respect to these aircraft is appropriate.

The heart of this issue is the safety and airworthiness of aircraft, and so I understand why people believe that only the FAA should make such determinations. We are the premier aviation safety oversight agency in the world and I am proud of our record and reputation. But from the very beginning and at all times during the existence of the FAA, there has been a clear statutory distinction between civil and public aircraft operations. FAA has regulatory and safety oversight authority over civil aircraft operations. Public aircraft operations are conducted by or on behalf of many different government agencies and departments, both State and Federal.

By statute, authority for the safety oversight of these operations belongs to the agency or department responsible for the operation. While FAA can and does provide technical support to assist other agencies with their safety oversight responsibilities, the law is quite clear that FAA cannot direct or compel another agency to impose specific safety requirements or force them to meet existing FAA requirements for the civil aircraft fleet.

Over the years, Congress has narrowed and clarified the definition of "public aircraft." Today it is the type of operation that defines a public aircraft. Public aircraft operations are limited to only those operations that are inherently government in nature, such as firefighting, search and rescue, prisoner transport, and military operations, to name a few.

These government functions oftentimes involve dangerous missions and may require aircraft to be operated in a manner that is beyond what the FAA may consider to be safe for civil operations. It is one reason FAA regulations do not apply to them. The functions could not be performed effectively within the bounds of existing FAA regulations.

It is critical that you understand our statutory responsibilities and limitations in order to appreciate that we are not dismissing or in any way discounting the importance of aviation safety, regardless of whether the operation is civil or public. Whether or not FAA is primarily responsible for the safe operation of public aircraft, we know that our expertise in aviation safety is invaluable to other agencies in the development and implementation of safety standards and practices to oversee their public aircraft operations.

We have also been working with the Forest Service and DOI to help them define the firefighting environment and its effects on aircraft structure. In the civil arena, FAA has decades worth of infor-

mation detailing how the structure of an aircraft is affected by the different types of operation, which has enabled us to create maintenance and inspection programs that make our civil fleet the safest in the world.

There is little data with respect to firefighting operations, which require low-altitude operation in turbulent air with heavy loads. Understanding how and where this type of operation results in stresses on the airframe that may lead to fatigue and cracks will translate into the ability to develop maintenance and inspection programs that are appropriate for the firefighting environment. Realistically, it will take some time to obtain sufficient data to develop precise programs, but FAA will readily lend its expertise to help the Forest Service and DOI to refine the required programs as new information warrants.

Since early 2003, we have also advised the Forest Service and DOI large tanker airworthiness review program conducted by Sandia National Labs. The review evaluated the certification, maintenance, operation, and other aspects of aerial firefighting in order to improve the airworthiness of its airtankers following two in-flight structural failures in 2002. This advice was provided in the form of comments on Sandia's draft reports and was incorporated in Sandia's final recommendations to the Forest Service and DOI.

Finally, in response to significant Congressional concern expressed recently with respect to the Forest Service's and DOI's decisions to terminate airtanker contracts, yesterday FAA provided the Forest Service and DOI with broad criteria to establish the basis for an effective maintenance and inspection program for the firefighting environment. In addition, we provided guidance on the type of data the Forest Service and DOI should be obtaining and reviewing as part of their maintenance and inspection program. Finally, we provided to the Forest Service and DOI the names of FAA designees who could assist them with both immediate technical assistance and ongoing support.

Mr. Chairman, aviation safety is critical to the national interest regardless of the type of operation or who is responsible for its oversight. Firefighting is also of paramount importance to the safety and well-being of our country. I understand why Congress is so concerned that the Forest Service and DOI are able to meet the demands they face in the coming fire season. FAA is committed to assisting the Forest Service and DOI in any way we can to ensure that its firefighting operations are conducted as safely as possible, given the inherently dangerous environment in which the aircraft must operate.

While our statutory responsibilities limit our safety and regulatory oversight to the civil fleet, we appreciate that our technical expertise can be valuable to other agencies conducting public aircraft operations. Improving aviation safety is in everyone's best interests and FAA will continue to be dedicated to having the safest system in the world.

I will be happy to answer your questions at this time.
[The prepared statement of Mr. Sabatini follows:]

PREPARED STATEMENT OF NICHOLAS A. SABATINI, ASSOCIATE ADMINISTRATOR,
REGULATION AND CERTIFICATION, FEDERAL AVIATION ADMINISTRATION

Good morning Chairman McCain, Senator Hollings, Members of the Committee; My name is Nick Sabatini. I am the Associate Administrator for Regulation and Certification in the Federal Aviation Administration (FAA). I am pleased to appear before you today to discuss the respective roles the FAA, the Forest Service, and the Department of the Interior (DOI) play in the safety oversight of firefighting operations conducted on behalf of the Forest Service and the DOI. Recent decisions by the Forest Service and DOI to terminate contracts with companies that operate air tankers have resulted in 33 air tanker aircraft being unavailable for use this fire season. Because the decision to terminate the contracts was safety related, a clarification as to why the Forest Service and the DOI, and not the FAA, are making safety determinations with respect to these aircraft is appropriate.

Earlier this year, the National Transportation Safety Board (NTSB) issued recommendations that arose out of its investigation of two fatal aircraft accidents in 2002 in which fatigue cracking caused the wings on the aircraft to separate during flight. The aircraft were conducting firefighting operations on behalf of the Forest Service and the DOI at the time of the accidents. The NTSB recommendations, in conjunction with those of a Blue Ribbon Commission that also studied the accidents, led the Forest Service and the DOI to conclude that continued use of the aircraft tankers posed unacceptable safety risks. Consequently, the contracts were terminated and this action resulted in understandable concern about how not utilizing these aircraft would affect the ability of the Forest Service and the DOI to meet the challenges of this year's fire season.

Because the heart of this issue is the safety and airworthiness of aircraft, I understand why people believe that only the FAA should make such determinations. We are the premier aviation safety oversight agency in the world and I am proud of our record and reputation. But from the very beginning and at all times during the existence of the FAA, there has been a clear statutory distinction between civil and public aircraft operations. FAA has regulatory and oversight authority over civil aircraft operations. Public aircraft operations are conducted by or on behalf of many different government agencies and departments, including state and federal, from the Forest Service and the DOI, to the Justice Department to the U.S. military. By statute, authority for the safety oversight of these operations belongs to the agency or department responsible for the operation. While FAA can and does provide technical support to assist other agencies with their safety oversight responsibilities, the law is quite clear that FAA cannot direct or compel another agency to impose specific safety requirements or force them to meet existing FAA requirements.

Over the years, the definition of what is a public aircraft operation has changed. In response to the death of the governor of South Dakota in an accident involving a public aircraft flight, Congress narrowed what could be considered a public aircraft operation in order to impose FAA regulatory standards on a greater number of operations. Until the statutory change in 1994, an aircraft was largely used as a civil aircraft or public aircraft throughout its life. Since 1994, the function of the operation defines whether it is civil or public. Using the example of the governor, when his flight crashed, it was a public aircraft operation merely because it was being operated by the state of South Dakota. Congress felt that transporting the governor from point A to point B was not an inherently governmental function; in other words, that there was no reason that the flight could not be performed by a civil aircraft meeting FAA standards. As a result, the law was changed and today, public aircraft operations are limited to only those operations that are inherently governmental in nature, such as firefighting, search and rescue, prisoner transport, and military operations to name a few. These government functions may require aircraft to be operated in a manner that is beyond what the FAA may consider to be safe for civil operations. It is one reason FAA regulations do not apply to them; the functions could not be performed effectively within the bounds of existing FAA regulations.

Another issue central to today's hearing is surplus military aircraft. Although many public aircraft operations, including firefighting, could be performed using FAA certificated aircraft, many operators use aircraft that have been retired by the military. The aircraft that crashed in 2002 were both former military aircraft. From FAA's perspective, the difference between other FAA certificated aircraft and a surplus military aircraft is significant. An FAA certificated aircraft holds two certificates for each aircraft. The first is a type certificate that certifies that the aircraft design meets specified FAA safety standards. This certificate would be issued for each aircraft type, such as a Boeing 777 or an Airbus A320. For each individual aircraft, the FAA issues an airworthiness certificate that certifies that the specific air-

craft conforms to the approved design. Before each civil aircraft operation, the operator must confirm that the aircraft is in airworthy condition and must operate it within limitations" prescribed by its type certificate.

Military aircraft are not required to meet FAA design standards or to receive an FAA type certificate. During their operation in the military, the operation and maintenance of these aircraft do not necessarily conform to FAA standards. Therefore, when the military wants to surplus them, FAA is not in a position to confirm that the aircraft are fit for civil operation. However, surplus military aircraft offer an affordable option for performing specific governmental functions, especially if the operations adhere to defined limitations. A non-military state or Federal agency with a surplus military aircraft can apply to the FAA for a restricted category type certificate. Similarly, if a private Part 137 operator (an entity holding a certificate for agricultural operations) has surplus military aircraft, they could also apply to the FAA for a restricted category certificate. (Part 137 of the Federal Aviation Regulations specifies that, in a public emergency, a person operating under this part may deviate from the regulatory requirements for relief and welfare activities approved by an agency of the United States or a state or local government. This enables Part 137 operators to be compensated for conducting public aircraft operations on behalf of a government entity.)

FAA reviews the information submitted with each application. Although the amount and type of information the FAA is provided varies from aircraft to aircraft, we look at what the aircraft was used for in the military, its maintenance records, its service history, its modification records, and the purpose for which the aircraft is expected to be used. We also inspect the aircraft. Based on our evaluation, FAA may issue a restricted category type certificate. The issuance of the certificate is based on the fact that the aircraft had been acceptable to the U.S. military and that the military was satisfied with its operation and with the maintenance performed on it. The requirements for continuing airworthiness are generally based on using the military maintenance and inspection manuals that accompany the aircraft. The type certificate sets forth specific limitations designed to minimize the risk of operating the aircraft. The limitations include, for example, that the aircraft cannot be operated over populated areas, that it cannot carry passengers or cargo, and that it cannot be operated in another country without permission of that country. The certificate would also restrict the type of operation the aircraft could perform to that which the agency had reviewed. In other words, an aircraft approved only to conduct agricultural operations could not also be used for weather control operations. The operational approval is very limited. Once an aircraft receives a restricted category type certificate, the operator has an ongoing responsibility to ensure that the aircraft continues to conform to the certificate and is in a condition for safe operation, much as is the case with civil aircraft operations. The difference is that with a public aircraft operation, ensuring that the operator is meeting the safety standards falls to the agency on whose behalf the operation is being conducted, not the FAA.

It is critical that you understand our statutory responsibilities and limitations in order to appreciate that we are not dismissing or in any way discounting the importance of aviation safety regardless of whether the operation is civil or public. Whether or not FAA is primarily responsible for the safe operation of public aircraft, we know that our expertise in aviation safety is invaluable to other agencies in the development and implementation of safety standards and practices to oversee their public aircraft operations.

We have been working with the Forest Service and the DOI to help them define the firefighting environment and its effects on aircraft structure. In the civil arena, FAA has decades worth of information detailing how the structure of an aircraft is affected by different types of operation. This information has enabled the FAA to create maintenance and inspection programs that make our civil fleet the safest in the world. There is little data with respect to firefighting operations, which require low altitude operation in turbulent air with heavy loads. Understanding how and where this type of operation results in stresses on the airframe that may lead to fatigue and cracks will translate into the ability to develop maintenance and inspection programs that are appropriate for the firefighting environment. Realistically, it will take some time to obtain sufficient data to develop precise programs, but FAA will readily lend its expertise to help the Forest Service and the DOI to refine the required programs as new information warrants.

Since early 2003, the FAA has advised the Forest Service and the DOI large air tanker airworthiness review program, conducted by Sandia National Labs. The review evaluated the certification, maintenance, operation and other aspects of aerial firefighting in order to improve the airworthiness of its air tankers following two in-flight structural failures in 2002. This advice was provided in the form of com-

ments on Sandia's draft reports, and was incorporated into Sandia's final recommendations to the Forest Service and the DOI.

FAA has also identified specific aircraft certification offices (ACOs) as focal points for some restricted category aircraft. For example, the Atlanta ACO is designated as the focal point for the Lockheed C-130A. The Los Angeles ACO is designated as the focal point for Lockheed P2V as well as the Douglas military variants. The Forest Service and the DOI or any other federal, state or local entity may utilize these resources to access technical assistance to improve their safety oversight.

Finally, in response to the significant Congressional concern expressed recently with respect to the Forest Service's and the DOI's decisions to terminate their air tanker contracts, FAA committed to immediately provide to the Forest Service and the DOI broad criteria to establish the basis for an effective maintenance and inspection program for the firefighting environment. In addition, we will provide guidance on the type of data the Forest Service and the DOI should be obtaining and reviewing as part of their maintenance and inspection program. And finally, we will provide to the Forest Service and the DOI the names of FAA designees who could assist them with both immediate technical assistance and ongoing support.

Mr. Chairman, aviation safety is critical to the national interest regardless of the type of operation or who is responsible for its oversight. Firefighting is also of paramount importance to the safety and well being of our country and I understand why Congress is so concerned that the Forest Service and the DOI are able to meet the demands they face in the coming fire season. FAA is committed to assisting the Forest Service and the DOI in any way we can to ensure that its firefighting operations are conducted as safely as possible, given the inherently dangerous environment in which the aircraft must operate. While our statutory responsibilities limit our safety and regulatory oversight to the civil fleet, we appreciate that our technical expertise can be valuable to other agencies conducting public aircraft operations. Improving aviation safety is in everyone's best interest and FAA will continue to be dedicated to having the safest system in the world.

This concludes my prepared remarks. I will be happy to answer your questions at this time.

The CHAIRMAN. Thank you.

Mr. Rey, welcome.

**STATEMENT OF MARK E. REY, UNDER SECRETARY FOR
NATURAL RESOURCES AND ENVIRONMENT,
U.S. DEPARTMENT OF AGRICULTURE**

Mr. REY. Thank you, Mr. Chairman. I would like to submit my statement on behalf of the Department and the Department of the Interior for the record in its entirety.

The CHAIRMAN. Without objection.

Mr. REY. And I will just summarize briefly how we got to this point and what our plans are in going forward from here. I think your opening statement, Mr. Chairman, accurately summarized the history of how we got to this point. Essentially, after the fatalities in 2002, with the advice of a Blue Ribbon Commission chartered by the Chief of the Forest Service and the Director of the Bureau of Land Management and the expertise of the Federal Aviation Administration, we contracted with Sandia Laboratories to develop a more robust inspection and maintenance program and to modify the operations of our large airtanker contract fleet.

We were hopeful that, as we knew that an ongoing NTSB investigation was under way, that the measures that we were taking would be adequate to assure the safety of the fleet and to continue its operation. On April 23 of this year, we received the final NTSB report, which indicated that for the fleet as a whole there was no way to assure the airworthiness of the aircraft. Faced with that report and the pendency of the upcoming fire season, we had essentially one decision and in my view one decision only to make, and that decision is this: In the face of the availability of alternative

aircraft which were demonstrably safer, would a prudent person continue to fly these airtankers? We concluded, given the risks associated with airtanker crashes and fatalities, the answer to that question is no.

That set us on a very quick march program to secure alternative aircraft and reconfigure our firefighting aircraft fleet. That effort was completed yesterday and provided to the Committee last night. We will be retaining the contracted assistance of up to 46 single-engine airtankers, 21 type-1 heavy lift helicopters, 45 type-2 medium helicopters, 2 CL-215 airtankers, and in addition taking over the season-long use of 8 U.S. military C-130 aircraft equipped with modular airborne firefighting systems.

Those aircraft are presently being contracted for. Some have already been contracted for and are in the process of being deployed. Some have already been deployed.

The single policy objective that drove the reconfiguration of the fleet and the contracting of replacement aircraft was this: Over the last several years, the Forest Service and the Department of the Interior have enjoyed effectiveness at initial attack for wildfires of suppressing nearly 99 percent of ignitions at initial attack. The direction that we gave to the aerial experts in the Forest Service and the BLM was to reconfigure the fleet with adequate replacement aircraft to maintain that level of effectiveness at initial attack.

In a memo to the chief of the Forest Service, the director of fire and aviation management in announcing the reconfigured fleet stated yesterday: "This plan was developed with an objective to maintain near-99 percent initial and extended initial attack success rates. I believe the plan will accomplish this objective."

So those are the new aircraft that have been contracted and are being contracted for. The fleet will be larger as we will be using different models of aircraft to fill the role of the airtankers, and it will be deployed differently to account for the different delivery times that different makes of aircraft, models of aircraft, also provide for. But it is our judgment that it will be equally effective as the fleet was last year in assisting us in achieving the near-99 percent initial attack success rate.

So the decision was made at the beginning of the fire season, at a time when there was not a great deal of time to dally. It was not made lightly because the large airtankers have served us gallantly and valiantly over a large number of years. But it was made with the certainty that if we lost one of the large airtankers in the wildland-urban interface, in a subdivision, in a school, that we would be here having a quite different hearing that would not be very pleasant, and I am not assuming this hearing is going to be very pleasant.

Now, all that having been said, some Members of Congress and other elected officials have raised the good and fair question: Why not give the large airtanker fleet a chance to show that they can demonstrate airworthiness, and if they can then return them to service and save some money in the process, since they are more cost-effective than the alternative aircraft that we are contracting to take their place?

That seemed like a fair approach. So, again with FAA's expert assistance, we have over the last 2 weeks developed baseline cri-

teria and a profile for the contractors to provide information to us with FAA's assistance, to assess whether the information necessary to assure their airworthiness can be secured and evaluated properly. Today each of the eight affected contractors will be receiving a letter from the Chief of the Forest Service and the Director of the Bureau of Land Management asking them to provide that information if they so choose, and the information will be used by the Forest Service and Department of the Interior and FAA-certified engineering representatives to evaluate whether we can assure the airworthiness of part or all of the fleet.

If we believe, in our combined expertise, that we can, then we will be submitting that information to NTSB to see if we can get a further evaluation and a modification of their recommendations. We are doing that, not because we lack confidence in the reconfigured fleet that we are contracting for, but because it seems an equitable thing to do and also raises the possibility that if some portion of the large air tanker fleet can be restored to service we can do the firefighting job equally well at less cost to the public and with less taxpayer dollars being expended.

Let me close with just a quick summary of the difference between the perception of the use of large air tankers and the reality of the use of large airtankers. The perception is that large airtankers extinguish big forest fires. That perception is not correct. Large airtankers have their greatest use to us in the firefighting mission on initial attack and extended initial attack in fires where on-the-ground access is a problem. They are good for initial attack to try to extinguish a fire where we cannot get a crew in easily—either a ground crew or an engine crew. They are useful to us on extended initial attack to drop retardant to slow down a fire front where we are trying to build a perimeter around it and where nothing within that perimeter is anything that we want to try to save. But those are their two primary missions, and we believe those missions can be filled by the reconfigured fleet.

As the Chairman's opening statement correctly noted, last year only somewhat less than 20 percent of the total water and retardant that we used was dropped by large multi-engine airtankers. We also reduced the hours of the large airtankers as part of the Sandia protocol by about 42 percent. So they are a useful part of our fleet, without question. They are a very cost-effective part of our fleet. But they are not an essential part of our fleet to maintain firefighting effectiveness and public safety.

Thank you very much.

[The prepared statement of Mr. Rey follows:]

PREPARED STATEMENT OF MARK E. REY, UNDER SECRETARY FOR NATURAL RESOURCES AND ENVIRONMENT, U.S. DEPARTMENT OF AGRICULTURE AND P. LYNN SCARLETT, ASSISTANT SECRETARY FOR POLICY, MANAGEMENT, AND BUDGET, UNITED STATES DEPARTMENT OF THE INTERIOR

Introduction

Mr. Chairman and members of the Committee, thank you for the opportunity to discuss, on behalf of the Department of Agriculture and the Department of the Interior, the recent termination of contracts for 33 large air tankers used for firefighting due to concerns over their airworthiness.

Our decision to terminate the contracts was ultimately based on the unacceptable safety record of these large air tankers that has resulted in multiple aviators deaths from airworthiness failures. The land management agencies are responsible for the

safety of aviators, firefighters, and the public during firefighting operations and based upon the recommendations of the National Transportation Safety Board (NTSB), there was no other alternative. At the same time, I want to stress that our ability to fight wildfires and protect communities continues at a high level. The reduction of 33 air tankers from our fleet of hundreds of aircraft changes, but in no way diminishes, our firefighting efforts.

Airworthiness

On May 10, 2004, the Forest Service and the Bureau of Land Management terminated the contracts for 33 large air tankers due to concerns presented in the NTSB Safety Recommendations about the airworthiness of the aircraft and public safety. The large fixed winged air tankers were used in wildland firefighting to drop fire retardant primarily at the beginnings of fires (known as initial attack). Private companies operated the 33 air tankers during the fire season under contracts with the Federal agencies.

The decision to cancel the contracts was based on a series of events and the cumulative findings of two reports: (1) the Blue Ribbon panel of aviation experts which issued its findings in December 2002; and, (2) the April 23, 2004 National Transportation Safety Board (NTSB) report on three air tanker accidents.

The Blue Ribbon Panel cited numerous concerns with the reliability of the large air tankers, composed of aging retired surplus military aircraft. These reliability issues presented safety concerns, as well as operational problems. For a time, the Forest Service and Bureau of Land Management thought they could work through these concerns, following the Panel's recommendations for a more robust inspection and maintenance program, and relying on the efforts of the aircraft owners and the Federal Aviation Administration certification process for private use.

The report of the NTSB validated the Blue Ribbon panel but added critical findings that led us to conclude we could not continue to use these aircraft under the current circumstances. One critical finding of the NTSB report states ". . . no effective mechanism currently exists to ensure the continuing airworthiness of these firefighting aircraft."

Since most of the large air tankers were designed and used for military operations before their acquisition by contract companies, the NTSB recommendations also indicated that a complete history, including maintenance and inspection records, is not available for many of the air tankers. The average age of the large air tankers is 48 years with some tankers more than 60 years of age. There is a lack of baseline data to determine the level of stress placed on the airframes during firefighting. Further, there is missing documentation for some airplanes about their previous missions flown, and what additional stresses those flights might have put on the structure of the aircraft. Time has caught up with this program and with the air tankers. Since the NTSB identified the Forest Service and Department of the Interior as the agencies responsible for the safety of these aircraft, it was time to make this decision.

Since 1958, more than 130 large air tanker crew members have died. The Blue Ribbon Panel reported that, if ground firefighters had the same fatality rate, this would equal more than 200 on-the-job deaths per year. This is totally unacceptable. The Chief of the Forest Service and the Director of the Bureau of Land Management terminated the air tanker contracts because the risk to aviators' lives is too great and because alternative aircraft are available. We could not continue to use these aircraft, putting aviators and ground firefighters at risk for more catastrophic accidents when we don't have enough data or the ability to confidently assess the risk, nor a program in place to mitigate the risk. We could not subject the same communities we are trying to protect from wildfire to the additional risk of an air tanker breaking apart over homes in the wildland urban interface.

Firefighting Operations

There is a widespread perception that we can drown a wildland fire if we drop enough water and retardant, and that without the large air tankers, homes and forests are at greater risk. We need to be clear—wildfires are put out on the ground. The large air tankers were useful in the initial attack of fires. However, they were only one of the tools fire managers use in deciding how to fight fire safely. Fire retardants are chemicals that impede the progress of wildfire, but do not stop it. Fire retardants slow the fire's growth and rate of spread to give ground forces more time to complete suppression actions. Those ground forces are the key—firefighters put out fires, not air tankers.

Moreover, even though air support is a valuable tool, it extends beyond large air tankers. It includes helicopters and Single Engine Air Tankers (SEATS). Fire intensity levels, determined by factors like wind speed, rate of fire spread, and smoke

inversions, determine if aircraft may or may not be the right tool to slow a wildfire. At lower fire intensities, aerial support generally is not needed and at high fire intensity, fire retardant is not useful. Aviation assets are also affected by weather conditions. There were several days during the California fires that aircraft could not fly because of wind conditions and the associated turbulence in the air over wildland fires.

Over the past few years, we have gradually increased the use of helicopters in firefighting support. The fixed wing air tanker fleet was actually only delivering about 20 percent of all suppressants, including retardant, foam and water. Although fixed wing aircraft can often arrive faster, travel faster, and carry more to a fire, they are limited by the maneuverability limits over mountainous terrain, and proximity of a suitable and secure airport with reload facilities. In many ways, the smaller aircraft and helicopters provide increased flexibility in their use than the larger tankers.

We have the best trained and best equipped Federal wildland firefighting forces in the world, and our state and local firefighting partners make us even stronger. Tens of thousands of initial attack efforts are successful every year without any aerial support from large air tankers. In fact, approximately 98 percent of all fires targeted are suppressed upon initial attack. Firefighters know how to set protection priorities and employ strategies and tactics to be safe and successful in suppressing the wildland fire.

Operations for 2004

Firefighting resources are coordinated at the national level by the National Multi-agency Coordination group at the National Interagency Fire Center in Boise, Idaho. The group is made up of Federal agencies and the National Association of State Foresters. Eleven geographic area coordination centers provided information on anticipated needs for the 2004 fire season. The information was developed into the 2004 strategy that addresses the initial and extended attack needs for the Nation. This plan will be reviewed and modified on a bi-monthly basis or as the severity of the fire season dictates.

We are currently activating all of our aircraft so they are prepared to assist the ground firefighters. Helicopters and single engine air tankers are pre-positioned throughout the country based on intelligence regarding drought, anticipated weather conditions and expected fire activity. The National Interagency Coordination Center will continue to move aerial assets as needed through this summer's fire season to support the ground firefighters.

Through new contracts, we have increased our fleet of other aerial firefighting support assets in order to reduce the impact of the loss of the large airtankers. Contracts are being negotiated to add large helitankers, which can deliver up to 2,000 gallons of retardant and large helicopters with buckets, which can deliver up to 1,000 gallons of retardant. Details are being finalized for the short term plan to maintain our success rate suppressing wildfires at initial attack.

Questions have been raised about the use of the large air tankers by the states. The National Multi-agency Coordination group has issued guidance on the use of aviation assets. State contracted large air tankers will be used on Federal lands where states have formal protection responsibility and are in operational control of the fire. No Federal personnel may be assigned as state contract officers on an unauthorized tanker, nor may any Federal employee be assigned to a position to exercise operational control of an unauthorized tanker.

We have been working with the FAA to develop a protocol for assuring airworthiness of the firefighting craft, and their testimony today reflects our mutual intent in that regard. We are also engaged with the FAA in developing criteria to review the airworthiness of the 33 air tankers that were the subject of the terminated contracts. We expect to finalize a process in the next couple of days, and will share that with the Congress as soon as possible.

The Administration recognizes the need for a long term strategy for firefighting operations, integrated with the overall operations of the affected agencies, and we are working to develop that long term plan. We are currently conducting an evaluation of the cost effectiveness of aviation resources, including tradeoffs between different types of resources, and we expect to incorporate the results of that study as the long term strategy is developed.

Summary

We appreciate the work of the members of the Blue Ribbon Panel, the NTSB, the FAA, and Congress to help us deal with this issue. This will be a challenging fire year, but not because of the absence of airtankers. With the drought, too much fuel on our forests and rangelands, and the expanding wildland urban interface, fires

will continue to be tough to suppress. Where appropriate, we will manage wildland fires for resource benefits including fuel reduction, and suppress wildfires that present a danger to lives and property.

During the past several years, we have limped along with an aging air tanker fleet by reducing delivery capabilities, restricting flight hours and pouring tax dollars into enhancing maintenance and inspection programs. Continuing to pay more for less capability in a fleet of unknown airworthiness is a doomed strategy, poor public policy, and bad stewardship of taxpayer dollars. Safety is the most important value of the firefighting community. To continue to use these large air tankers when no mechanism exists to guarantee their airworthiness presents an unacceptable level of risk to aviators, to the firefighters on the ground, and to the communities we serve.

Thank you for the opportunity to testify today on this important safety matter. I am happy to answer any questions you might have.

The CHAIRMAN. Thank you.
Mr. Timmons.

**STATEMENT OF MARK TIMMONS, PRESIDENT, NEPTUNE
AVIATION SERVICES, MISSOULA INTERNATIONAL AIRPORT**

Mr. TIMMONS. Mr. Chairman, I want to thank you for the honor of testifying before this committee and I would like to submit my testimony for the permanent record.

The CHAIRMAN. Without objection.

Mr. TIMMONS. I have two formal documents: one from Doug Herlihy, an independent forensic aircraft investigator who is a former lead investigator for the NTSB; the second one is Ron Livingston, a contractor hired by the U.S. Forest Service to oversee airworthiness programs for the U.S. Forest Service. I would like both of these documents to be part of the record.

The CHAIRMAN. Without objection.
[The material referred to follows:]

**STATEMENT OF DOUGLAS R. HERLIHY, AIR SAFETY INVESTIGATOR,
HERLIHY & LEONARD**

ARE WE READY FOR THE 2004 WILDFIRE SEASON

Mr. Chairman and Members:

I am a forensic aircraft accident reconstructionist, an instructor in aviation safety at the University of Southern California, and formerly an Operations Group Chairman with the National Transportation Safety Board National Go-Team. Prior to employment with the NTSB, I served as Chief, Search and Rescue Branch of the United States Coast Guard, Atlantic Area and a rescue aircraft commander with 20 years of USCG service. I hold an FAA Airline Transport Certificate with type-ratings in large aircraft including the Lockheed C130, and have approximately 17,000 pilot-in-command hours.

As a forensic aircraft accident investigator and reconstructionist since 1994, I have investigated, submitted to courts, and published reports on a number of aviation accidents occurring to aerial firefighting airplanes. The analysis and scholastic study of the circumstances and causes of the accidents in this sector is part of my ongoing work at the University of Southern California, School of Engineering.

The objective of this submission is to provide input from the private sector, as an expansion of and in addition to the recent NTSB Safety Recommendations relating to certain "In-Flight Breakups of Firefighting Aircraft,"¹ and to provide input to the safety considerations in the use of large aerial tankers for the 2004 wildfire season and beyond.

¹NTSB Safety Recommendation A-04-29 through 33, dated 23 April 2004

ABSTRACT

As the Nation enters the 2004 wildfire season, forecasts of dangerous woodland conditions have raised urgent questions regarding the suitability, airworthiness and sufficiency of the aerial tanker fleet.

Tragic accidents involving three large aerial tanker airplanes are the sole focus of NTSB investigations and recommendations that question the continued airworthiness of aging aerial tankers.

Alternative issues, facts and circumstances regarding those tragic accidents are presented here that support, expand and sometimes contradict the Safety Board's conclusions and findings.

Importantly, this submission raises questions of scope and accuracy of the Safety Board's information that became the bases for their recommendations. Particularly, the broad-brush NTSB report of aerial tanker shortcomings, seems to lack a full understanding of the existing resources and advances of some leading tanker operators.

Neptune Aviation Services of Missoula, Montana, a leading operator in the aerial tanker industry, is selected here for exemplar analysis, albeit briefly, to highlight the solid advances in maintenance and operations that can be and are currently being achieved.

Finally, conclusions are offered that ask for additional study of issues not addressed by the NTSB Safety Recommendations, along with greater support from those governmental agencies tasked with forest resource protection.

Background Statement: History and Factors in Aerial Tanker Accidents Involving In-Flight Breakup 1994 and 2002

Aerial firefighting airplanes have been instrumental in saving lives and property for over 50 years. That fact is indisputable. And though many of the thousands of accounts may only be anecdotal, the suppression of fires by large airdrops of cooling slurry has proved crucial in season after season, and is measurable in property saved versus cost of operation. Aerial tankers reflect solid cost-effectiveness. The 1995 National Air Tanker Study² cited the benefit-to-cost ratio of the large air tanker program to be nearly 9 to 1. In 2003, more than one hundred airplanes and helicopters, operated by nearly 20 commercial aerial tanker companies were engaged in wildfire suppression.³

Recent Tragic Losses

Regretfully, accidents and fatalities in aerial firefighting have taken the lives of scores of aircrew-firefighters, in this hazardous occupation. These accidents occur, under extremely difficult flight environments, often long flight or standby days, and urgent mission pressures. It is important to point out however, that human failure⁴ provides the majority, albeit not the only, causal factor, to aircraft accidents in the aerial firefighting industry. In 2002, a Lockheed C130A and a Consolidated P4Y, two large aerial tankers operated by Hawkins and Powers of Greybull, Wyoming, were lost following structural failures to their airframes. The NTSB in issuing its recent safety recommendation has cited these accidents as well as a 1994 in-flight breakup at Pearblossom, California, focusing on continued airworthiness. While the NTSB reported that both the C130A and the P4Y were maintained and flown by one company, Hawkins and Powers, of Greybull, Wyoming, the safety recommendation(s) addressed continuing airworthiness issues in broad generalities, suggesting that the entire large aerial tanker fleet was problematic.

In my opinion, this broad-based fault finding, goes far beyond what the facts would support in the limited inquiry done following the loss of the P4Y and C130A crashes of a single company. Moreover, the original NTSB accident investigation of the 1994 Pearblossom C130A accident was so flawed as to ignore the basic operational and structural issues, resulting in an erroneous finding of cause. Eight years later, the NTSB re-examined limited and old parts, and still failed to focus on operational realities that the Hercules airplane was being operated nearly 40 knots beyond its limiting speed.⁵ This represents a significant omission in the second NTSB

²Source: U.S. Department of Agriculture-US Forest Service, and Department of Interior study 1995, 8.7 in benefit to cost of program.

³Source: Aerial Firefighting Industry Association (AFIA)

⁴Aeronautical decision-making, airmanship, attempt at visual flight in instrument conditions and mid-air collisions lead the causes.

⁵The 1996 forensic investigation team found by NTAP (national tracking—RADAR recording program) calculations that the C130A airplane was being operated at over 250 knots true air-

report, similar to the “reverse-science”⁶ approach taken in the first accident that found only those factors needed to support witness accounts of an “explosion.”

Similar to the witness statements made in the Pearblossom accident, witnesses at the Walker, California crash saw and heard explosions and told of the wing being blown off. Fortunately, investigators in this later accident had the significant advantage provided by film crew video of this tragic event. In the Walker event, the top center wing section can clearly be seen lifting off in the early stages of the breakup.

Lessons Not Learned

The C130A aircraft lost in the in-flight breakup events of 1994 and 2002 show remarkable similarity, in service hours and modification. According to the NTSB, both aircraft were sold to a single company, Hemet Valley Flying Service of California with exactly the same history.⁷ Both airplanes were modified with 3,000-gallon slurry drop tanks at the same facility in Hemet Valley at approximately the same time. Hemet Valley Flying Service designed and installed the structure at their facility. At the time these aircraft were modified, the FAA-Approved STC⁸ limited the airplane to a gross weight of 120,000 pounds, but allowed the airplane to be loaded with a full 3000 gallons of retardant.⁹ Calculations easily show that the C130A airplanes configured with a cargo capacity approximating 30,000 pounds left little more margin than for 15,000 pounds¹⁰ of fuel allowable in the wings¹¹.

The Lockheed C130 Flight Manual cautions, in part, “*During maneuvering and flight through turbulent air, additional loads are imposed on the airplane. These loads, caused by the acceleration of the airplane, are added to the normal 1.0g load which the structure is supporting. The most important structure is that of the wings that must sustain the airplane in flight. AS THE PAYLOAD IS INCREASED, THE WINGS BECOME MORE AND MORE VULNERABLE TO THE LOADS IMPOSED BY TURBULENCE, SUDDEN CONTROL MOVEMENTS, OR EXCESSIVE ANGLES OF BANK.* (caps added). . . . Each outboard wing tank must contain 715 pounds of fuel more than that of the inboard tank. For flight, this distribution helps reduce wing UPBENDING (caps added) by maintaining a spanwise center of gravity of the fuel that is outboard of the center lift of the wing.”

These cautions were intended for a brand-new, zero-time airplane. The up-bending of the center wing section (due to light fuel loads and heavy cargo loads) places the top skin in compression, and the bottom skin in tension. Conversely, a flexing of the wing in turbulence or rapid control movements, places the top skin in compression and the bottom of the wing in tension. The unique construction of the box-type stringer-to-skin design, allows for a single row of holes to be drilled and rivets to be placed all along this structure. This design is somewhat different than the construction of other airplanes. Both the Pearblossom and Walker aircraft were subsequently lost when their center wing sections failed in precisely the same location.¹² Both the civilian forensic investigators and the re-investigation by the NTSB found fractures in the center wing section of both N135FF and N130HP that originated

speed (between 218 and 228 knots indicated) when the certificated (by STC) and Lockheed/USAF limit was set at 180kts.

⁶The NTSB used over 15 witness statements in the Pearblossom accident investigation to support a theory that an “explosion” (interpreted by witnesses) “blew the wing off.” And though the probable cause was issued as an explosion, not a single piece of wreckage at the crash site exhibited overpressure signatures, characteristic of an explosion. Moreover, top-center-wing sections found 1,700 feet before the impact site showed remarkably no fire or heat damage.

⁷Both Lockheed C130A airplanes N135FF (lost in August 1994 at Pearblossom, CA) and N130HP (lost at Walker, CA in June 2002) were manufactured in the same year (1957), delivered to the U.S. Air Force the same year, and acquired the exact same flight hours (19,547) when transferred to the U.S. Forest Service in 1988.

⁸Supplemental Type Certificate approving the installation with operational instructions for the 3,000-gallon retardant tank, issued to Hemet Valley Flying Services.

⁹Depending on the solution and other factors, the slurry may weigh between 9 and 11 pounds per gallon, with a full retardant tank on the C130A weighing between 27,000 and 33,000 pounds.

¹⁰On average jet fuel weighs 6.5 pounds per gallon, and the Allison T-56-7 engine consumed at least 1,500 to 1,700 pounds per hour per engine at low level/high power. (over 900 degrees turbine-inlet-temperature TIT).

¹¹A nominal C130A empty weight, with crew, equipment, spares, and oil, weighing 85,000 pounds could carry only 15,000 pounds of fuel (less than 2 hours of operation with 45 minutes reserve), if the retardant tanks were full.

¹²The C130 series airplane has a wing designed without a spar. Instead, wing boxes, including a 440-inch hollow box which forms the center wing section, spans the fuselage, 220 inches on each side. Strength is maintained by the structural integrity of all four surfaces of that box, and unlike a normal spar-wing.

at rivet holes along angle-braces inside the wing box (points of stress concentration—"stress risers") in the wing skin structure.

Human Errors Remain as Primary Causal Factor

It is human failure that remains consistent with the commercial and private aircraft findings of cause of aircraft accidents. Similar to causal factors in the aerial tanker accidents over a long history, crew-caused accidents lead the numbers by far.¹³ Even in cases where system or structural failure has been found as a proximate cause, the complex contributing factors of human failure cannot be discounted as the underlying cause.

One may ask, "Can human error in the design and installation of an aircraft modification, or the human error in the failure of oversight by government inspectors be any less contributing factors than the pilots?" Such consideration of human failure is particularly absent in the NTSB Safety Recommendation, which cites the NTSB re-investigation of the 1994 Pearlblossom C130A crash (findings revised 2002–2003),¹⁴ wherein structural fatigue was found as the cause. This seems to be a simple answer of "what happened" and not "why it happened."

In an earlier 1996 re-examination¹⁵ by a team of forensic investigators, cause was found to be rooted in the complex operational factors leading to structural failure. In those findings, the C130A aircraft was operating, at the time of in-flight wing failure, at a speed of *nearly 40 knots higher than maximum allowable and certificated airspeed*, in an environment of 102 degrees Fahrenheit, and in moderate turbulence, while merely "enroute to the fire." While the 1994 NTSB investigation published a finding of an "explosion" of unknown origin, the 1996 NTSB re-investigation found fatigue fractures in its examination of what little remained of the airplane's structure. *Neither the NTSB 1994, nor the 2003, report considered the apparent stress to the airframe that was crew-induced.* Moreover, *neither report emphasized the apparent total absence of cockpit resource management*, which could have prevented the airplane to be flown in that manner only 400 feet above the 8,000 foot ridge tops of the California Sierras. Sadly, in retrospect, whether or not the 2002 loss of the Hawkins and Powers C130A or the Hawkins and Powers Consolidated P4Y ultimately broke up as a result of airframe failure, the industry and the aircrews lost a most valuable opportunity to study, over an 8-year period, the *operational, as well as the airworthiness factors* of the Pearlblossom loss.

However, the NTSB Safety Recommendation, without a full appreciation for the facts, focuses on continuing airworthiness. The errors that destroyed these airplanes may have been simply explained in the original Lockheed cautions, warnings and performance calculations in the manufacturer's instructions. Tragically, even with the knowledge of the operational and structural failures available to the government, the loss of a second and then a third large tanker airplane had to occur before any action was taken.

In my opinion, the failure of the human system is ignored because it is a difficult subject to quantify and change. Measuring cracks and X-raying for flaws is a simple solution; changing operational procedures and developing effectual governmental oversight in operational procedures proves more difficult, especially when government inspectors are neither trained, experienced nor current in the large airplanes flown as aerial tankers. Neither are government inspectors practiced in the CRM¹⁶ (crew resource management) gained only through experience in multi-crew cockpits.

Complex Factors In All Accidents

Why do airplanes fail in flight? It is a complex mixture of operational, aerodynamic and structural dimensions. It is all too easy to find "what happened" to the airplane structure, and not "why it happened". Furthermore, "fatigue" cracks found in wreckages often provide little "historical" significance. As an example, the 1996 re-examination of the C130A (Pearlblossom) wreckage, while finding "low cycle fatigue fractures between rivet holes along wing skin stringers of the center wing sec-

¹³Fatal Accidents, commercial jet aircraft, 1988 through 1997 were caused primarily by human failure, "Controlled Flight Into Terrain" (CFIT), airmanship, mid-air collisions, landing, takeoff, runway incursions, all result from human failure (Source: Boeing Commercial Airplane Company 1998). Previous studies in "crew-caused accidents" (ref: Gallimore, Boeing Commercial Airplane Company, 1987) found that in the period 1977 through 1986, flight crew errors were responsible for aircraft loss 70.6 percent of the events vs. 13.4 percent in airplane-caused failures. During the previous period recorded (1959 through 1976) crew-caused accidents were 73.5 percent vs. 12.1 percent airplane-caused failures.

¹⁴NTSB Investigation LAX-94-F-A323

¹⁵*Zaremba v. Lockheed et al.*, SDSC680802, Calif Sup Ct, San Diego; In re: Crash of Lockheed C130A near Pearlblossom CA., August 13, 1994

¹⁶Crew Resource Management, (see Wiener, Kanki, Helmreich *Cockpit Resource Management*), Academic Press, 1993 for treatise on the subject.

tions,” it was remarkable that *none of these fractures revealed pre-existing fatigue*.¹⁷ Such a finding of fatigue without pre-existing signature has a straightforward explanation. As an example of “new fatigue,” one only has to repeatedly bend a new paperclip ten times before it breaks in “low cycle fatigue.” This is not to suggest that the 20+-year old Pearblossom C130A was new, but the presence of pre-existing fatigue cracks may not be easily differentiated, especially when the wreckage has suffered the elements of eight years of neglect. Neither does it suggest that fractures were not propagating before the crash. It simply means that insufficient information exists about the true state of the airframe before the accidents.

However, we do know, based on weight calculations, performance limitations and installation criteria, that the operational limitations of the C130A aircraft were likely and routinely exceeded by the flight crews. Lack of adherence to limitations, lack of recurrent and initial training on G-limitations and operating parameters, urgency of missions, ignorance of light wing loading vs. heavy cargo phenomena, are all operational factors that comprise poor aeronautical decision-making leading to accidents and not, as the NTSB suggests, a problem based primarily on the airworthiness of the airplane. While airworthiness is always important, the primary considerations should be operationally focused, not structurally focused, as it is always possible to break even a brand new airplane. The original manufacturer (Lockheed) clearly pointed that out in original 1957 flight manuals.

The Maturation of the Aerial Tanker Industry

Aerial tanker operations have evolved from a fleet of generally agricultural application airplanes, to single-engine de-militarized attack airplanes, to still more complex and capable aircraft and helicopters. Too, over the years, changes in forest and population dynamics have occurred as resource and recreational use has shifted and remote settlement on forestland has become commonplace. Because of these changes, government experts indicate that fighting fires is more complex and challenging, as well as larger and more dangerous to population centers as seen in the recent years. The potential for great fire losses seems to be looming for the 2004 fire season as well. The “Wildland Fire Outlook”¹⁸ for eleven areas¹⁹ surveyed by the National Interagency Coordination Center predicted “above normal” wildfire outlook beginning early in 2004.²⁰ Clearly, the need for large quantities of retardant, from large capacity aircraft will be a critical consideration. In a national publication it was reported that, “Firefighting tankers are often the first aircraft available to contain a backcountry fire.”²¹

NTSB Focuses on Continued Airworthiness

The loss of three tanker aircraft²² provides the entire bases for NTSB Recommendations²³ seeking broad development of maintenance and inspection programs impacting the aerial tanker industry. In the wreckages of the Hemet Valley and the Hawkins and Powers airplanes, the NTSB found fatigue cracks that propagated to the point of structural failure to be related to the probable cause(s) of these accidents. Specifically, two of the airplanes were products of the same installation facility, that had little more than cursory FAA oversight at the time.²⁴ The findings and recommendations, in the NTSB accident reports, as well as in the Safety Recommendation,²⁵ however, raise a number of unresolved questions not easily addressed, especially those relating to human performance. Furthermore, the NTSB Safety Recommendations clearly paint all tanker operators with the same broad brush, without the benefit of an in-depth analysis or “Special Study.”²⁶

¹⁷ Findings confirmed by the California engineering laboratory of Fowler, Inc.

¹⁸ National Wildland Fire Outlook, May 1 to May 31, 2004

¹⁹ Ibid, U.S. national areas predicted for “above normal” wildfire potential include the Northwest US, Southern California, Northern Rockies, Eastern Great Basin, Southwest US, Rocky Mountain US, and Eastern US.

²⁰ Ibid. Prepared May 1, 2004

²¹ William B. Scott, *Initial Attack, Aviation Week & Space Technology*, November 3, 2003

²² Aero Firefighting Lockheed C130A at Pearblossom, California 8/13/94; Hawkins and Powers Lockheed C130A at Walker, California 6/17/02 and Hawkins and Powers Consolidated Vulture P4Y near Estes Park, Colorado, 7/18/02.

²³ NTSB Recommendation A-40-29 through 33.

²⁴ Both the 1994 NTSB investigation and the 1996 forensic investigation found no evidence that FAA airworthiness oversight at Hemet Valley was an in depth process. The facility was modifying the structures of FAR Part 137 (agricultural) airplanes, and maintenance waivers from military procedures were granted due to the lack of test and support equipment available to that company in the private sector.

²⁵ NTSB Recommendation A-40-29 through 33.

²⁶ Under 49 CFR 800 et seq., the National Transportation Safety Board may conduct Special Studies to examine system wide, or other broad issues affecting transportation safety.

High Standards *Do* Exist in the Aerial Tanker Industry

In my opinion, the NTSB Safety Recommendation, though well meaning, is short on the facts as they pertain to certain “state-of-the-art” heavy tanker operators and repair facilities. While this investigator has not studied the Hawkins and Powers procedures and facility enough to make comment, another operation stands out, as likely the best in the industry, on a par with the repair facilities of airline operators. Since 1993, *Neptune Aviation Services, Inc.*, has been applying the newest inspection technology and airworthiness analysis processes. Moreover, Neptune has been the leader in tanker pilot training and CRM procedures, formalizing airline standardization and crew coordination equivalent to FAR Part 121 procedures (some learned from tragic pilot-error accidents).²⁷

According to an examination of the Neptune maintenance facility at Missoula, Montana in 2003 by Michael L. Stockhill,²⁸ a former NTSB NW Regional Supervisor, “Neptune (maintenance) is head and shoulders above Part 135²⁹ maintenance, essentially at Part 121³⁰ and better.” A nationally circulated magazine article (AW&ST)³¹ highlighted Neptune’s professional CRM procedures, while another nationally circulated maintenance journal highlighted Neptune’s advanced repair facility and process. Advances in this company’s maintenance process clearly rivals the best of the FAR Part 121 (airline) maintenance facilities. The inspector-author stated, “The maintenance (Neptune’s) program appears to be as methodical and stringent as FAR 121 (airline) maintenance standards.³²” State-of-the-art maintenance and airworthiness assurance are notable, setting “benchmarks for the international firefighting industry” (AW&ST). Noteworthy advances at the Neptune Aviation Missoula facility include an FAA Certified-Part 145 approved and continually inspected maintenance facility equivalent to airline standard, featuring:

- Complete depot-level overhaul of its P2V airplane fleet, removing each airplane from service for over a year, for complete disassembly, inspection and refurbishment.
- FAA-Approved and monitored AAIP (Approved Aircraft Inspection Program) (progressive maintenance).
- Ownership of original Lockheed P2V engineering drawings and specifications to assure repair to original new standards.
- Ownership of original Curtis-Wright engineering drawings to return overhauled parts to original specifications.
- Ownership of original Westinghouse J-34 turbojet engine drawings along with the ownership of the original Westinghouse Type Certificate. Engines repaired and remanufactured to original type-certificate data sheet specifications (TCDS).
- Ownership and design authority for Supplemental Type Certificates for the R-3350 reciprocating engine, the J-34 turbojet engine and the fire retardant tank.
- Ownership of FAA-Approved Field Approval, modifying the P2V airplane for operation with spoiler/speedbrake.
- Full FAR Part 145 Repair Station certification and continual FAA oversight for the aircraft maintenance program, including Part 145 certification on the Curtis-Wright R-3350 engine with all special tooling comparable to the original manufacturer’s standards; and Part 145 certification for the Hamilton-Standard 24260 propeller and special tooling to the original manufacturer’s specifications. This FAA Part 145 certification includes a dedicated FAA-Approved Inspection Manual, as approving standard to return each repaired airplane and component to airworthiness status.

²⁷ On July 29, 1994 near Squaw Peak, MT, Neptune Tanker 04 crashed when pilots lost situational awareness and flew into a mountain valley without exit; and on June 27, 1997, Neptune Tanker 08 crashed at Reserve, NM in a maneuvering stall accident while the copilot was believed to be controlling the airplane.

²⁸ In addition to having served as an FAA Inspector, and a career NTSB Investigator-in-Charge, Mr. Stockhill holds an FAA Aircraft and Powerplant Certificate, with FAA Inspection Authority (A&P/LA)

²⁹ FAA Part 135 refers to the certificate holders who maintain and fly scheduled commuter and on-demand aircraft.

³⁰ FAA Part 121 refers to the certificate holders who maintain and fly scheduled airline operations.

³¹ Neptune Aviation Services was featured in *Aviation Maintenance*, November 2003/Vol.22; and *Aviation Week & Space Technology*, November 3, 2003.

³² Stockhill, *Aviation Maintenance*, November 2003/Vol. 22, Number 11

- Full inspection protocol in place to comply with problem areas as defined by airworthiness directives, with dedicated NDI personnel.³³
- Overhaul protocol that includes complete rewiring, new instrument panel, new plumbing and tubing throughout, completely overhauled engines, stripping, total corrosion examination and repair, and finally, repainting.
- Complete replacement of retardant tanks on set cycles to assure each airplane has virtually a new tank.
- A complete in-house engine overhaul facility, assuring newly manufactured engine condition and performance.
- 4-axis CAM (computer assisted manufacturing) milling for parts no longer manufactured, assuring tolerances to new standards for 40+-year-old airplanes.
- Bar-codes and computer-tracked supply and part supply.
- Newly manufactured tires in original molds.
- Each mechanic in the maintenance facility, or the field, is equipped with their own company laptop, containing fully computerized maintenance and parts description.
- Formalized and recurrent classroom training for mechanics, (only required to be a standard for Part 145 facilities in the future by the FAA)
- Adherence to a Master Minimum Equipment List (MMEL), originated by Neptune, and previously unavailable from Lockheed or the military operator, the U.S. Navy.
- Field mechanics, dispatched with every tanker airplane deployment, completely supplied with common parts and consumables, have the capability of digitized photograph transmissions back to the Neptune Missoula facility with every anomaly or problem on which he needs technical advice.³⁴

Human Performance: An Important Factor in Neptune's Aerial Tanker Operations

Notwithstanding the state of the Neptune Aviation maintenance facility at Missoula, the management recognized crew performance as the key to safe operations over 10 years ago. Regretfully, across the industry lessons have been learned from the loss of aircrews, time and time again through human failure. While the aerial tanker industry has always boasted of pilots with excellent airmanship and piloting skills, the loss of tankers through the years repeatedly were known to be from poor pilot decision-making in a stressful environment, fatigue-related loss of situational awareness, and the total ignorance of multi-pilot cockpit coordination (CRM skills). Neptune Aviation Services, again, has provided benchmarks for the international air tanker community. Its advances include:

- Installation of air-conditioned cockpits (not even available in the original U.S. Navy models) to reduce environmental stress and fatigue for flight crews.
- Year-round salaried pilots, avoiding seasonal lay-offs, providing a higher level of experience and currency.
- Annual formalized Cockpit Resource Training at Dallas, Texas, for both captains and copilots.
- Annual pre-season crew refresher training including classes on weight and balance, airplane charts and performance, airplane systems, IFR procedures, approaches, clearances, and emergency procedures.
- Annual full-motion heavy airplane simulator training
- Unlimited training hours to enhance currency and proficiency.
- Strict check flight standards to FAR Part 121 (airline) proficiency each year.
- Each captain must pass an FAA Part 61.58³⁵ checkride in the actual airplane (not simulated), prior to the fire season, before approval for each year's operations. Copilots, as well, must pass FAA Part 61.55 checkrides in the actual company P2V airplanes.

³³Non-destructive inspection and testing personnel qualified to Level II magnetic particle, and other NDI protocol

³⁴It was common practice and government-encouraged in previous years that pilots fly and fix their airplanes at remote firebases, as a cost saving measure. Neptune initiated the now-accepted practice of providing ground support and dedicated mechanics to repair airplanes after the missions, allowing aircrews to rest after flying all day.

³⁵Part 61.58 Pilot in Command proficiency check; Operation of aircraft requiring more than one flight crewmember

Neptune's Aerial Tankers Are Truly IFR-Capable

It is especially noteworthy to examine the changes to the navigation and communications capabilities of airplanes in the Neptune fleet. In the past, and presently continuing with other operators, aerial tanker airplanes and their operating aircrews rarely enjoyed even minimum capability to fly in instrument meteorological conditions (IMC). Many air tankers have been lost, or nearly lost, when they encountered instrument conditions. Improvement to cockpit instrumentation is the standard for Neptune's P2V airplanes. IFR (instrument flight rule) improvements go far beyond original equipment and make the P2V airplane and operating crews truly capable of flying in instrument conditions, returning to an airport with weather at field minimums. In the past, aerial tankers, or the flight crews, rarely had this capability. Neptune IFR improvements include:

- Annual classroom recurrent training in IFR and approach procedures.
- Airline (FAR 121) level checkrides annually.
- Full motion heavy airplane training annually on instruments
- Annual CRM, cockpit resource management, training on IFR procedures, cockpit and ATC communications.
- Each operational P2V equipped with MMEL-required state-of-the-art instrumentation and navigation equipment including, but not limited to, Garmin GNS-530 satellite navigation and communication (COMM/GPS) coupled to Ryan 9900BX TCAD instrument/display; King Nav/Comms, King Navigation Receivers and Mode C (altitude reporting) transponders.

The C130 and the P2V Aerial Tankers

Wing structures of the P2V and the C130 series airplanes are simply not the same. While the C130A and the P2V model airplanes both originate at a Lockheed facility, significant differences exist in the design of their structures. Essentially, the wing of the P2V has a much stronger rib design, utilizing "box-type" stringers, placed span-wise between the 15 percent bulkhead chord and the rear 60 percent bulkhead chord. While both the P2V and the C130 series have box-constructions, the C130A internal skin surface utilizes aluminum angle braces, single-row riveted on the undersurface. Fractures found in the Pearblossom and Walker accident analysis demonstrated that the single row of rivets likely became stress risers and points of fracture propagation as the wing root was exposed to tension and compression flexing.

Moreover, Neptune Aviation Services' maintenance facility in Missoula conducts X-ray inspection of wing components annually or every 325 cycles (whichever comes first) and removes and inspects the wing stress panels every two years for visual inspection. Neither Navy records nor civilian databases have any recorded instance of an in-flight wing failure of a P2V.

The C130 and the P2V: Different Missions, Different Strengths

Likely, the original requirements by the U.S. Navy, and subsequent structural design by Lockheed, took into account the fundamental differences in mission assignment. The P2V was designed to fly with extended fuel loads and bomb loads (including heavy nuclear weapons) at weights of 80,000 pounds, and bank angles to 60 degrees.³⁶ (Neptune Aviation Service limits its P2V airplanes to a 71,000-pound ramp weight.) While the later C130A airplane was designed as a transport, the SP2V (original Navy designation) was designed for anti-submarine warfare (ASW) requiring the aircraft to be flown continuously in tight, high G-loaded, turns at low level over the ocean, in the worst of weather.³⁷ In fact, Navy operating limitations allowed for maximum speed (350 knots) in moderate turbulence, and recommended a reduction to between 150 to 190 knots *in severe turbulence*.

Other performance limitations underscore the huge differences between the P2V and the C130. Beside a 45-degree bank angle limitation, the C130 series should not be slipped or skidded, and while it can be done by a pilot with caution, he risks losing control due to a phenomenon called "fin stall" wherein the vertical stabilizer (as a vertical wing) actually stalls and aircraft control is lost as it rotates about its vertical axis. Similarly prohibited in the C130 series is the use of asymmetric power

³⁶ NAVAIR P2V Aircraft Operating Limitations, allowed for bank angles up to but not exceeding 60 degrees, and operation in turbulence up to and including moderate to the maximum speed of 350 knots below 3000 feet altitude.

³⁷ P2V pilots continually flew "MAD-traps" (magnetic anomaly detection) of submarines in tight circles and figure 8s, sometimes in 45 or more angle-of-bank turns, hours on end. Likewise, "Sonabouy" patterns were flown, in even tighter turns to relocate listening devices dropped in the ocean to detect submarine sounds.

conditions, except in the emergency loss of an engine. The P2V airplane's Navy limitations actually allow "slipping or skidding" as required, and the use of asymmetric power conditions or for landing approaches, skidding or slipping at indicated airspeeds up to 230 knots.³⁸

Effective Airworthiness Programs are Alive and Well

The NTSB Safety Recommendation at page 7 presents a finding that, if meant to apply to the aerial tanker fleet as a whole, is simply wrong. The Safety Board's statement is fundamentally flawed by the lack of full knowledge and review of existential conditions in the community. Stating,

"Therefore, it is apparent that no effective mechanism currently exists to ensure continuing airworthiness of these firefighting aircraft. Specifically, the maintenance and inspection programs currently being used do not adequately account for the increased safety risks to which these aircraft are now exposed as a result of their advanced age and their more severe stresses of the firefighting environment". (continuing) *"The Safety Board notes that the inspection and maintenance programs used by Hawkins and Powers for the C130A and the P4Y accident airplanes, which were based on military standards, included general visual inspections of cracks but did not include enhanced or focused inspections of highly stressed areas, such as the wing areas, where fatigue cracks that lead to the accidents were located."*

Without fully knowing the scope of the Safety Board's review of the aerial tanker industry, it is hard to believe the NTSB would suggest in its Safety Recommendation that the maintenance limitations and inspection shortcomings revealed in the C130A accidents and the P4Y accident should be applied to other FAA approved and state-of-the-art maintenance facilities. Specifically addressing the Safety Board's concerns, certainly as it applies to Neptune Aviation Services, readily shows precisely the opposite findings:

- Neptune's P2V airplanes are not exposed by "advanced age." Manufacturers drawings and specifications as well as full-computer aided replication of worn parts ensures that the airplanes are likely every bit as good as new production airplanes.
- Neptune's P2Vs are electronically, magnetic-particle and X-ray inspected especially in high stress wing areas.
- Neptune Aviation Service *does possess* the engineering expertise necessary to conduct studies and engineering analysis to define the stresses associated with the firefighting operating environment and to predict the effects of those stresses on the operational life of the airplane, and its components. State-of-the-art CAM equipment to replicate to OEM specifications, and engineering personnel, and the ownership of full OEM airframe and component drawings and engineering data, place this engineering and maintenance facility at the forefront of the aviation industry, including Part 121 certificate holders.
- Neptune's maintenance and inspection programs, quality assured by an FAA-Approved and reviewed Part 145, Quality Assurance Airworthiness Program does, in fact, ensure continuing airworthiness.
- The P2V design and Neptune's professional operational oversight ensures that the aircraft never exceeds its reduced G load limitations, notwithstanding the fact that their aircraft likely approach original manufacturer's design load limitations.

The Need for a Full Safety Study of the Industry and Government Oversight

In summary, the continuing airworthiness of aerial tankers and their reliable service to the wildfire suppression efforts of the various government agencies can be assured though the efforts of professional and proactive operators such as Neptune Aviation Services. To group any or all of the aerial tanker operators into one classification and issue failing grades does a disservice to the industry as a whole and reflects poorly on the review or analysis done by the Safety Board.

Recognizing the NTSB to be among late arrivals³⁹ to study the problems and offer solutions to the aerial tanker community, it is long overdue that the Safety Board,

³⁸ Change 1 to NAVAIR NATOPS 01-75EDA-1, Part 4

³⁹ Prior to 1994 the NTSB had no statutory authority to investigate mishaps in these "public use" aircraft, and even since that time, have spent little time or resources in the investigations following the loss of these large airplanes. The NTSB itself should ask why its own investigation into the tragic C130A loss at Pearblossom was so blatantly flawed, publishing unsupportable

within its 49 CFR 800 authority, undertake a Special Study of the entire industry and governmental oversight, to examine not only the limitations and needs, but the achievements of essentially a reliable, self regulating, self sustaining, and creative sector of the U.S. aviation industry.

LARGE AIR TANKER AIRWORTHINESS AND MODERNIZATION

Issue Paper Developed by Ronald F. Livingston—May 16, 2004

This document describes the issues involved with the decision to terminate the U.S.D.A. Forest Service and Department of the Interior large air tanker contracts. Part I offers a brief recommended solution to the issue and Part II is supporting data with a more detailed description to substantiate the recommended solutions in Part I.

Part I—Recommended Solutions

Contract Termination

Reinstate all 33 large air tanker contracts effective immediately based on the fact these aircraft were required contractually to have in-depth inspections, as recommended by Sandia National Laboratories last year (2003), prior to being returned to service as large air tankers.

NTSB Recommendations

Notify the NTSB that the U.S.D.A. Forest Service and Department of the Interior have responded to Recommendation A-04-29 3) by developing a Structural Health Monitoring Program for large air tankers designed to collect loads and strain data in the wild land firefighting environment. Three large air tankers are currently equipped with recording equipment.

Sandia National Laboratories

Provide additional funding to Sandia National Laboratories Structural Health Monitoring initiative so that data obtained from this years fire season can be evaluated and applied to the current large air tanker fleet as well as modernization initiatives to comply with NTSB Recommendation A-04-29 in its entirety as well as A-04-30.

U.S.D.A. Forest Service and Department of the Interior Contracting

Appoint an independent commission made up of private sector executives and government contracting personnel to evaluate and develop a contracting mechanism that will allow for modernization of the large air tanker fleet by offering incentives for bringing new aircraft into the fleet.

Establish a contract that is for five to seven years with penalty clauses for early termination by either party. This will allow business owners to obtain necessary funding for modernization projects.

Require that all large air tanker operators be required to be certified as Repair Stations under 14 CFR Part 145 with limited ratings for the type of aircraft they operate as a large air tanker to include airframe, engine(s), and propeller(s). Those operators that are not currently certified Repair Stations with these limited ratings would have to start the certification process for these limited ratings immediately.

Install Structural Health Monitoring equipment on all large air tankers utilized in wild land firefighting operations with a Structural Health Monitoring program capable of monitoring the strains and loads of each flight with established inspection criteria if pre-established limits are exceeded. This should be in place by the 2005 contract inception.

Federal Aviation Administration

Develop a Memorandum of Understanding between the contracting agencies, U.S.D.A. Forest Service and Department of the Interior, and the regulatory agencies FAA Flight Standards and Aircraft Certification stating the responsibility for airworthiness and compliance with FAA Approved Flight Manuals and FAA Approved Inspection Programs regardless of the use of the aircraft.

and unscientific conclusions. Eight years had to pass and other lives had to be lost before the Safety Board acknowledged what many professionals knew about the more probable cause of that accident.

Government Agencies Cooperation

A National Air Tanker Working Group and steering committees for the three models of large air tankers are under development. Finalize the charters for these groups. Establish a realistic time line for the final charters wording and subsequent signatures by all participants. Schedule a time for the first working meeting dealing with issues as established in each charter.

Part II—Supporting Data

Contract Termination

The U.S.D.A. Forest Service and the Department of the Interior on May 10, 2004 came to the decision to terminate the contracts of 33 large fixed-wing air tankers based on the following statements from the NTSB Recommendation report dated April 23, 2003:

“it was apparent that no effective mechanism currently exists to ensure the continuing airworthiness of these firefighting aircraft.”

*The U.S.D.A. Forest Service and the Department of the Interior continue to operate approximately 725 other aircraft both fixed-wing and rotary-wing in the firefighting environment. **What mechanism currently exists to ensure the continuing airworthiness of these 725 firefighting aircraft?***

The NTSB report also indicated that a complete history of maintenance and inspection records are not available for many of the military surplus large air tankers.

This may have been true for the large air tankers that had the in-flight breakups described in the NTSB report and the NTSB discovered this during their investigation however, when Sandia National Laboratories conducted their evaluation of the large air tanker operators early in 2003, not having a complete history of maintenance and inspection records was not among their findings.

The average age of the large air tanker fleet is 48 years with some more than 60 years.

Many of the 725 remaining aircraft are close to the same age as the large air tankers such as the Sikorsky helitanker S-64 & CH-54. These aircraft went into production in 1962. Some of the medium size helicopters such as the Bell 205 first flew in 1961. With the exception of a few aircraft, the entire firefighting fleet of aircraft is old and not limited to just the large air tankers.

NTSB Recommendations A-04-29—31

Role of the Forest Service and Department of the Interior

“The Safety Board is aware that the Forest Service has recently embarked on a multiyear plan to evaluate and improve the airworthiness of its air tanker fleet, including modification of its maintenance program so that it more closely reflects the firefighting mission. The Board supports this initiative and looks forward to learning more about the progress and results of this plan.”

With this statement in the NTSB report it is clear the Board did not intend to remove the large air tankers from service. The Board was aware that initiatives were underway to improve the inspection programs and the Board desired to learn more about this undertaking not to ground the large air tanker fleet.

NTSB Recommendation A-04-29—Part 3) the magnitude of maneuver loading and the level of turbulence in the firefighting environment and the effects of these factors on remaining operational life.

This particular portion of NTSB Recommendation A-04-29 is currently being conducted. Three large air tankers are currently equipped with Structural Health Monitoring equipment. The Structural Health Monitoring equipment installation was started in the summer of 2003. The three aircraft are a DC-7 (Tanker 66), a P2V (Tanker 48), and a P-3 (Tanker 25). Tanker 66 (the DC-7) was operable by the fall of 2003 and collected a small amount of data from the California fires. This data will be evaluated when funding continues for this project. Tanker 25 and Tanker 48 finalized their installation during the winter are operable and ready to collect data during the 2004 fire season. This equipment will measure the g-loads and strains the large air tankers are subjected to in the wild land firefighting environment. The Structural Health Monitoring equipment will collect data daily and the flight crew will download this data daily via the Internet and send the data to a computer managed by Sandia National Laboratories. Sandia National Laboratories personnel will perform engineering evaluations (NTSB Recommendation—Part 5 of A-04-29) and compare this data to the airplanes original design intent (NTSB Recommendation—Part 1 of A-04-29). NTSB Recommendation Part 2 and 4 of A-04-29 will be used to revise the FAA Approved Inspection Programs. FAA Aircraft Certification Service

has requested access to this information for future certifications of large air tankers as well as any other group of aircraft subject to low-level firefighting operations. No other group of aircraft involved in wild land firefighting operations is currently conducting this type of program.

Additional funding will be required to conduct in-depth engineering analysis to comply with NTSB Recommendation A-04-29 and A-04-30.

A separate large air tanker operator that operates two Lockheed C-130A aircraft has the same Structural Health Monitoring equipment installed. One of the C-130A aircraft collected some data from wild land firefighting operations conducted in Europe in 2003. This operator has formed a group called the Low Level Loads Working Group. The FAA Aircraft Certification Offices in Los Angeles and Atlanta personnel are members of this group with the purpose of implementing an appropriate and realistic, economical Structural Health Monitoring program for special mission aircraft used in the low level environment.

Recommendation A-04-30—Require that aircraft used in firefighting operations be maintained in accordance with the maintenance and inspection programs developed in response to Safety Recommendation A-04-29.

Contractually the large air tankers are required to maintain their aircraft in accordance with an FAA Approved Inspection Program. As stated above, the FAA Approved Inspection Program will be revised once the Structural Health Monitoring data has been analyzed compared to the original design intent, and all flight hours in all operations considered.

Recommendation A-04-31—Hire personnel with aviation engineering and maintenance expertise to conduct appropriate oversight to ensure the maintenance requirements specified in Safety Recommendation A-04-29 are met.

This has been accomplished in part by contracting with Sandia National Laboratories to evaluate the current large air tanker operators (Sandia has qualified engineers assigned to this project). Mr. Ron Livingston, Large Air Tanker Program Manager Airworthiness and Modernization, was hired to provide management oversight for Sandia National Laboratories and to ensure the recommendations made by Sandia National Laboratories were completed as they pertain to airworthiness issues and to evaluate modernization initiatives for suitability to wild land firefighting operations.

Mr. Livingston previously worked for the FAA Flight Standards as an Airworthiness Safety Inspector and is currently a Designated Airworthiness Representative, Mechanic with Airframe and Powerplant Ratings, and Inspection Authorization.

Sandia National Laboratories

Sandia National Laboratories was contracted in December of 2002, after the Blue Ribbon Panel findings were released, by the U.S.D.A. Forest Service to support the Forest Service Air Tanker Modernization Program:

Task number one—2003 evaluate the existing large air tanker operators FAA Approved Inspection Programs for applicability to aging aircraft issues and the wild land firefighting environment.

Sandia National Laboratories visited every large air tanker operator starting in February 2003 and ending in April of 2003. Sandia National Laboratories evaluated the following areas FAA Approved Inspection Programs, operator facilities, maintenance personnel experience, training, and qualifications, and Non Destructive Inspection capability.

Sandia National Laboratories wrote three draft reports based on these evaluations. The reports were separated by the model of aircraft. One report for the Douglas DC-4, 6, & 7, one report for the P2V aircraft, and one report for the P-3. These reports contained recommendations. Some recommendations were for the U.S.D.A. Forest Service, some recommendations were for the particular make and model of aircraft, and other recommendations were specific to the particular large air tanker operator. The draft reports were submitted to the U.S.D.A. Forest Service and the FAA Aircraft Certification Office in Washington, D.C. for their review and comments.

Basically the Sandia National Laboratories recommendations included performing depot level maintenance with particular attention paid to the critical structural areas in the wing box and wing attaching areas. Other recommendations were to revise the FAA Approved Inspection Programs to include these inspections on a more frequent basis and to include a section in the FAA Approved Inspection Program covering inspection requirements for overweight landings, and in-flight overload conditions.

The U.S.D.A. Forest Service incorporated a contract modification to require all large air tanker operators to comply with the Sandia National Laboratories recommendations. The U.S.D.A. Forest Service paid for the inspection costs but the

large air tanker operators were responsible for the costs incurred for repairs that would be required after the inspection.

All large air tanker operators complied with these requirements and were inspected in-depth only one year ago. Some of the large air tankers were delayed in going on contract because of these enhanced inspections. The large air tanker operators revised their FAA Approved Inspection Programs per the recommendations submitted by Sandia National Laboratories.

Task number two—2004 Collect data from the Structural Health Monitoring program, develop database, and begin engineering evaluations. Additional task is to review modernization program.

Sandia National Laboratories statement of work extends on into 2006 for continued engineering support, operational assessment, system safety, fleet management improvements, training, and strategic planning of the large air tanker fleet.

U.S.D.A. Forest Service and Department of the Interior Contracting

Large Air Tanker Operators must be currently certified under Federal Aviation Regulation (CFR) 14, Part 137 (Agricultural Aircraft Operations).

This is an operating rule that allows aircraft conducting agricultural operations to deviate from the provisions of 14 CFR Part 91 General Operating and Flight Rules while conducting dispensing activities directly affecting forest preservation.

The FAA Flight Standard District Office issues this certification and is responsible for conducting inspections on agricultural operators within their district. The current FAA Flight Standards national policy is to inspect 1/10th of the agricultural operators in their district annually.

A Federal, State, or local government conducting agricultural aircraft operations with **public aircraft** need not comply with this subpart (14 CFR 137.11(c)).

Large Air Tankers shall have been issued a Standard or Restricted Airworthiness Certificate.

Airworthiness Certificates are issued by the FAA and are required for **civil aircraft** by 14 CFR Part 91.203. Before an aircraft can be issued an airworthiness certificate the aircraft must have been issued a Type Certificate issued by the FAA. The Type Certificate is a formal description of the aircraft. The Type Certificate lists the limitations and information required for Type Certification. In order to issue an airworthiness certificate the FAA inspects the aircraft to insure the aircraft meets the requirements on the type certificate and is in a condition for safe operation.

The current contract requires that large air tankers have an FAA Approved Inspection Program in accordance with 14 CFR Part 91.409(f)(1).

14 CFR Part 91.409(f)(1) is under Subpart E of 14 CFR Part 91 which is entitled Maintenance, Preventive Maintenance, and Alterations. 14 CFR Part 91.401 Applicability (a) states "This subpart prescribes rules governing the maintenance, preventive maintenance, and alterations of U.S. registered **civil aircraft** operating within or outside of the United States."

Federal Aviation Administration

The FAA is responsible by law to promote safety of flight for *civil aircraft* in air commerce.

FAA Aircraft Certification Service is responsible for issuing Type Certificate Data Sheets. Flight Standards is responsible for issuing Airworthiness Certificates, approving inspection programs for large air tankers, and for issuing Operating Certificates under 14 CFR Part 137 for Agricultural Aircraft Operators.

According to the definition for *public aircraft* the large air tankers are considered *public aircraft* because of the governmental function of firefighting and only the U.S. Government uses the aircraft.

The FAA Flight Standards understands these aircraft are **civil aircraft** during the period when the aircraft are not on contract with the U.S.D.A. Forest Service or Department of the Interior. However, FAA Flight Standards feels it does not have any responsibility during the time the aircraft are on contract and that the aircraft are **public aircraft** and the FAA Flight Standards is concerned that during the contract period they do not know how the aircraft are operated and maintained.

The fact of the matter is that the aircraft are operated in accordance with the Approved Flight Manual and the aircraft are maintained in accordance with the Approved Inspection Program. This is a contractual requirement.

There should be a Memorandum of Understanding between the U.S.D.A. Forest Service and the Department of the Interior that states the large air tankers will be operated and maintained in accordance with their Approved Flight Manual and Approved Inspection Program respectively during the contract period when the large air tankers are used for firefighting operations.

Government Agencies Cooperation

A National Air Tanker Working Group is being formed at the national level which membership consists of FAA Aircraft Certification, FAA Flight Standards, U.S.D.A. Forest Service, Department of the Interior Bureau of Land Management, Air Tanker Board, P2V Steering Committee, Douglas Steering Committee, P-3/L-188 Steering Committee, Sandia National Laboratories, Low Level Loads Working Group, and Transport Canada. A charter is currently under development to be approved by all participants.

The National Air Tanker Working Group—Certification and airworthiness will support the selection, certification, alteration, and continuing airworthiness of large fixed-wing air tankers used to support wild land firefighting operations.

Steering Committees have been organized for three groups of aircraft that are currently being operated as large air tankers. They are Lockheed P2V, Douglas, and P-3/L-188. Charters for these committees are currently being developed and will be approved by all participants.

A meeting was held at the Los Angeles Aircraft Certification Office with all of the operators of P2V aircraft, FAA Aircraft Certification, FAA Flight Standards AFS-300, FAA Flight Standards Principal Maintenance Inspectors, FAA Flight Standards Aircraft Evaluation Group, Sandia National Laboratories, U.S.D.A. Forest Service, and Department of the Interior Bureau of Land Management.

These committees are a collaborative effort led by the large air tanker operators with representation from the FAA, USDA, and DOI, whose main goal is to ensure the continued airworthiness of the large air tanker fleet. Their main tasks will be to review FAA Approved Inspection Programs, Identify In-Service Problems and Solutions, and Serve as a Focal Point for all Continued Airworthiness Issues on the large air tanker aircraft.

Mr. TIMMONS. Thank you, sir.

I would like to address a number of issues today that my colleagues here and fellow panel members have discussed, one being the NTSB safety recommendations, the termination for convenience of our contracts with the Department of Agriculture, and the state of current FAA oversight on the local level.

On April 23, 2004, the NTSB released safety recommendations concerning the airworthiness of the current airtanker fleet. This was a flawed document. It was lacking in any due diligence in its research to determine the capabilities of the airtanker industry as it stands currently. They were either unaware of the work conducted by the Sandia National Labs or they never bothered to contact them. They were unaware that the U.S. Forest Service had hired an airworthiness program director. The only operator they investigated was the one who had suffered the tragic loss of two airtankers. No other operators were contacted. Yet the NTSB made wide statements concerning the industry's capabilities and procedures in maintaining aircraft.

They were unaware that there are operators that have full OEM support, manufacturing support. Neptune is one. We have an agreement with Lockheed that provides full engineering data support for our equipment.

While I cannot address individual operators' procedures, I can discuss what we do at Neptune. It is my assumption that other operators have similar maintenance programs in place. Neptune has all aircraft records detailing their full operational life of their aircraft, as do other operators. In the case of Neptune, we have full engineering data for the production of the P2V that we acquired from Lockheed a few years ago. This allows us to manufacture parts and equipment to new standards.

Neptune's aircraft are put through a full airframe depot-level inspection once every 8 years, in addition to its yearly heavy air-

frame inspection that occurs yearly. Since 2002, our wings and carry-throughs have received a full engineered damage tolerance assessment, and the FAA has approved the inspection procedures addressed from that assessment.

In addition, our wings are given an expanded depot-level inspection every 2 years. This includes X-ray, dye penetrant, and visual inspections. All components that can be removed—all components are removed and are inspected. This includes stress panels, access panels, leading edges, fuel tanks, retardant tanks, and wing ribs. All components are inspected and replaced, if needed, with parts manufactured to new standards.

To address accumulated fatigue issues, we use an accelerated maintenance program. For every hour that our aircraft fly, we put 3 hours on that airframe in terms of our maintenance program. So a one to three ratio. This is precisely the program that Air Transport Canada uses for their airtanker maintenance programs and certification. Yet the U.S. Forest Service is still discussing bringing Canadian aircraft south of the border to fight fire in the U.S., utilizing the exact same procedures for accumulated fatigue.

Independent investigators have examined our operation many times and they have stated that Neptune Aviation's maintenance is equal to or exceeds 121 standards—airline standards. I am sure that other operators of heavy airtankers are operating at the same level.

There seems to be quite a bit of confusion concerning civil versus public aircraft. It is a grey area that has been debated for over 50 years now. It was truly designed for government-owned and operated aircraft. Yet now we have the government-leased aircraft included into that category, aircraft that the government truly does not have any operational control over.

I know that the U.S. Forest Service has expressed concern for liability reasons with relation to heavy airtankers. However, the U.S. Forest Service has only been successfully sued once in relation to a heavy airtanker accident. In that one accident, it was a U.S. Forest Service lead plane aircraft that collided with an airtanker on short final in Ramona, California, and the U.S. Forest Service aircraft was deemed at fault. In all other cases, the courts have ruled that it is the companies that operate these aircraft that are responsible for maintenance and flight training and the flight crews are responsible for exercising good command judgment.

In every other case the U.S. Forest Service has been involved with, they have argued that these aircraft are civil use aircraft, not public. If you go back through the court records and you look at the testimony given, you will find that the Department of Agriculture has argued that these aircraft are civil use. Now we are hearing a different argument. If the question is truly liability, there are ways to address these concerns through contracting language.

Our aircraft are certified as civil aircraft. Yet during the 100 days we are on contract with the U.S. Forest Service, the national office of the FAA considers us public use aircraft. Yet at no time are we removed from FAA oversight. Even during the fire season, we are under constant supervision by the FAA. We can do nothing with those aircraft without FAA approval.

We are all required to hold civil airworthiness certificates for our aircraft. We are required to adhere to all FAA regulations throughout the year. Our maintenance programs and procedures are approved and continually evaluated by the FAA year-round. The FAA has been providing oversight to the airtanker industry all along. It seems to me it would be a small step for the FAA to say that they are conducting some level of oversight of these operations, since in the real world that is precisely what they are doing.

I have been informed yesterday that the FAA has stepped up to the plate by providing recommendations concerning how to inspect aging aircraft, providing inspection procedures and knowledge that are rooted in their experience with aging aircraft. I have also been told that the U.S. Forest Service has taken these guidelines and expanded what the FAA recommends by adding an additional third recommendation, that they have done so without consulting the FAA. The FAA did not require this third recommendation, nor did they know about it, and from what I have been told are in disagreement over it.

This third recommendation is to test for widespread fatigue damage, WFD. It is a predictive tool based on data gathered in the flight environment. Without that data, there is no way to predict widespread fatigue damage. The industry, in conjunction with the Sandia National Labs, were in the process of accumulating this data at the time of the termination of these contracts. It is a shame that by terminating these contracts this flow of data has been interrupted.

It should also be clear that there is no way to test for widespread fatigue damage. It is a predictive tool, not something you can test for. There is no accepted procedure to do so with our current technology; that there is no data to support these new inspections, yet the U.S. Forest Service, a non-aircraft certifying agency, is requiring that this be a part of any inspection to return these aircraft to service.

As I remember, one of the reasons that the U.S. Forest Service terminated these contracts was that they lacked the experience and the people to oversee the airworthiness concerns addressed in the NTSB safety recommendations. Yet, somehow they have accumulated this expertise and decided that they needed an additional inspection for widespread fatigue damage, one the FAA, the certifying agency for aircraft, deemed unnecessary and unattainable without flight data.

The CHAIRMAN. Mr. Timmons, I would like for you to summarize since we are over time.

Mr. TIMMONS. No problem, sir.

It is my view that this is nothing but a war of attrition. The U.S. Forest Service will continue to raise the bar just high enough that the industry cannot accomplish the task or it is not economically achievable to accomplish this task. And if the industry accomplishes the task, it will be assigned a new one. After all, the industry has either accomplished or exceeded every task it has been assigned since the tragic loss of aircraft in 2002.

Thank you.

[The prepared statement of Mr. Timmons follows:]

PREPARED STATEMENT OF MARK TIMMONS, OWNER AND CHIEF EXECUTIVE OFFICER,
NEPTUNE AVIATION SERVICES

Mr. Chairman and Members:

I am the owner and Chief Executive Officer of Neptune Aviation Services, a former contractor with the Department of Interior and Department of Agriculture to provide Heavy Airtankers for wildland fire suppression. Prior to the Termination for Convenience by the Department of Agriculture of our contracts on May 10, 2004 we had seven (7) aircraft contracted for the upcoming wildland fire season, five full time contracts and 2 exclusive use spares. We are based in Alamogordo New Mexico and Missoula Montana, with our corporate offices in Missoula Montana. We employ one hundred and (100) people of whom 35 are A&P mechanics and 8 are IA's, and nineteen flight crewmembers. Our physical plant consists of a hangar and shop facilities in New Mexico that allows us to put one (1) of our aircraft inside at a time for maintenance and a retardant tank manufacturing facility. In Missoula, we have a facility where we can put two aircraft inside for maintenance at one time; a full machine shop and engine overhaul facility. Neptune Aviation has been identified by many outside sources as having facilities and maintenance procedures and process that are equal to, or exceeding the best of the FAR Part 121 (airline) standards (see Herlihy's Submission To The Oversight Hearing on Firefighting Preparedness: Are we ready for the 2004 Wildfire Season on May 13, 2004). Neptune Aviation Services is certificated as a FAA Part 145 Repair Station No. N16R011N with the following ratings: Airframe Class 1&3, Limited Airframe for the Lockheed P2V-5 and P2V-7, Limited Power Plant with Overhaul capabilities for the Curtis Wright R-3350, Limited Radio, Limited Propeller with Overhaul Capabilities for the Hamilton Standard model 24260, Limited Accessory, Limited Instrument, Nondestructive Inspection, Testing and Processing. Neptune Aviation is in the process of incorporating the Lockheed L-188C into the Repair Station operation specifications including the Rolls Royce 501-D13 power plant the Aero Products 6440 series propeller. FAA 137 Commercial Agricultural Aircraft Operations certificate number CILG838C.

The objective of this testimony is to provide input from an aerial firefighting contractor for heavy airtankers concerning the recent actions of the Department of Agriculture and Department of Interior to Terminate for Convenience their contracts with said contractors based on an incomplete and flawed N.T.S.B. Safety Recommendation. An additional objective is to convey to this committee what the industry has done and is doing concerning the NTSB report and the Sandia Laboratories report of 2003. Lastly, I would like to address the question of FAA oversight over the companies that have historically contracted with the aforementioned mentioned agencies.

Termination For Convenience

On May 10, 2004 at 14:20 hours Eastern Standard Time, The Department of Agriculture and The Department of Interior notified the contractors of Heavy Airtankers that their contracts with their respective agencies would be terminated at 17:00 hours Eastern Standard Time on May 10, 2004. The means of Notification of Termination of these Contracts was provided by fax, and preceding the notification to the companies involved, notification was provided to the press. Thus, the first notification of termination to the companies and personal involved was provided by the press, not by the Department of Agriculture and the Department of Interior. No personal contact was made by the agencies that terminated these contracts to the companies that were involved. At the time of the termination for convenience many of the companies had aircraft and support crews in the field fighting wildland fire. In the case of Neptune Aviation, we had two (2) aircraft in the field fighting wildland fire; it was unfortunate that these crews had to continue to operate their aircraft with the knowledge that they would no longer have a contract at the end of the business day. The question of aircrew safety was apparently not a concern in the timing of the termination of these contracts. It was a testimony to the quality of the aircrews and companies that they finished the day safely fulfilling their contracts and obligations to the very agencies that had terminated their contracts without regard for their safety.

While it may seem that the Department of Agriculture was taken by surprise by the content of the NTSB report, the agencies were in possession of the draft copy of the NTSB report for over one (1) year prior to the release of the final draft (testimony by The Honorable Ellen Engleman-Conners during the Oversight Hearing on Firefighting Preparedness in U.S. House of Representatives on May 13, 2004). In fact the Department of Agriculture was a partner throughout the two (2) year investigative process. We can only conclude, that while not all of the NTSB's recommendations may have been present in the draft report; the major conclusions

concerning their findings were present. During this period of the time while, the Department of Agriculture was aware of the draft findings of the NTSB report, they were continuing to encourage the operators of the heavy airtankers to modernize their fleets by making large investments of capital. On December 10, 2003 in Boise Idaho, and again via a telephone conference on April 16, 2004 The Department of Agriculture encouraged the heavy airtanker industry to modernize their fleet of aircraft prior to the 2008 contracting period or be in risk of not being awarded any future contracts. In fact, Neptune Aviation acquired two (2) L-188 for the purpose of modernizing our fleet at a cost of over one and a half million dollars.

NTSB Safety Recommendation A-04-29 through -33

While the NTSB Safety Recommendation provided a concise and an accurate evaluation of the two tragic accidents that occurred in 2002, it failed to accurately access the current condition of the heavy airtanker industry, nor did it even attempt to determine the changes that had, and are occurring within the heavy airtanker industry today. This oversight can only be described as negligent, both in its lack of effort and in its scope to determine the current state of the industry, and incompetent in their failure to conduct any type of coherent research on current airworthy programs.

The NTSB either failed to contact or was ignorant of the Sandia National Laboratories detailed study of the airworthiness of the individual aircraft and companies involved in the airtanker industry in 2002. Sandia issued draft reports concerning each company and their aircraft in 2003 outlining what steps each company needed to accomplish in order to maintain the airworthiness of their aircraft. Prior to the start of the 2003 wildland fire season, Neptune Aviation Services was in compliance with all the recommendations contained in the Draft report, as were all airtanker companies. In order to accomplish this all the airtanker companies expended large amounts of capital, out of their own pockets, to meet or exceed the recommendations of the Sandia Laboratories. The final draft of the P2V Sandia report has been sent to the FAA for review and comment is expected to be finalized and released at any time. The Final report for the P3A has already been released by the FAA, the reports concerning the DC 4/6/7 are also soon to be released by the FAA.

The NTSB was either unaware or was not concerned with the fact that The Department of Agriculture had hired a Airworthiness Program Director who was tasked with airtanker airworthiness and modernization. The research and recommendations that Ron Livingston had developed and presented was never used in the NTSB report. In fact, Mr. Livingston has stated that the heavy airtanker operators and the DOA are in compliance with the recommendations that the NTSB makes in its report (see Ron Livingston's submission to this committee). It is his belief that all the 33 large airtanker contracts should be reinstated based on the in-depth inspections that were recommended by the Sandia National Laboratories in 2003.

Prior to the release of the NTSB report there was no attempt by that agency to determine what each operator's capabilities were to maintain their aircraft, and maintain their aircraft in an airworthy state. The only operator that was examined was the operator that suffered the tragic loss of the two (2) aircraft in 2002. Not one other operator was visited, evaluated or consulted with. Rather, the NTSB made broad generalizations concerning the capabilities of the industry as a whole without regard to any due diligence or care for accuracy in the NTSB report. In doing so, the NTSB caused significant damage to the reputation of individual operators causing the real potential of future financial damage. This is an example of gross negligence and disregard for the companies that are involved in contracting Heavy Airtankers.

FAA Oversight/Civil vs. Public Aircraft

The NTSB states in their Safety Recommendation that "... public firefighting flights are not statutorily required to comply with most FAA regulations (including those pertaining to airworthiness and maintenance) nor, accordingly, are they subject to FAA oversight in those areas. Therefore, the Forest Service and the DOI, as the operators of these flights, are primarily responsible for ensuring the safety of these operations." In reality this does not reflect current practice with respect to the companies that operate heavy airtankers.

There is a perception at the national level of the FAA that little to no oversight is being conducted over the companies that operate heavy airtankers, and the oversight that is provided is nothing more than eye floss. On April 20 and 21, 2004 at Long Beach California, during Long Beech P2V Air Tanker Maintenance Steering Committee Frank Lieberman of the FAA Washington Office AFS 300 stated that he was very surprised and impressed to hear that there were approved Airtanker Oper-

ators MEL's, AIP's, Maintenance Programs, and STC's. In addition, he was pleased there was so much in the FAA Approved substantiation met for these aircraft.

Contractually, all contractors that provide aerial firefighting aircraft to The Department of Agriculture and the Department of Interior are required to possess U.S. Airworthiness Certificates and the operators must have Code of Federal Regulations (CFR) Part 137 Agricultural Operating Certificates by the FAA. In order to acquire an Airworthiness Certificate the operator must be in position of an FAA issued Type Certificate (TC) under FAR 121 that will specify operating limitations and maintenance requirements.

Having been issued TC's, Airworthiness Certificates, Pilot Certificates, Mechanic Certificates, and 137 Operating Certificates, the FAA is responsible for evaluating and determining that applicable regulations are adhered to. These regulations include Title 14, CFR's and determining what applicable regulations are adhered to.

These regulations include Title 14, CFR's 21, 25, 39, 43, 45, 47, 61, 65, 67, 91, 137 and in some cases 145. In order to determine regulatory compliance status of the operators, field inspectors are assigned inspection items that must be accomplished each year, in the same fashion as they do with CFR 135 and 121 certificated air carriers. The FAA's authority to perform the inspections cannot be avoided by the operator and are not affected by Department of Agriculture or Department of Interior decisions regarding air tanker operators. In reality this oversight continues into and during the wildland fire season. At no time are Neptune Aviations aircraft, as well as other operators are removed from FAA supervision.

In order to resume operations in 2002 after the tragic accidents each aircraft was required to undergo extensive inspections and repairs that were approved by the FAA. This also included a continuing airworthiness program for each aircraft and the wing structures specified in the AD (Airworthiness Directive) that was issued by the FAA. Adherence to this airworthiness program is under the oversight of the FAA.

While the debate continues on the national level of who is responsible for assuring that heavy airtankers are maintained in a airworthy state, the local FSDO's have been taking that responsibility and have been providing oversight over maintenance and flight operations, both during the period when the aircraft are under contract to The Department of Agriculture and The Department of Interior, and when they are not.

Airworthiness of the Current Airtanker Fleet

Shortly after the tragic loss of two aircraft in 2002 the Department of Agriculture, the Department of Interior and the FAA grounded the heavy airtankers pending an evaluation and examination of the wings of the respective aircraft. This was accomplished by contracting with various FAA designated engineering representatives. In order to resume operations in 2002 each aircraft was required to undergo extensive inspections and repairs that were approved by the FAA. This also included a continuing airworthiness program for each aircraft and the wing structures specified in the AD (Airworthiness Directive) that was issued by the FAA.

While I cannot comment on what each operator does for airworthiness inspections, I am sure that they each have similar inspection and repair procedures that have been approved by the FAA. In the case of Neptune Aviation Services, the aircraft received an expanded Depot Level inspection on each of the aircraft wings prior to returning to service in 2002. Each aircraft was completely dismantled from wing station 0—192 on both sides of the aircraft. This included the removal of upper stress panels, retardant tanks, fuel cells, liners and ribs. Full replacement of the internal doublers was completed using a modified version engineered and approved by a structural DER and the FAA. Detailed inspections (X-ray, fluorescent penetrate, detailed visual) of center wing and associated structures were completed. Outer wing structures were inspected for abnormalities. In the case of one aircraft, this included the replacement of one complete outer wing panel for preventive measures related to a previous repair prior to Neptune Aviation Services owning the aircraft. An aircraft was disassembled at the manufacturing breaks including outer wing panels and tail locations to verify Neptune Aviation Services was not missing any possible hidden areas of corrosion or concern. All wing attachment bolts were magnetic particle inspected. Sandia National Laboratories inspected Neptune Aviation Services in November 2002, they had only one operational recommendation directed to Neptune: to include a supplemental document incorporated in the AAIP for over weight landing.

This inspection program to assure airworthiness of Neptune Aviation Services aircraft has become incorporated in our yearly inspection process. Once every other year each aircraft undergoes an expanded Depot Level inspection of each aircrafts wings. These inspections entail over five hundred (500) additional man-hours per

aircraft every other year, which Neptune Aviation Services is not reimbursed. This inspection is identical to the inspection completed in 2002 and is in addition to the full airframe Depot Level inspection that each aircraft undergoes every eighth (8) year.

The NTSB in its Safety Recommendations expressed a number of concerns with the operation of ex-military aircraft and aging standard category aircraft. Some of these concerns are due to lack of diligence in conducting proper research or a through omission of fact.

In the CRS Issue Brief for Congress, Transportation Issues in the 108th Congress, undated May 18, 2004, the NTSB cites two (2) reports that were conducted on firefighting aircraft in the firefighting environment. The NTSB states on the bottom of page fifteen (15) and the top of page sixteen (16) "The Safety Board located studies performed in the early 1970s by NASA on the Lockheed P2V and the Douglas DC-6 that examined the effects of the low-level firefighting missions on these converted surplus military airplanes plus a Canadian study on civilian Fokker F27 also converted to the firefighting mission. The results of the P2V study indicated that there were no adverse effects to the airframe structure due to the tank installation and the mission flown. The data for the DC-6 study drew conclusions that indicated that, unlike the P2V study, the firefighting mission did impact the structural life of the airplane. The report concluded that, "The severity of maneuver load applications, in both magnitude and frequency of occurrence, is such that significant shortening of the structural life of the aircraft should be expected." In its Safety Recommendation, the NTSB included the information concerning the DC6 as well as the F27, however it did not cite NASA's conclusions concerning the P2V. Rather it implied that the studies done on the three aircraft drew the same conclusions.

Many operators are all ready taking into account the potential of significant shortening of the structural life of their individual aircraft types. In the case of Neptune Aviation we are using a Three (3) to one (1) ratio for the P2V in the wildland fire environment. For every hour of flight we are counting three (3) hours flight on the airframe. For the L-188, which we are in the process of conducting a Depot Level inspection, prior to tanking, we will be using a five (5) to one (1) ratio. This results in an accelerated maintenance program and provides an increase in safety and takes into account the potential shortening of the structural life of individual aircraft types.

Prior to the termination of the heavy airtanker contracts the industry, in conjunction with the Sandia National Laboratories, was in the process of gathering data to determine the magnitude of maneuver loading and the level of turbulence in the firefighting environment and the effects these factors have on the remaining operational life of the aircraft in question (NTSB Recommendation A-04-29—Part 3). The Sandia Laboratories installed on three (3) aircraft (Tanker 48, a P2V, Tanker 66, a DC-7 and Tanker 25 a P3-A) Structural Health Monitoring equipment. The data was gathered during the 2003 wildland fire season and was downloaded to a computer managed by the Sandia National Laboratories. The intent of this project was to provide the FAA with engineering evaluations and allow the FAA to revise the current FAA approved inspection programs of the individual operators. It is unfortunate that the Department of Agriculture terminated these contracts prior to the study generating the data needed to evaluate current airtankers, and future airtanker platforms.

The NTSB states in its Safety Recommendation that ". . . for many aircraft used in firefighting operations, very little, if any, ongoing technical and engineering support is available. This is because either the manufacturer no longer exists or does not support the airplane, or the military no longer operates that type of aircraft" (page 7). While this may be the case for the aircraft that were involved in the tragic accidents in 2002, this is not the case for the remaining fleet of aircraft. Both Lockheed and Douglass provide full OEM support for their aircraft. This includes the DC-4/6/7, the P3-A and the P2V. Neptune Aviation has a contract with Lockheed to provide full OEM support and has enjoyed a productive relationship with Lockheed. Neptune Aviation also has acquired from Lockheed the full engineering drawings and specifications on the P2V aircraft. In addition Neptune Aviation has the full engineering drawings from Curtis-Wright and Westinghouse, along with the ownership of the original type certificate data sheet specifications (TCDS) for the J-34 turbojet engine. . This support allows Neptune Aviation to assure repair to original new standards and remanufacture to original type-certificate data sheet specifications (TCDS). Other operators have similar resources at their disposal.

Because the NTSB failed to evaluate the entire industry their research failed to uncover that the operators of heavy airtankers have access to OEM engineering support, that the majority of the operators also have complete records for their aircraft and that the Sandia National Laboratories in conjunction with the FAA were al-

ready involved in developing a dynamic maintenance program for these aircraft. That in fact, the operators of the heavy airtankers had already conducted Depot Level maintenance base lines for critical structures within their aircrafts wings. The lack of due diligence in their research resulted in the NTSB coming to the incorrect conclusion on page seven (7) of their Safety Recommendation. "Therefore, it is apparent that no effective mechanism currently exists to ensure the continuing airworthiness of the these firefighting aircraft. Specifically, the maintenance and inspection programs currently being used do not adequately account for the increased safety risks to which these aircraft are now exposed as a result of their advanced age and the more severe stresses of the firefighting operating environment." In fact all the operators are involved in a dynamic FAA approved maintenance program that takes into account the concerns the NTSB identify in their Safety Recommendations.

Conclusions

There is a wide spread misconception in Washington, D.C. concerning the current state of the heavy airtanker Industry. The NTSB, by coming to a conclusion through faulty research, and lack of due diligence came to the conclusion that there was no effective mechanism to assure the continuing airworthiness of the Heavy Airtankers. Further, in doing so they made the recommendation that the DOA and DOI should take responsibility to assure that the aircraft in question should be airworthy. By coming to this conclusion without any basis in data, they in effect placed the DOA and DOI into regulatory situation which the DOA and DOI are ill suited to accomplish. It is unfortunate that the NTSB failed to conduct their research on the Heavy Airtanker industry with any form of due diligence, for if they had they would have concluded that there are indeed mechanisms in place to assure that these aircraft are indeed maintained in a airworthy state. The FAA on the national level does not have an understanding of what is occurring on the Local FSDO level with respect to FAA oversight and the level of interaction between the FAA and the operators of Heavy Airtankers. In addition there is a perception that the companies that operate these aircraft are a bunch of cowboys who fly and maintain their aircraft by the seat of their pants. This may have been the case in the past for some operators, however the Heavy Airtanker Industry has undergone a significant evolution in the past ten (10) years, and a radical revolution of its maintenance and flight programs in the past two (2) years under the oversight of the Sandia Laboratories and the FAA. The costs that are associated with the expanded maintenance have been, for the most part, born by the companies involved in Heavy Airtanker operations.

The FAA has failed to recognize that it has, all along, been involved in approving maintenance programs and in assuring the airworthiness of these aircraft. At the Local FSDO level of the FAA there is no doubt that the operators are under constant oversight, even while on contract to the Department of Agriculture for firefighting.

The Department of Agriculture has become concerned that they are libel for future and past Heavy Airtanker accidents because the aircraft are considered "public aircraft". However, the courts do not seem to share that same opinion. The Federal Government has only been successfully sued once in the matter of a Heavy Airtanker accident. In that case, the accident was directly caused by a USFS lead plane colliding with an airtanker on short final for landing at Ramona California. In all the other cases involved in the loss of a heavy airtanker the courts have ruled that the liability of aircraft maintenance and flight operations lies with the individual operators. Further, if there is a desire to remove the question of "Public vs. Civil" aircraft in relation to Heavy Airtankers there are contractual ways to remove that concern.

Lastly, The Department of Agriculture and The Department of Interior have decided to focus their attention on solely the question of airworthiness on the Heavy Airtankers. In their report the NTSB refers to all aircraft in the wildland fire environment. Many of the aircraft that are replacing the Heavy Airtankers are not under any form of FAA oversight. Their maintenance is conducted out side of any repair station, avoiding the involvement of the FAA, yet The Department of Agriculture and The Department of Interior are contracting with large numbers of these aircraft.

It appears that no one is a fan of Harry Truman in any of the agencies on the national level that are dealing with the Heavy Airtanker issue; no one is willing to accept the responsibility that "the buck stops here". In the meantime the operators of Heavy Airtankers are be held hostage by the FAA, DOA, DOI and NTSB in a series of finger pointing with no one taking any responsibility. The result being, the public is being denied a critical resource in fighting wildland fire, and in the process

putting their property and lives at risk. It is my concern that we are involved in a war of attrition, the finger pointing will continue until the last of the companies have expended the last of their financial resources and have gone out of business. The resulting loss would be fifty (50) years of wildland fire experience.

The CHAIRMAN. Thank you very much, Mr. Timmons.
Mr. Grantham.

**STATEMENT OF WILLIAM H. GRANTHAM, PRESIDENT,
INTERNATIONAL AIR RESPONSE INC.**

Mr. GRANTHAM. Thank you to the Committee and particularly you, Senator McCain, for allowing me to testify here today. I want to start off by saying that the other operators here and myself and our company totally agree with what Mr. Timmons' statement he has just read.

On May 10, 2004, the Departments of Agriculture and Interior announced cancellation of the large air tanker contracts. I would like for my testimony to be entered in the record, too.

The CHAIRMAN. Without objection.

Mr. GRANTHAM. Thank you, sir.

This action resulted in the loss of a critical firefighting resource, termed a national resource by the sitting President. The action transfers an unacceptable risk to other firefighting resources and leaves individuals, states, forests, and urban areas and wildlife interface communities in an unprotected position during what has been projected to be one of the worst fire seasons in history.

The basis of the contract termination is the recently released NTSB safety recommendations. While their assessments may have been reflecting a situation that existed in 2002 among some companies, it fails to take account of the strides of the last 2 years. It appears the NTSB has not been made aware of the cooperative, collaborative efforts made with industry and the FAA. Neither was it made aware of efforts with the U.S. Forest Service and BLM-sponsored programs that included Sandia National Laboratories, which resulted in strides to improve safety of the existing airtanker fleet.

The NTSB letter cited: "There appears to be no effective mechanism in place to assure airworthiness of these firefighting aircraft." This statement does not recognize that immediately following the blue ribbon panel's report on aerial firefighting issued in 2002 operators began cooperative programs with the FAA, Forest Service, BLM-sponsored program, Sandia National Laboratories, and the airworthiness assurance group. Deficiencies that were noted in both the blue ribbon panel and NTSB have either been addressed or in works of progress to be corrected.

An effective mechanism has been developed and can in fact assure the continued airworthiness of the majority of the fleet. The industry has fully cooperated and complied with any and all requirements that have been issued by FAA, USDA, Forest Service, BLM, and Sandia up to the cancellation date of the contracts.

Actions compiled include: airworthiness directives, enhanced aircraft inspections, review of aircraft inspection programs, personal qualifications, recordkeeping, and many other prerequisites prior to the start of 2003 and 2004 contract periods. Aircraft loads and structures health monitoring programs have been initiated and great progress was being made to satisfy this crucial need for infor-

mation that is meant not only to ensure structural airworthiness of the current firefighting fleet, but the suitability of any future aircraft, modified and purpose-built.

Statements have been made regarding the lack of FAA oversight of firefighting aircraft. Our industry records exist to prove all contractors receive visits from respective FAA district offices, I believe around 1,500 hits in the last year is what the FAA uses for terminology, which is quite a few. All the firefighting aircraft that were withdrawn from use in 2002 as well as those whose contracts were terminated have FAA airworthiness certificates, FAA-approved supplemental type certificates issued for the special purpose of firefighting, FAA-approved inspection programs. Private engineering firms with FAA DER's have been hired. Furthermore, all operations are conducted in accordance with Title 14 CFR Parts 43.61, 65, 91, 137, and other appropriate airworthiness regulations.

At no time has the FAA found it necessary to take action on the certificates or flight status of these aircraft other than issuance of airworthiness directives, with which operators of affected aircraft immediately complied.

Incorrect statements have also been made about the lack of records pertaining to aircraft prior usage. These statements are also incorrect. At no time has any operator been visited by the NTSB personnel to look at airtanker records other than during the specific investigations related to the accidents of 2002.

With regard to the necessity to upgrade the fleet and modernize equipment, the industry concurs and always has concurred with this necessity. No contractor advocates or desires to operate any aircraft that is found to either be unsafe or no longer able to have its airworthiness assured. In accordance with recognized FAA-approved procedures, it is the desire and commitment of our industry to work collaboratively with the agency to develop a safe, responsible, and economical plan of transition to an evolving, appropriate fleet of aircraft. Whatever perceived problems remain can be addressed through cooperation between industry, FAA, and the responsible accountable leaderships within the agencies.

We therefore respectfully request the Committee give due consideration to providing full support of the current and continuing efforts of industry, FAA, Sandia, and the Inter-Agency Air Tanker Board to immediately restore all available firefighting aircraft to operational status. We further request direction and support be given to the agencies with industry to begin a process of determining a safe, responsible, sustainable economic transition plan, appropriately funded, to ensure our Nation is not placed in this situation again.

Thank you, Chairman, for the time.

[The prepared statement of Mr. Grantham follows:]

PREPARED STATEMENT OF WILLIAM H. GRANTHAM, PRESIDENT,
INTERNATIONAL AIR RESPONSE INC.

I would like to thank this committee and particularly Chairman, Senator McCain, for this opportunity to provide you with facts related to the perceived safety concerns which resulted in cancellation of the large airtanker contracts by the Departments of Agriculture and Interior.

On May 10, 2004, the Departments of Agriculture and Interior announced the cancellation of the large airtanker contracts. This action has resulted in the loss of

a critical firefighting resource, termed a "National Resource", by a sitting President of the United States. The action transfers unacceptable risk to other firefighting resources, and leaves individual states, forests and urban wildland interface communities, in an under protected position during what has been projected to be one of the worst wildfire seasons in our history.

The basis for the contract termination is the recently released NTSB Safety Recommendation. While their assessment may have reflected a situation that existed in 2002, it fails to take into account the strides of the last two years. It appears the NTSB has not been made aware, of the cooperative and collaborative efforts made by industry and the FAA. Neither was it made aware, of efforts with the USFS/BLM sponsored programs that included Sandia National Labs, which resulted in strides to improve the safety of the existing airtanker fleet.

The NTSB Letter cited, "There appears to be no effective mechanism in place to assure the airworthiness of these firefighting aircraft". This statement does not recognize that immediately following the Blue Ribbon Panel's report on Aerial Firefighting issued in December of 2002, operators began collaborative programs with the FAA, and the Forest Service-BLM sponsored program with Sandia National Labs Airworthiness Assurance Group. Deficiencies noted by both the BRP and the NTSB have either been addressed or were works in progress. An effective mechanism has been developed that can in fact assure the continued airworthiness of a majority of the fleet.

The Industry has fully cooperated and complied with, any and all requirements that had been issued by the FAA, USDA/FS, BLM and Sandia up to the cancellation date. Actions complied with include Airworthiness Directives, enhanced aircraft inspections, review of aircraft, inspection programs, personnel qualifications, record keeping and many other prerequisites prior to the start of the 2003 and 2004 contract periods. Aircraft Loads and Structural Health Monitoring programs have been initiated and great progress was being made to satisfy this crucial need for information, that is meant to not only assure the structural airworthiness of the current firefighting aircraft, but determines the suitability of any future aircraft either modified or purpose built.

Statements have been made regarding a "lack of FAA oversight" of firefighting aircraft and our industry in general. Records exist that prove all the contractors receive visits from their respective FAA District Offices. *ALL* firefighting aircraft that were withdrawn from use in 2002 as well as those whose contracts were terminated have FAA Certificates of Airworthiness, FAA Approved Supplemental Type Certificates issued for the special purpose of firefighting, FAA Approved Inspection Programs, private engineering firms with FAA DER's have been hired. Furthermore, all operations are conducted in accordance with Title 14 CFR Part 43, 61, 65, 91, 137 and other appropriate airworthiness regulations. At no time has the FAA found it necessary to take action on the certificates or flight status of these aircraft, other than the issuance of Airworthiness Directives with which operators of affected aircraft immediately complied. Incorrect statements have also been made about a lack of records pertaining to aircraft prior usage. These statements are also incorrect. At no time has any operator been visited by NTSB personnel to look at airtanker records, other than during the specific investigations related to the accidents of 2002.

With regard to the necessity to upgrade the fleet to modern equipment, industry concurs, and has always concurred with this necessity. No contractor advocates, desires or would operate any aircraft that is found to be either unsafe or no longer able to have its airworthiness assured, in accordance with recognized FAA approved procedures. It is the desire and commitment of our industry, to work collaboratively with the agencies to develop a safe, responsible and economic plan of transition, to an evolving appropriate fleet of aircraft.

Whatever perceived problems remain; can be addressed through cooperation between our industry, the FAA and responsible, accountable leadership within the agencies.

We therefore respectfully request this committee; give due consideration to providing its full support of the current and continuing efforts of industry, FAA, Sandia and the Interagency Airtanker Board, to immediately restoring all available firefighting aircraft to operational status. We further request direction and support be given to the agencies to work with industry, to begin the process of determining a safe, responsible, sustainable and economic transition plan, appropriately funded to ensure our Nation is not placed in this situation again.

Thank you.

The CHAIRMAN. Thank you, Mr. Grantham.

Mr. REY, you mentioned that you made the decision—when was the decision made, a week ago was that announced?

Mr. REY. The reconfiguration decision was finalized yesterday.

The CHAIRMAN. No, the decision to cancel the contracts on the tankers?

Mr. REY. That was May 11.

The CHAIRMAN. May 11, about 3 weeks ago.

Why was not this decision made last fall?

Mr. REY. Last fall we were still working with Sandia Laboratory and FAA and the contractors on the modified operating procedures and the more robust inspection and maintenance program and communicating that information as we went to NTSB. So it was our hope that, as I said in my statement, that that would be adequate to assure the airworthiness of the tanker fleet.

The CHAIRMAN. But what actually happened was that, instead of making a decision to ground the fleet so that perhaps Sandia's recommendations, the NTSB, the FAA recommendations which you have been given could have had time to have been implemented before we are into the fire season, you delayed and made the decision at a point where now we have actual fires going on.

Mr. REY. The point of the work with Sandia was to implement the recommendations of the Blue Ribbon Commission and FAA. So that was in process.

The CHAIRMAN. And were Sandia's recommendations implemented?

Mr. REY. They were as far as we received them. We were still waiting for additional information from Sandia.

The CHAIRMAN. Well then, how could the Department of Interior determine, and I quote, "There is no method currently in place to adequately ensure the safety and airworthiness of the aircraft"? Was the money to Sandia wasted?

Mr. REY. That was a quote from the NTSB report. I think what our reading of the NTSB's conclusions, our interpretation of their conclusions, was that they felt that the work with Sandia was either inadequate and/or not coming online fast enough to assure that the aircraft could be safely flown in this fire season.

The CHAIRMAN. A decision that could have been made last fall, right, Ms. Conners?

Ms. CONNERS. Well, sir, we were in discussion with the Forest Service as a party to the investigation, so where we were headed was being discussed, but we did not issue our formal recommendations until April 23.

The CHAIRMAN. Until when?

Ms. CONNERS. April 23, sir, is when we issued our final recommendation letter.

Mr. REY. As it turns out, it was fortuitous that the final decision came out at the outset of the fire season, because if we were into the middle of the fire season it would have been significantly more difficult to contract the additional aircraft necessary to reconfigure the fleet.

So it would have been somewhat better had we gotten their final report last fall, but nevertheless not crippling to our firefighting effort to get it when we got it.

The CHAIRMAN. Well, my point is that the FAA has now given you some guidelines—right, Mr. Sabatini?

Mr. SABATINI. Yes.

The CHAIRMAN. And you are announcing these today, after announcing on May 11 that the contracts were canceled. It is very bad timing. We are now faced with a crisis situation. We were not last fall because of the end of the fire season. I would have hoped that that would have been taken into consideration in the decision-making process. Obviously it is not.

Mr. Rey, anybody who understands the speed and range of a helicopter as opposed to one of these aircraft does not agree with your assessment that somehow these are adequate replacements. I have been around too long in aviation to buy that one.

Senator Wyden.

Senator WYDEN. Thank you, Mr. Chairman.

My sense is, with Chairman McCain and colleagues here putting some heat on, and we are going to keep it on, we are going to figure out a way to deal with this now and we are going to have people reporting and the like. But my sense is that there is still going to be tremendous confusion about accountability.

I would like to ask each of you whether you think it would be clearer and simpler to just put FAA in charge of safety issues. That is what Congress recommended in 1993. It would require a change of statute to do it. But it seems to me that once the hot light of Congressional oversight passes and we get through this we will be back in the same vacuum of responsibility that we are in now.

So let me see if I can get you all on the record on this, on changing the statute and putting FAA in charge of safety issues. Why do we not start with the Forest Service.

Mr. REY. That is an option available to the Congress. It would require a statutory change, given the current configuration.

Senator WYDEN. But would you support that now?

Mr. REY. We are moving forward as aggressively as possible with FAA—

The CHAIRMAN. Try to answer the question, Mr. Rey.

Senator WYDEN. Yes or no? I am interested in working on a bill so that there is clear straightforward authority on safety. It is what Congress recommended. I would like a yes or no answer about whether or not you would support that.

Mr. REY. We would not oppose that.

Senator WYDEN. Good, very good.

The FAA?

Mr. SABATINI. We will certainly follow the will of the Congress.

Senator WYDEN. Yes or no with respect to whether you would support it?

The CHAIRMAN. I would ask the witnesses to answer the question. It is pretty straightforward questions. We would like yes or no answers, affirmative or negative. You can elaborate if you would like. But I am growing a little weary of people coming before this committee and not answering straightforward questions with straightforward answers.

Mr. Sabatini, your question is very clear.

Mr. SABATINI. I could not support that, and I would like to elaborate. I think that the United States military is a shining example

of how public aircraft can be operated very safely. They are a world-class organization. They have a competency and an expertise equal to what we have in the civil side of the FAA.

Congress back in 1994, this very committee, debated this very issue and the changes that they made was to take the transportation of people that was not inherently government and place that under FAA responsibility and jurisdiction. But it made very clear and very explicitly stated that there are operations which are so inherently dangerous that they do not fit into the civil side of the fleet and that it should remain the responsibility of the operating authority, such as the Forest Service or the military, in activities such as firefighting, search and rescue, et cetera.

So in answer to the question, Senator, I would not like to see that.

Senator WYDEN. Mr. Timmons, Mr. Grantham—

The CHAIRMAN. Thank you very much, Mr. Sabatini.

Senator WYDEN.—yes or no?

Mr. GRANTHAM. Yes.

Mr. TIMMONS. Yes, I would agree.

Ms. CONNERS. Sir, we have a five member partisan board. I cannot speak for the other members.

Senator WYDEN. Just you, just your opinion?

Ms. CONNERS. I will give you my opinion. I believe that it would be a slippery slope of expansion of policy. You would have incredible resource requirements for the FAA. When you look at, as suggested by Mr. Sabatini, some of the other safety operations such as the Coast Guard helicopter search and rescue, police operations, et cetera and so forth, the expansion is so far, taken to its ultimate conclusion beyond 33 tankers or even 700 vessels, airframes, that are used in firefighting, that I think the Congress needs to look very seriously at it beyond this immediate moment on such a policy change.

That is the opinion of only one board member, not the board itself.

Mr. REY. If I could elaborate just for a second, because I did not do so priorly. Whether Congress makes that change or not, we are committed to working with FAA and they are committed to giving us their expertise to solve this problem, and we will move to solve it.

Senator WYDEN. I guess that is what I am skeptical of. I think once oversight and the exposure passes I question that. And it is not a question of your desires, Mr. Rey. The FAA provided the Forest Service and various other people with their phone number and yet I do not see any evidence of any real follow-up.

I guess I got three out of five votes here today to put the FAA in charge of safety, but it is an issue I am going to continue to pursue.

Let me ask about one other matter because I know colleagues have questions. I have real reservations about whether the FAA has the information that is needed now about the stresses of the firefighting environment and that there is not adequate science on it. What does this panel think about the idea of putting black box flight data recorders on firefighting planes? Obviously there would be questions about cost and the matter of installation and the like.

But obviously something that would ensure that we have got the data that realistically looked at what was going on there strikes me as constructive.

Let us just go down the row. Mr. Grantham, is this a sensible thing to be looking at?

Mr. GRANTHAM. Yes, it is, sir. Actually, after the 2002 tragic accidents the FAA paid to install telemetry wiring equipment in our two C-130A aircraft. They have operated continually since 2002. They operate on U.S. Department of Defense contracts. We fight fire in foreign countries since the U.S. Forest Service won't use them.

The equipment takes readings all through the wings area, the fuselage, many points. It is on a disk. It can be pulled any time you want to pull it. It is analyzed. And it is not only for the current airworthiness safety measures for that aircraft, but it is for establishing a future baseline for safety of these aircraft and to determine what the aircraft is doing and what it is not doing and what the stress loading is.

As of this date, it has not pulled up any data that shows that there are excessive stresses on that aircraft in this mission, and it has been used. Both of our aircraft were on military contract last week. One of them is operating this week. And they continually take these readings and it is supplied to the FAA.

Senator WYDEN. Mr. Timmons, the rest of the panel, black box recorders or something similar?

Mr. TIMMONS. I would concur. I have no problems with the black box. Sandia has already put health monitoring equipment into a P2V, a DC-6, and a P3A. That data was gathered through the 2003 fire season. The data has not been analyzed and with the cancellation of these contracts there will be no more data coming in. So I would encourage both.

Senator WYDEN. Mr. Rey, Mr. Sabatini, Ms. Conners? Because that is the point. With the cancellation of the contracts, we are not going to get this data, and I am interested in these policies that are going to allow us to track the science in the future.

Mr. Ray, what do you think of the idea?

Mr. REY. I think, as Mr. Timmons said, that we are beginning to collect that kind of information under the Sandia protocol. I do not have any problem with that.

Senator WYDEN. Good.

Mr. Sabatini?

Mr. SABATINI. I would support flight data recorders.

Senator WYDEN. Good.

Ms. CONNERS. The Board is on record in supporting data recording in all modes of transportation.

Senator WYDEN. Mr. Chairman, I know colleagues want to ask questions, but I am very pleased again that you are holding these hearings. I think that clearly there has been some confusion about the key safety questions. Certainly the Forest Service at times thought the FAA was looking at issues of ongoing inspection and compliance when clearly FAA was not doing any such thing.

So I hope that, through clarifying the safety oversight responsibility—I continue to believe that we ought to do what Congress recommended, and that is to put FAA in charge of safety issues, and

then following the science with something along the lines of a requirement for a black box recorder on these flights so that we can track stress. Those are the kinds of suggestions that are going to help us turn this around.

But I am very appreciative as a westerner of your holding these hearings and giving us a chance to force as much change out of this process as we can.

The CHAIRMAN. Thank you.

Senator BURNS.

Senator BURNS. Thank you, Mr. Chairman.

I want to start—we have already asked some of the questions that I was going to ask, but I want to clarify one thing here. Mr. Rey, this signing of the MOU with the FAA and using their recommendations on this thing, and say the operator-by-operator basis to make your judgment, how quickly could you put qualified tankers back in the air? Have you got any estimate on that?

Mr. REY. That was a question that we struggled with yesterday with our engineers, both at FAA and the Forest Service. The best answer we can give you right now is the shortest time period and the longest time period. The longest time period is never. Some of these aircraft—

Senator BURNS. That is like the market: How low can it go? Zero.

Mr. REY. Right. Some of these aircraft may not be able to secure and provide the data necessary to assure their airworthiness. I will sort of take on faith that the two operators here can provide that. I suspect some others will not be able to. So that is the outside number, never.

The inside number is that we believe as we send them the request for information to the contractors today, if they can turn around that information request relatively quickly, we can have the results and recommendations to put before the NTSB in about 30 days time.

Senator BURNS. Mr. Chairman, that 30 days seems like a long time. If you have gotten the information—Mr. Timmons, give me a real world estimate. They require this information. You supply them that information as correctly as you can, and from my understanding you have as good records as anybody in the business. How long would it take you to get those records to the Forest Service?

Mr. TIMMONS. With the records that we have in place, if they are not asking for any additional engineering data, we could acquire and send them those records probably within 2 working days.

Senator BURNS. And then, then you are going to forward those, those records, to who to make a decision? Are you going to take it to the FAA or the NTSB?

Mr. REY. We will sit down with the FAA-designated engineering representatives and review the information to assess first whether it's complete, second whether it is adequate to assure a recommendation of airworthiness, third to evaluate whether more information will be needed, and we will make that a fair evaluation.

Then, wrapping all that together, if we conclude that the answer to those questions is yes and not no, then we will submit that to the NTSB to see if we can get some modification of their recommendations.

Senator BURNS. Well, the NTSB, they are not a regulatory agency. They investigate and report.

Mr. REY. That is correct, but they often continue to investigate agencies' ongoing compliance with their recommendations. It would be our preference here, in this case, to give them that material, to see if they want to give us any advice per their original recommendations. They may choose not to, in which case then we and the FAA will have to make a decision.

Senator BURNS. Given that information, Mr. Sabatini, how long would it take?

Mr. SABATINI. The responsibility to provide the data to demonstrate compliance with the criteria that has recently been provided to the Forest Service rests with the operator, in essence the applicant. The Forest Service is positioned today, with the expertise that they have developed over time with our assistance—I want to make clear, with our assistance—and they can now have available to them, we have provided them a list of designated engineering representatives who are designees, authorized by the FAA to do work on behalf of the FAA, but who are not FAA employees. They are available to the Forest Service.

They and they alone are responsible for the decision against the criteria which we helped them develop. If they wish to submit that data to us for review, we will continue to support them and lend our significant expertise in that area. But the final decision as to returning those aircraft to service would be the responsibility of the public organization responsible for the public operation—fire-fighting.

Senator BURNS. I want to make it very clear what my intent is with this line of questioning. I know what bureaucratic run-around is and I want to prevent that if I can. But I realize you go down there in this, there is going to be some faceless little person, and their eyes are very close and they speak in tongues, who can give us a run-around and we will not get one damned airplane off the ground or put out one fire.

That is what concerns me more than anything else, is the process here more than anything else. If an operator has the records and complies with everything that they are asked to do, why can't that be dealt with in a timely manner so everybody can get back to the business of protecting our national forests and our national treasures?

Mr. REY. There is no reason they cannot. If they have the records, if the records are adequate, if the records demonstrate that the vehicles are airworthiness—those are three ifs—then we are committed by the work that we have done with FAA's guidance to try to give them every opportunity to get back in the fleet, because they are cost-effective. But if that does not happen—and I hazard a guess that it will not happen for some number of the large airtanker fleet. If it does not happen for any of them, then we are confident that we will fight fires and maintain a nearly 99 percent success rate at initial attack with the reconfigured fleet.

The Chairman is correct, helicopters do not get to the fires as fast. That is why what we have done is retained more of them, because we are going to deploy them in a more dispersed fashion.

Once they are there onsite, they have other advantages. Their turn times are shorter and they can deliver more water and retardant.

So one of the things I want to leave for the benefit of the confidence of your constituents is that we have reconfigured the fleet in a fashion that is going to result in an effective firefighting effort. That being said, if those things occur that we have just discussed, if they occur to the satisfaction of the Forest Service and the Department of the Interior, with FAA's expert counsel, and we get some judgment that we are making progress against NTSB's recommendations, they will have the opportunity to return to the fleet and we will use them gladly.

Senator BURNS. Thank you, Mr. Chairman.

The CHAIRMAN. Senator Boxer.

Senator BOXER. Thank you, Mr. Chairman.

I am very concerned, Mr. Rey, that you do not exhibit the attitude of a can-do person to me, really. You are telling us to tell our people not to worry. Let me tell you, I am not going to lie to my people, because I have got your plans for firefighting resources in southern California. Here is what you do. You have taken away 22 of these very important federally contracted airtankers with a capacity between 1,800 and 3,000 gallons. You are giving us five more helicopters.

Now, how am I going to go to my people with a straight face and tell them they are safer than they were? You are sitting here—and I can tell because I am watching you and I am listening to you and you say: Even if we do not have one tanker. You do not intend to put any of them back.

I agree with Senator Burns. He gets it, too.

Mr. REY. If we did not—

Senator BOXER. Wait. I am going to ask you a question.

Mr. REY. OK.

Senator BOXER. But I have to say, I am confused. Ms. Conners says to us very clearly "By statute authority for the safety oversight of these operations," meaning the tankers, "belongs to the agency or department responsible for the operation." Did you not know you were responsible for the safety before?

Mr. REY. The responsibility devolves to the operator of the aircraft.

Senator BOXER. That is not what Ms. Conners said. Is that correct, Ms. Conners? Did you not say what I just said? "By statute, authority for the safety oversight of these operations belongs to the agency or department responsible for the operation?"

Ms. CONNERS. Yes, ma'am, we said that in this case the Forest Service and the Agriculture Department—

Senator BOXER. Thank you.

Ms. CONNERS.—would be primarily responsible for the operation.

Senator BOXER. Exactly.

Who in your shop was responsible when those accidents occurred? Who did you turn to and say, what work have you been doing?

Mr. REY. We turned to our Fire and Aviation Branch that continues to work on the safety of these aircraft and asked them to charter an independent review of the safety of the aircraft, which we did, to install additional operation and maintenance require-

ments, and configure some of the operation of the aircraft to try to assure airworthiness. That effort has been ongoing since December 2002.

Senator BOXER. So do you have confidence in those people in your shop, since they are required under law to be responsible? Do you have confidence in them?

Mr. REY. I have confidence in them as far as their expertise goes. To the extent that we are solely responsible for assuring airworthiness without the advice of FAA, I do not think they are adequate for that purpose. That is why we have sought FAA's and received FAA's advice to assist.

Senator BOXER. Well then, why would you not endorse Senator Wyden's point? You are sitting here telling us your shop is not adequate.

Mr. REY. By itself.

Senator BOXER. Yes.

Mr. REY. I did not oppose his point. I just said that—

Senator BOXER. Well, your answer was: I would not oppose you. And if you need more resources, why do you not tell us? But Mr. Rey, we need an honest evaluation. You are telling us you have a shop, but you do not have full faith that they have enough expertise to handle the deal. So instead of coming to us and saying to our Chairman, we need more resources to get some top people on board absent a change in law, you are saying: We are just going to ground these things.

The bottom line is I have no confidence that you have any intention to allow these tankers to do their job. I am telling you that my people on the ground are saying they are absolutely necessary.

Mr. REY. I would dispute the proposition that they are absolutely necessary—

Senator BOXER. What is your background in fighting fires?

Mr. REY. I have a forestry background and we have considerable expertise—

Senator BOXER. In fighting fires?

Mr. REY.—in firefighting.

Senator BOXER. Do you have as much as the people who are the fire chiefs on the ground? Do you have the same background as they have?

Mr. REY. I have staff with superior expertise in wildland firefighting.

Senator BOXER. Superior to the people who are doing this every day?

Mr. REY. They are doing it every day.

Senator BOXER. OK. So do they not agree with my people who say in reality it is pretty scary going into this type of season without this resource, they have a major effect on fighting? You would disagree with that?

Mr. REY. I disagree with the statement that they have a major effect on fighting large wildland fires. They have a major effect in two narrower areas: initial attack when access is an issue; and extended initial attack to slow down a fire.

Senator BOXER. Mr. Chairman, let me tell you what I am getting from this witness between the lines here. I do not see someone that

is very motivated to fix this problem in the short term. I am very concerned about it.

Mr. Timmons, do you have—since you and Mr. Grantham—

The CHAIRMAN. Maybe Mr. Rey would like to respond to that.

Mr. REY. I would like to respond to that, because maybe I have not been—

Senator BOXER. But could I finish this question?

The CHAIRMAN. After he responds, you can have extra time.

Senator BOXER. Thanks.

The CHAIRMAN. Go ahead.

Mr. REY. Maybe I have not been sufficiently enthusiastic, but let me reiterate what I said in my initial statement. As a matter of equity and cost effectiveness, it would be helpful if we can assure the airworthiness of the large airtanker fleet and restore some portion of them to our firefighting effort. We are doing that on a very quick step basis, with FAA's assistance. In a matter of less than a couple of weeks, FAA has provided us with an engineering profile, the necessary data call that we have to make on the part of the contractors, as well as designated engineering representatives to assist our limited staff.

Senator BOXER. Thank you. You have told us this before. But I come back to the point—and sometimes when a witness says something they do not even realize, when they say: Or even if we do not have any tankers you are going to be safer. I will tell you that is an outrageous statement. I see what your plans are for my state and we will not be safer. I continue to believe that in your heart of hearts, from what you have said to the House people, from what you have said to us, this does not appear to be something that is upsetting to you.

I would just like to ask the gentlemen who know about these aircraft if they agree with Mr. Rey on the effectiveness of the tankers?

Mr. GRANTHAM. We do not agree with Mr. Rey.

Senator BOXER. Could you give us some facts on it?

Mr. GRANTHAM. Well, we can give you the same facts. I have been an initial attack airtanker pilot for around 38 years. I forget how many. And we have been in business that long, too. The large airtanker probably has been historically the most useful tool in combatting wildland fires.

One of the problems that has happened in the last 10 to 15 years, the Forest Service has mismanaged even using the large fixed-wing airtanker. As Mr. Rey now states, it is ideal for initial attack and follow-up attack. The firefighting methods have switched from early morning times of day when you have advantage over the fire to fighting it during the critical burn period of the day, and this is not a good firefighting method which the Forest Service has gone to. It is more dangerous on equipment, personnel, adds more stress loads to the aircraft with the turbulence, and you have less advantage over the fire. You have to fight fire early in the morning.

But along with the helicopter and the single-engine airtanker and the other equipment, which is also—they are susceptible to the same dangers we have and the same structural problems. None of them are going through these same FAA certification situations the large airtankers are going through. So they are out there adding

this equipment on in a more unsafe atmosphere than the large airtanker fleet that is the most heavily inspected fleet today that you have, probably the safest fleet to put back into existence.

The CHAIRMAN. Now, Mr. Grantham, it cannot be the safest if it had three tragic accidents now. Let us put it in context here.

Mr. GRANTHAM. Firefighting is inherently dangerous. They average probably—

The CHAIRMAN. But these tankers crashed, the helicopters did not and others did not.

Mr. GRANTHAM. Helicopters do crash.

The CHAIRMAN. And they were because of failure, material failure.

Mr. GRANTHAM. I think you can look to individual companies for some of that problem.

The CHAIRMAN. I am sure the families do not look at individual companies, Mr. Grantham. Go ahead.

Senator BOXER. Well, the point is that they are effective. The safety issue is what needs to be addressed, and we all agree on that. The problem that I have and I think Senator Burns has, just listening to him, is we want to make sure that you have—we have accidents all the time. It is horrible, lots of aircraft. But we make sure that we have in place the best kind of system to make sure that these planes are airworthy.

In the law today, you are responsible for that. You have said here you do not think you have enough expertise in your shop. I find that troubling, Mr. Chairman, because if they do not have enough expertise in their shop, A, we have to either change the law or, B, get them more money so they can get the expertise so that we can get these tankers up and running again. I have a slew of people who have testified as to the importance of the airtankers.

Here is Tom Innocencio, Assistant Manager at the airtanker base in San Bernadino, which is run by the U.S. Forest Service, said: "There is no question that airtankers saved homes in the Serrito fire between Corona and Lake Elsinore."

So I mean, the people on the ground, they seem to believe that this is a very important tool. I believe it is as well. And I share the Chairman's concern. We want them to be safe. But let us make it—let us be can-do about it, or we would never fly any plane, because there has to be a way we can make this work.

Thank you, Mr. Chairman, for your patience.

Mr. REY. I will be as can-do as I can be. There is an option C, Senator Boxer, and that is for the FAA to provide us the assistance they are and, hopefully, if the operators can provide the information we need, to then get them airworthy doing that. That is just what we are doing. As I told Senator Burns, with audible gasps from our engineering staff at both the Forest Service and the FAA behind me, that if everything works right in terms of their ability to provide the information and the information does provide the necessary basis for assuring their airworthiness, we can have that done in 30 days or thereabouts.

Senator BOXER. Thank you.

The CHAIRMAN. More time, Senator Boxer?

Senator BOXER. No, thank you.

The CHAIRMAN. Senator Cantwell.

**STATEMENT OF HON. MARIA CANTWELL,
U.S. SENATOR FROM WASHINGTON**

Senator CANTWELL. Thank you, Mr. Chairman.

I have a question, Mr. Rey. It is not often I have a chance to ask you a question before this committee, but we have had many exchanges before the Energy Committee. We are about 30 days away from the anniversary, the 3-year anniversary of the 30-Mile Fire, in which we lost several young firefighters in the state of Washington. So safety for us has been a primary concern. While the 30-Mile Fire I do not think would have been necessarily aided by these particular tankers, we are talking about this morning, I think it does bring up a question about the priority of safety and security.

I think we have queried you numerous times about a separate safety and security budget number from the agency, which I am not sure we have even gotten resources on that. So now here we are with this particular incident. I personally believe the agency spent a lot of time undermining environmental law in the last several years. So my question is, if you spent that much time on these environmental changes why did you not spend this much time on the safety of this particular situation?

So my first question is, when exactly did we make this determination? When did you first find out? What date, what memo, what document in which the agency first determined that these tankers were not going to be sufficient for this season?

Mr. REY. The inquiry into the safety of the large airtanker fleet commenced immediately after the fatal incidents in 2002. After that we established an independent review committee co-chaired by the former Chairman of the NTSB, the previous Administration, and a state forester from Texas who has some expertise in the use of aviation assets.

We also consulted at that point with FAA. From the recommendations of FAA and the Blue Ribbon Independent Review Commission, we contracted with Sandia Laboratories to develop a more robust inspection and maintenance program for these airtankers, as well as to modify some of the operating procedures to assure a larger margin of safety. We reduced, for instance, fuel loads—not fuel loads, but retardant loads under certain circumstances.

Throughout the course of implementing the recommendations of Sandia Laboratories and FAA's recommendations, we were communicating with the NTSB. It was our hope that as NTSB's report was finalized that the changes that we had made would be sufficient for a different kind of conclusion from NTSB. That hope was not realized and so the question then became, as I indicated earlier in the hearing, upon receipt of the NTSB report the sole question available was, would any prudent person continue to fly these aircraft in the presence of available alternatives?

We concluded on May 11 that no prudent person would do that in the presence of available alternatives.

Senator CANTWELL. So during this time period, Mr. Rey, since the 2002 period, did you ever inform any committees or Members of Congress that an ultimate solution to this might be grounding of the tankers?

Mr. REY. No. There were hearings, primarily in the House, in 2003, I think, that asked about the status of the firefighting effort generally and airtanker safety specifically.

Senator CANTWELL. But nowhere did you give notice to members that, hey, we might be at a critical juncture here where we are grounding these tankers?

Mr. REY. No. It was our hope that we would not have to reach that point. Unfortunately, that hope was not realized.

Senator CANTWELL. In hindsight, do you not think you wish you would have given some people the heads-up, given that we are now on the precipice of the fire season, and particularly in our state, we are back again to a dry dry season and we expect that we are going to have severe conditions that will be very ripe for this kind of thing? So we are on the precipice of that, and then to say to a region of the Northwest, we do not think we are going to have these large tankers?

Mr. REY. As I said earlier, the advent of the fire season forced the issue in terms of the timing of the decision, because we needed to move quickly to secure alternative aircraft to replace the tankers. So yes, it would have been more fortuitous if we would have made the decision earlier, but it would have been more disastrous—or difficult, if we would have waited on the decision, argued it back and forth, and then been further into the fire season unable to secure replacement aircraft.

Senator CANTWELL. I am not questioning that. I am questioning the time period of discussion about the fact that we might get to this critical moment. God forbid if we were doing this in Iraq and all of a sudden we said we do not have a plan, no one ever thought of it. I am questioning now the agency's commitment to safety, and from my own experience in trying to get the cultural awareness on the incidents from the 30-Mile fire or even get a safety budget, what does the agency spend on safety—that is mandated in the wildland bill and yet your agency still does not track safety numbers. I cannot get a number of what you spend on safety and security.

So now we get to this situation and it is the eve of the situation. I am not even questioning your decision as much as I am questioning why we get to this point right at the precipice and all of a sudden, pop, here is this decision. My question is notification to members and to states that are going to be gravely impacted from this about whether other alternatives—what other plans, what other considerations would be considered.

I have a follow-up question. I know my time is running out.

Mr. REY. We did notify our state cooperators in the firefighting effort. In fact, we reconvened the Blue Ribbon Commission to assess their views as to whether this was the right course of action.

Senator CANTWELL. Good. So I would like to ask a question about that. I did not mean to interrupt, Mr. Rey.

Mr. REY. No, go ahead.

Senator CANTWELL. So what states have endorsed this proposal now? What states have said, yes, Mr. Rey, this is the way to handle the situation?

Mr. REY. We got a letter from about six Governors from the western United States this week. I will make it available for the record. I cannot remember which ones they are.

Senator CANTWELL. And it says, we all support your plan?

Mr. REY. It says this is the best course in a bad situation, is how I would paraphrase it.

Senator CANTWELL. So you think you have an endorsement from states?

Mr. REY. I would not hold them to that, no. But it is a measure of some support for the path that we have taken and that we are taking.

Senator CANTWELL. I am not sure that is what I have heard from our state, but I will be happy to see your letters, because I think that is the other issue here, is that states are critical partners in a solution to this.

Mr. REY. Absolutely.

Senator CANTWELL. And I am not hearing from ours that this is the preferred path that they would like to see.

Mr. REY. I will not suggest that all of the states are unified on this course. We have had a variety of input from the states. But with regard to some of them being supportive of the path that we have taken, there are some. And I am always eager and willing to talk to any State cooperator who wants to talk about alternatives.

Senator CANTWELL. If I could just submit, I will submit something for the record. But we have had questions about these unmanned planes that are now being used in our international efforts, being used as reconnaissance for more specific targets on fire-fighting, that would help in safety. So I will submit that to the panel. Maybe we can get some feedback on whether that is something the FAA and others would consider. Obviously it does not help with the actual distribution and treatment, but it does help on reconnaissance.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Mr. Rey, the recommendations in the NTSB report are not that different from the recommendations made by the Blue Ribbon Commission established by the Forest Service in 2002. What aspect of the NTSB recommendations that were not in the Blue Ribbon Commission report made you cancel the contracts?

Mr. REY. I think that the work that we did to respond to the Blue Ribbon Commission report was work we hoped would stand us in good stead as the NTSB completed its review. Our judgment was after the NTSB reviewed the work that we had completed and found it still inadequate to assure airworthiness we had taken our last swing in this particular at-bat.

So it was a function of the timing of the two. We moved to do as much as we could to respond to the Blue Ribbon Commission report between their report in December 2002 and the NTSB's report. We got the NTSB's report, as I said in the answer to Senator Cantwell, we looped back to the Blue Ribbon Commission and said: "What do you think we ought to do at this juncture?" And their advice—and I believe that Jim Hull from Texas is going to submit a statement for the record; he testified over on the House side—their

advice was to ground the planes, and I think that was sort of the final straw, if you will.

The CHAIRMAN. Ms. Conners, did you see the Sandia recommendations?

Ms. CONNERS. Yes, sir. The Sandia recommendations were reviewed during part of the investigation.

The CHAIRMAN. Did you find them any different from the conclusions or recommendations that you have arrived at?

Ms. CONNERS. Well, actually, sir, the Sandia report was essentially an evaluation of the existing maintenance and inspection programs. It provided that programs needed to be implemented, but we felt Sandia pretty much stated the obvious and did not provide information as to how the Forest Service could address the situation itself.

It is a systematic issue. It is a process of procedures. It is a question of acquiring significant data. If I may, I would like to quote from the March 2004 Consortium for Aerial Firefighting Evolution report. It says: "The limited data collected to date indicates that the cyclic fatigue spectrum experienced in aerial firefighting aircraft is far more than the cyclic spectrum experienced by aircraft operating in a passenger cargo role. This can either accelerate the damage cracking of known structural problem areas and/or introduce damage cracking areas that have not been previously experienced by the worldwide fleet. The suitability of an aircraft in the aerial firefighting role can only be assessed by evaluating its structure against a load spectrum that correctly characterizes the aerial firefighting role."

This load spectrum, sir, is the key to the issue of the records. It is not just a question of when the oil was changed. It is a question of analyzing and acquiring load data, providing a sophisticated analysis of that load data.

The CHAIRMAN. I do not think anyone thought that it had anything to do with oil change, Ms. Conners.

Ms. CONNERS. No, sir. I am just referencing the fact that this is not—it is a systemic issue. It is not simply a situation—

The CHAIRMAN. I think all of us concluded that it was because of the failure of the wings of the aircraft.

Ms. CONNERS. Yes, sir, you are correct.

The CHAIRMAN. So what has that got to do with oil changes?

Ms. CONNERS. I apologize, sir. I did not mean to appear glib. My statement was meant that we believe that a systematic approach to developing the maintenance program, as you stated in your opening remarks, is a process and the beginning initiation of that process that was occurring immediately after the accidents should continue with the assistance of the FAA. It is not a simplistic solution, and that is why our recommendations were that, because the risk cannot be precisely calculated, that the program needs to be put into place and this will take some time. However, it should be able to be done.

The CHAIRMAN. Mr. Rey, were the Sandia recommendations implemented?

Mr. REY. They are in the course of being implemented. Not all of them were completed.

The CHAIRMAN. Those recommendations were made in 2002, were they not?

Mr. REY. Some of them were made in 2002 regarding inspection and maintenance. Others were still ongoing. Indeed, we were waiting for a final report from Sandia on some of the testing protocols that the NTSB Chair just mentioned.

The CHAIRMAN. Mr. Sabatini, the set of recommendations that you have come up with, that the FAA has come up with, if those are implemented, suppose that all of those recommendations are implemented, then who would then have the final decision on whether those aircraft would fly again?

Mr. SABATINI. It would be the Department of Interior.

The CHAIRMAN. So I guess we come back to you, Mr. Rey. If those recommendations are implemented, would that mean that you would be disposed to allow these contracts to be renewed?

Mr. REY. That would be our intention if all the recommendations are made. I would like to submit the recommendations to NTSB to see if they would provide any additional investigative findings.

The CHAIRMAN. Would you need additional funds?

Mr. REY. No. Actually, if we recontracted we would probably save money, because we would take some of the other replacement assets to a lower status and replace them with the airtankers. As I said earlier, the airtankers are more cost-effective.

The CHAIRMAN. Do you have any idea how long it would take you to review and implement the FAA recommendations?

Mr. REY. That was the "between 30 days and never" time span that I gave to Senator Burns. As I said, it is I think a reasonable supposition that some of the airtankers are not going to be able to provide, some of the operators are not going to be able to provide the required information for us, with the FAA's assistance, to review the airworthiness question. Those would be never.

But if everything works right in terms of all the information being available, I think 30 days to get something prepared is within a reasonable stretch.

The CHAIRMAN. Mr. Timmons, Mr. Grantham, I would be glad to grant you some closing comments if you would like to make them, beginning with you, Mr. Timmons. Pull the microphone close to you, please.

Mr. TIMMONS. Thank you.

The CHAIRMAN. Thank you.

Mr. TIMMONS. I appreciate the opportunity to testify here and talk. My concern is that as time goes on June will turn into July and July will turn into August and we are still going to be attempting to come to a conclusion what and who is going to be responsible for getting the aircraft back in the air.

By that time, the 50 years of experience that are within this industry will be gone. These companies do not have the luxury of hanging on for a year and a year and a half. Most of these companies have expended all their resources to get ready for this fire season. In the case of Neptune, we traditionally borrow money in order to complete the maintenance inspections that we do on our aircraft. Those are not all reimbursed through our contract, especially the new inspections that were instituted and required by

Sandia. We are spending per airframe almost 500 additional man-hours on wing inspections alone each year.

So we do not have that opportunity. At this point in time we are borrowing money to make payroll.

The CHAIRMAN. Thank you, Mr. Timmons.

Mr. Grantham.

Mr. GRANTHAM. I have basically the same comments Mr. Timmons would have, Your Honor. So thank you. We just hope it can get solved, and none of us want to fly unsafe equipment and all of us feel, I think this industry as a whole is a professional fire-fighting industry and we do not want to have accidents either.

The CHAIRMAN. Thank you.

I think particularly our government witnesses recognize how important this issue is. Mr. Rey, I will not argue with your point that perhaps the assets have been, quote, "replaced," unquote. But in some of these fires that have taken place, particularly when they are simultaneous and in different states, we do not have enough assets. So to simply replace assets is not—I am afraid is not sufficient.

We are all very worried, because every expert tells us there will be a repetition of last summer, given the same conditions that prevail throughout the West, particularly in the Southwest. It is the seventh year of a drought now. So I hope that we can make every asset available.

But I also take your point, both Ms. Conners and Mr. Sabatini and yours, Mr. Rey, that safety has to be paramount. There have been three tragic accidents and unwarranted delays are not acceptable. But at the same time, we have to always recognize in our frustration that safety is paramount and we owe that to the families and individuals who will be flying these aircraft.

So I understand that is a tough balancing act, but I also take Senator Burns' point: Let us try to reach conclusions. In other words, if these aircraft can be made airworthy then let us do it. If they cannot, let us not. But let us not drag out the decision-making process, which, particularly where safety is concerned, is sometimes the easiest route.

I thank the witnesses for being here this morning. I thank you. This is a very important issue and I hope that all of us understand that we have to do what we can, however we can, to make sure that as we face the almost inevitable devastation that lays ahead of us that we are as best equipped to address it.

I thank the witnesses. This hearing is adjourned.

[Whereupon, at 11:17 a.m., the Committee was adjourned.]

A P P E N D I X

PREPARED STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR FROM MONTANA

The 2004 fire season is already bearing down on us, and none of us need reminding that all indications are that this season could be at least as severe as the past several fire seasons. Add to that, the sudden announcement by USDA Forest Service and Bureau of Land Management to terminate every contract for large fixed wing air-tankers without a clear plan or next steps, and suddenly people in my home state of Montana and Westerners tell me they are bracing for a fire fighting season like no other.

All of us are familiar with the fire which broke out in New Mexico last week and the criticism by New Mexico Governor Bill Richardson that for the lack of a single heavy air tanker a 100 acre blaze blew up to over 23,000 acres and now burns even as we gather today to discuss what will become of our Federal heavy air tanker fleet.

As many of you are aware last year in my home state of Montana we experienced one of the most severe fire seasons on record across the state. We received good support from Canada in addition to our own heavy air-tankers and the aircraft which make up the Federal firefighting fleet. In fact at one point in August 2003 nearly 18,000 of the nation's 28,000 Federal firefighters were fighting fires in my state of Montana alone.

Even so, given the complexities and dangers of fighting fire let me be clear and say without hesitation that firefighter and public safety is the number one priority in all firefighting operations. Irregardless of the resources that may or may not be available, safety always remains paramount.

But today I am really troubled that heavy air tanker companies like Neptune Aviation of Missoula, Montana with signed Forest Service contracts, arrived in their offices early on the clock and ready for work last month to find a faxed form letter advising them business as usual was terminated. That's just not right.

Additionally, I am discouraged that Neptune and others were allowed to spend several millions of dollars to prepare for the upcoming fire season after signing contracts in January 2004, without any warning from the Forest Service at all.

It is my understanding that Neptune and the other six companies received a termination notice from the Forest Service in the form of a faxed form letter, with no phone call or follow-up. These contracts were terminated after the companies were at their weakest financial point having invested all their remaining capital to prepare for a challenging fire season in anticipation of scheduled steady work.

Neptune Aviation, Owner Mark Timmons and President Kristin Schloemer told me they never received any indication from the Forest Service or anyone else that they should hold up on their costly pre-season preparations and build their own back fire.

Last week in a memo on Wildland Firefighter Safety for 2004 the National Inter-agency Fire Center at Boise, Idaho cautioned us to remember that a loss of heavy air-tankers "gives us one less tool in the toolbox and we must improvise and adapt to that loss." The memo discussed the potential impacts of a shortage of heavy air-tankers and that this factor could increase the likelihood of fires which escape initial attack measures and therefore result in the need for more firefighters.

Yet the Forest Service assures Congress, people at home in Montana, across the West and throughout the Country that they are working overtime with the Federal Aviation Administration on both short and long term plans to address concerns about how to suddenly make do without resources firefighters and Westerners have counted on for more than fifty years with no transition plan or any clear next steps.

In fact two weeks ago, Dale Bosworth, Chief of the Forest Service and his under-secretary for Natural Resources and Environment, Mark Rey told me again, firefighting resources across the west are well in hand for the upcoming season. Additionally, Chief Bosworth told me again the Forest Service would be working with the FAA to get more information from heavy air tanker companies about how to answer concerns about airworthiness.

From my perspective the May 10, 2003 National Transportation Safety Board report which started the chain of events we have been involved in throughout the past several weeks, began with a conclusion that all heavy air tankers are dangerous while, taking cues from some reasonable concerns raised in the 2002 Blue Ribbon Panel on the Aerial Firefighting Program.

However, in my mind the NTSB Report appears to have made a conclusion which should be a hypothesis to be proven—not a foregone conclusion. My understanding is that an NTSB study looks at a unique event, like a heavy air tanker crash through a wide-angled lens and then assesses all the factors which contributed to the cause of a specific accident. The NTSB offers specific time-critical recommendations sent on to the Federal Aviation Administration to remedy the conditions which allowed the event to ever even occur.

For example you may recall the ValuJet Crash into the Everglades in 1996. As a result of that crash, planes of that type across the industry were all grounded immediately upon a recommendation of the NTSB to FAA. As a remedy to ensure airworthiness for these planes, the NTSB also recommended that the FAA dispatch teams of inspectors to make immediate on-site visits across the country to each plane to “re-certify” them as airworthy or ground them for further inspection if necessary.

However, the NTSB did not recommend dismantling an entire industry as a result of a troubling and tragic crash. Furthermore, as you may recall within two weeks most of these planes (many more than the 37 we are discussing today) were back in the air. That is how a typical NTSB report with recommendations to the FAA works.

But that is not the path which the NTSB report took in this case. Rather, this NTSB report appears to be something altogether different; a broad-brushed statement about the culture and nature of the heavy air-tanker industry.

The May 10 NTSB report also fails to make any clear recommendations to the FAA which—again, is typical to nearly every NTSB accident study, which nearly always directs a Federal regulator like FAA to address safety in a specific way after an accident.

This action by NTSB appears atypical in many ways of most other reports they have issued. And Chairman McCain and Members of the Committee, that is the issue.

The National Transportation Safety Board, the Federal Aviation Administration, the Forest Service and the Bureau of Land Management have concerns about safety as well they should.

However this NTSB report is ambiguous and non-scientific, the FAA has received no clear mandate as a result of this report, and the Forest Service and Bureau of Land Management who are not regulators, are suddenly citing wide-spread fatigue as their greatest concern about heavy air tanker airworthiness, without attaching substantiated evidence to corroborate their decision to suddenly terminate these contracts with no transition plan and no next steps. Furthermore, the report as it now stands has become the impetus to shut down an entire industry.

Last night as my staff and I prepared this statement I learned from Neptune Aviation that indeed they had just received a list of follow-up requirements from the FAA on additional documents that agency would ask Neptune to provide to certify the airworthiness of their heavy air tankers. As I mentioned, two weeks ago Chief Bosworth and Undersecretary Rey had promised this list of follow-up requirements would be forthcoming to companies like Neptune.

The immediate feedback I received from Neptune was positive. They told my staff they were certain they could supply all of this information to the FAA with ease to re-establish that their aircraft are indeed airworthy.

But then just a few minutes later, I also received a draft response from the Forest Service to the FAA outlining a new round of concerns by the Forest Service about general airworthiness of these aircraft.

Again, the Forest Service offered a broad-brush approach to the entire industry by citing additional unsubstantiated concerns that each and every aircraft in the heavy air tanker fleet are plagued by systemic wide-spread fatigue.

Additionally, I am really troubled that the Forest Service terminated these contracts without any warning or a clear transition plan for the operators and firefighters already gearing up for the season. In fact I am told some of these heavy air tankers were already deployed to the ground for the firefighting season.

Montanans—including myself, simply want to see the NTSB and the FAA sit down with the Forest Service and BLM and have a think session to identify an FAA team that can get out on the ground this week to work with local FAA inspectors and the heavy air tanker operators to get these planes inspected and certified as airworthy or not, to protect our home states, while we work out a parallel transition

plan and next steps to address the broader issues and over-arching concerns brought forward by the Forest Service and the NTSB report.

These heavy air tanker companies don't have days, weeks, months or years to hang on and keep their teams in place, while the Federal Government gets their ducks in a row. Companies like Neptune Aviation tell me they have already issued some lay-off notices to their staff.

The past tragedies of heavy air tankers like those which crashed in Wyoming two years ago have indeed prompted an unprecedented look at the Nation's aviation program. And in the past two years of discussion we have learned that some companies are indeed better actors than others, some companies provide us with a better value as taxpayers than others and some aircraft are more airworthy than others. But we have not yet received inconclusive evidence that our heavy air tanker industry as it stands today merits a dismantling and that all heavy air tanker companies are the same.

Dispatching FAA teams to each heavy air tanker facility to conclusively establish airworthiness based upon a fixed list of criteria is a measured and warranted approach. But to continue to raise the ante and arbitrarily move the goal posts on how these companies will be measured and assessed is unreasonable and unnecessarily penalizes companies like Neptune with solid maintenance and FAA certification records.

We all know leadership is not easy. People in positions to make decisions must be called out to roll up their sleeves to do so. In the West we don't finger-point at one another and suggest another guy ought to go and fix a problem first. We roll up our sleeves and get after it for the good of the order. Heavy-air-tanker contractors and Westerners just want, and deserve, expeditious answers and to be treated individually by their elected officials and Federal agency staff.

I believe it is our collective duty to ensure that the companies we are discussing today, like Neptune, are treated fairly as well as to ensure that our firefighters and our communities have all of the available tools they need to fight the upcoming fire season.

YODICE ASSOCIATES
Washington, DC, May 19, 2004

KRISTEN SCHLOEMER,
President,
Neptune Aviation Services,
Missoula, MT.

Dear Ms. Schloemer:

On behalf of Neptune Aviation Services, you have asked us to write an opinion of counsel letter regarding the definition of a "public" versus a "civil" aircraft. These are terms that are found in the Federal Aviation Administration's statute and regulations and dictate the rules that must be followed when operating an aircraft. All aircraft being operated in the United States fall into one definition or the other. Essentially, public aircraft are aircraft that are operated by the government for a function of the government not involving compensation or hire. The number of aircraft that qualify as public aircraft is very limited. A classic example of a public aircraft is a military armed forces aircraft, and in those instances, the aircraft is not registered with the FAA, does not have an airworthiness certificate issued by the FAA, is not required to comply with FAA maintenance regulations, and is relieved from compliance with many of the operating rules. The vast majority of aircraft being operated in the United States, including many aircraft being operated on government business, are civil aircraft.

Neptune Aviations Services provides firefighting flights for the U.S. Forest Service, an Agency under the Department of Interior, pursuant to a government contract executed annually between Neptune and the Forest Service. Basically, the contract provides that Neptune will provide fire-fighting services, including aircraft and crew, to the Forest Service in exchange for monetary compensation. The question that has arisen recently is whether the operations conducted by Neptune for the Forest Services are considered to be operations by a public aircraft or a civil aircraft.

Congress defined civil and public aircraft in the U.S. Code, as part of the FAA's enabling statute. The FAA has adopted those definitions, in summary fashion, in its Code of Federal Regulations, and the FAA has issued guidance material to aid in the application of those definitions to industry operations. Only a few cases have discussed the issue. When determining whether an aircraft is public or civil, you are required to consider the type of operation the aircraft is involved in and not nec-

essarily the purpose that the aircraft was built or the person who owns the aircraft. Historically, the definition of public aircraft has been strictly interpreted, seeming to err on the side of finding that there should be FAA regulation, control, and oversight, rather than not.

In pertinent part, 49 U.S.C. § 40102(a)(41) defines “public aircraft” as follows:

(A) Except with respect to an aircraft described in subparagraph (E), an aircraft used only for the United States Government, except as provided in section 40125(b).

. . .

(B) An aircraft owned or operated by the armed forces or chartered to provide transportation to the armed forces under the conditions specified by section 41125(c).

49 U.S.C. § 40125(b) provides that, “An aircraft described in subparagraph (A), (B), (C), or (D) of section 40102(a)(37) [sic] does not qualify as a public aircraft under such section when the aircraft is used for commercial purposes or to carry an individual other than a crewmember or a qualified non-crewmember.” The same section also provides that, “The term ‘commercial purposes’ means the transportation of persons or property for compensation or hire . . .” and “The term ‘governmental function’ means an activity undertaken by a government, such as . . . firefighting . . .” 49 U.S.C. § 40102(a)(16) defines “civil aircraft” as “an aircraft except a public aircraft.”

Thus, the statutory definition of public aircraft, as it would apply to the firefighting services that Neptune is performing for the Forest Service, may preclude a conclusion that Neptune is operating public aircraft. Under its contract with the Forest Service, Neptune is providing the aircraft, and all related services, and performing an operation for the United States Government that may be identified as a governmental function. However, Neptune is in control of these operations and is performing these operations for a commercial purpose, *i.e.*, has been hired by the Government and is being compensated by the Government. Consequently, Neptune would be considered to be operating civil aircraft.

The FAA definitions and interpretations comport with this conclusion. In pertinent part, the FAA defines public and aircraft as follows:

Public aircraft means any of the following aircraft when not being used for a commercial purpose or to carry an individual other than a crewmember or qualified non-crewmember:

(1) An aircraft used only for the United States Government; . . .

(i) For the sole purpose of determining public aircraft status, *commercial purposes* means the transportation of persons or property for compensation or hire, . . .

(ii) For the sole purpose of determining public aircraft status, *governmental function* means an activity undertaken by a government, such as national defense, intelligence missions, firefight, search and rescue, law enforcement (including transport of prisoners, detainees, and illegal aliens) aeronautical research, or biological or geological resource management.

. . . .

Civil aircraft means aircraft other than public aircraft.

14 C.F.R. § 1.1. The FAA has drafted guidance on these definitions and application of them within the industry in FAA Advisory Circular No. 00-1.1 (April 19, 1995). “The purpose of this advisory circular (AC) is to provide guidance on whether particular government aircraft operations are public aircraft operations or civil aircraft operations under the new statutory definition of ‘public aircraft.’” The FAA notes that its “long-standing interpretation has been that, where there is a receipt of compensation, such an operation is ‘for commercial purposes’ and that such an operation therefore is not a public aircraft operation. . . . The general purpose of the new law, as reflected in the legislative history, is to extend FAA regulatory oversight to some government aircraft operations. In part, Congress determined that government-owned aircraft, which operate for commercial purposes or engage in transport of passengers, should be subject to the regulations applicable to civil aircraft.”

The applicable key phrase that stands to remove an aircraft from public aircraft status is “for commercial purposes,” which is defined as being for compensation or hire, *i.e.*, when the operator of the aircraft is receiving direct or indirect payment.

The Forest Service hired Neptune to conduct firefighting flights in exchange for compensation. This arrangement is captured in a written contract between the two parties. Thus, although the aircraft are being used to perform a governmental function, the aircraft are nonetheless engaged in aerial operations for compensation or hire. The Forest Service is a customer who has paid an independent contractor for an aviation service, albeit to satisfy a Forest Service responsibility.

Moreover, Neptune has always operated its aircraft as civil aircraft. Neptune holds an FAA-issued type certificate for its P2V aircraft, which “prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Administration.” Neptune has registered its aircraft with the FAA, and the aircraft are marked with U.S. registration “N” numbers, in accordance with 14 C.F.R. Part 47. The FAA has issued airworthiness certificates to Neptune’s aircraft, which specifically identifies the civil airworthiness maintenance requirements that must be satisfied to operate the aircraft in an airworthy condition. And, Neptune complies with Airworthiness Directives issued by the FAA pursuant to 14 C.F.R. Part 39, which are issued by the FAA at any time that the FAA determines that an unsafe condition exists in a product and that condition is likely to exist or develop in other products of the same type design, thus requiring compliance with an identified maintenance procedure. The FAA conducts inspections of Neptune’s aircraft, pilots, and facilities for compliance with the FAA’s regulations. Neptune’s pilots hold current and appropriate FAA-issued pilot and medical certificates. And, Neptune holds a certificate under and complies with 14 C.F.R. Part 137, which is required of civil aircraft involved in forest firefighting aerial operations.

The principles applicable to defining public and civil aircraft are not limited to a model or type of aircraft, but may apply to any aircraft. The critical distinction for purposes of concluding the public or civil status of the aircraft is the manner in which the aircraft is operated.

Sincerely,

KATHLEEN A. YODICE

