

TWA Flight 800

FBI Whistleblower

The Sworn Testimony

of

FBI Chief Forensic Metallurgist

William S. Tobin

Before the
UNITED STATES SENATE

COMMITTEE ON THE JUDICIARY

SUBCOMMITTEE ON ADMINISTRATIVE OVERSIGHT

AND THE COURTS

PRE-FILED TESTIMONY OF SSA WILLIAM A. TOBIN

FORMER CHIEF FORENSIC METALLURGIST

FBI CRIME LABORATORY

May 10, 1999

Submitted by Counsel for William Tobin:

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Mr. William A. Tobin, a former Supervisory Special Agent ("SSA") for the Federal Bureau of Investigation ("FBI") was requested by the Chairman of the Subcommittee on Administrative Oversight and the Courts to testify and provide prefiled testimony for hearings on the "Administrative Oversight of the Investigation of TWA Flight 800." As a former FBI Supervisory Special Agent Mr. Tobin is required by his FBI employment contract to submit any written material, including written testimony before the U.S. Congress, to the FBI for prior review of its content. This rule remains in effect even though Mr. Tobin retired from the agency on March 31, 1998.

Because of the FBI's pre-publication rules, Mr. Tobin, at this time, is not able to submit written testimony to the Subcommittee.[1] This statement was prepared by Counsel for Mr. Tobin and is submitted on Mr. Tobin's behalf. Mr. Tobin will testify before the Subcommittee and will answer questions posed by members of the Subcommittee.

Mr. Tobin shall be joined by his two attorneys, Mr. Charles A. DeMonaco of Dickie, McCamey & Chilcote and Mr. Stephen M. Kohn of Kohn, Kohn & Colapinto, P.C. Mr. DeMonaco is a former Assistant Head of Environmental Crimes at the United States Department of Justice ("DOJ") and is very knowledgeable concerning the role of professional scientific conduct in disaster investigations. Mr. Kohn has represented a number of employees employed at the FBI who have raised science and management related concerns within the FBI crime lab, including Dr. Frederic Whitehurst. Mr. Kohn also represents three former FBI employees in a federal law suit concerning proposed DOJ regulations related to FBI employee protection.

WILLIAM. A. TOBIN

On June 27, 1971, Mr. William A. Tobin was appointed a Special Agent for the FBI. Before joining the Bureau, Mr. Tobin served three years in the Marine Corps - two in active combat duty in the Republic of South Vietnam. While in the Marines he received the Bronze Star with Combat "V," two crosses of Gallantry and twenty

additional military combat decorations. After joining the FBI he worked organized crime and police corruption in Chicago, and general crimes in Detroit. In September, 1974 Mr. Tobin was assigned as a forensic metallurgist in the FBI crime laboratory in Washington, D.C. In 1976 he was promoted to a Supervisory Special Agent and in 1986 became the civilian equivalent of the FBI's Chief Forensic Metallurgist.

In this position, Mr. Tobin was the leading expert, nationwide, in the law enforcement community on forensic metallurgy (i.e. the examination and analysis of material's deformation and damage).

In this position, Mr. Tobin was qualified as an expert witness on behalf of the FBI or the U.S. government in over 200 local, state and federal courts. He served as the FBI's leading forensic metallurgist on thousands of cases, such as the UNABOM, Judge Robert S. Vance mail bomb murder case and numerous accident/disaster cases (i.e. the Escambron Beach Puerto Rico Oil Spill, the Willow Island West Virginia Scaffold Collapse, the Wilberg Coal Mine Disaster in Utah, the Panama City Florida Train Derailment, the USS Iowa explosion and the Mobile, Alabama Train Derailment).

In his 24 years in the crime lab Mr. Tobin provided forensic analyses in approximately 75-100 aircraft incidents (i.e, ranging from mechanical failures to suspected sabotage to actual crash damage examinations).

In regard to the July 17, 1996 crash of TWA Flight 800, Mr. Tobin arrived in New York at the crash reconstruction site on August 4, . He devoted his efforts as the FBI's chief metallurgist at the crash reconstruction site for 89 straight days, and as necessary thereafter.

The science of metallurgy is the only scientifically appropriate discipline to evaluate metal damage and causes of the metal damage of the recovered parts of Flight 800. Mr. Tobin was the most scientifically qualified and experienced metallurgist involved in the evaluation of the crash damaged materials in the law enforcement community.

Mr. Tobin repeatedly raised concerns to FBI personnel and officials who were in control of the "criminal" investigation of the crash of TWA Flight 800. Mr. Tobin will answer questions regarding the concerns he raised, the bases for these concerns, the administrative response to these concerns and the impact of these concerns on future disaster/public safety investigations.

For three decades Mr. Tobin loyally and effectively served the American public, first, in combat, second as an agent for the FBI and then as a scientist for the FBI. He continuously obtained "exceptional" or "outstanding" performance ratings and was the recipient of numerous awards and recognitions, including five separate commendations and cash awards issued by two directors for the FBI and a personal commendation from the U.S. Attorney General. At the TWA crash investigation site in Calverton, New York, Mr. Tobin stressed the importance of strict adherence to the professional scientific process, despite the pressures from federal law enforcement officials in charge of the investigation. The actions of Mr. Tobin, and other investigators at the crash scene, prevented a false identification of the cause of the crash. Had Mr. Tobin and others succumbed to the pressure to validate the "bomb" or "missile" theories, the public safety of the American people would have been betrayed.

****FOOTNOTES****

[1]:'The FBI's pro-clearance regulations appear to conflict with the Lloyd- La Follette Act of 1912, which "guaranteed the right of federal employees to communicate with members of Congress." Arneff V. Kennedy, 416 U.S. 134, 150 (1974). The FBI's refusal to recognize the right of agents to communicate with members of Congress is very troubling and is not in accordance with either the laws of Congress and the United States Constitution.

FREEDOM TO RAISE CONCERNS

The ability of FBI employees, such as Mr. Tobin, to freely raise concerns within the FBI is of particular concern to counsel for Mr. Tobin. At the time Mr. Tobin raised concerns to the FBI officials responsible for overseeing the TWA Night 800 crash investigation, the FBI/DOJ internal operating rules prohibited FBI supervisors from taking adverse action against an FBI employee who raised such concerns. However, the Department of Justice has proposed new "whistleblower" regulations for the FBI. These regulations do not protect FBI employees from retaliation for concerns raised to their supervisors or other officials within the Bureau.

[2] In addition, the regulations do not provide the right to a hearing on retaliation-related issues, do not provide for judicial review and do not mandate that an independent judge or agency review retaliation cases. In short, under the new regulations, an FBI employee, such as Mr. Tobin, could be fired merely for informing his

supervisor that "bad science" is involved in a case. In order to insure that FBI employees in the future will be free to raise concerns, such as the concerns Mr. Tobin will testify to during this hearing, the proposed DOJ regulations must be substantially changed.

CONCLUSION

On behalf of Mr. Tobin and his co-counsel, I thank the Chairman and members of the Subcommittee on Administrative Oversight and the Courts for the opportunity to share our views and present testimony before this Subcommittee. The importance of effective oversight cannot be underestimated in insuring the effective operation of government in its law enforcement and public safety capacities.

FOOTNOTES

[2]: These regulations are seriously deficient and are currently being challenged by three former FBI employees in U.S. District Court. The regulations only protect employees who contact the DOJ Office of Inspector General, DOJ Office of Professional Responsibility or the FBI's Office of Professional Responsibility. The proposed regulations not only fail to protect FBI employees who raise concerns directly to supervision, they fail to protect FBI employees who report concerns to the U.S. Congress, the Attorney General, the Director of the FBI or even the President of the United States.

The Grassley hearing arose out of **complaints about James Kallstrom's conduct of the investigation** and documents the mindset of a man who had his neck bowed that the airliner was a missile shootdown victim [who shortly would have gladly settled for evidence of a bomb] and **ignored and quarreled with** the reports of his own experts that **no** evidence of a missile or bomb was turning up in the wreckage.

The sworn testimony of **FBI Chief Metallurgist William Tobin** during the Grassley hearing
[emphasis added]

SENATOR GRASSLEY: For my first question, what was your position at the FBI?

WILLIAM TOBIN: At that time, I was the civilian equivalent of the Chief Metallurgist for the FBI laboratory.

GRASSLEY: And then your role in the TWA 800 crash investigation.

TOBIN: My role was to evaluate whether there could be or was any criminal activity associated with any of the--as to the cause or the materials' deformation or damage issues related to the crash.

GRASSLEY: When did you arrive at the hanger in Calverton, New York where the plane was being reconstructed?

TOBIN: I arrived on **August 4th of 1996**.

GRASSLEY: All right. At that time did you have any inclination as to whether or not a bomb was the cause of the crash?

TOBIN: From what I had seen and heard in the media, it did have the earmarks potentially of having been a bomb.

GRASSLEY: Generally what were the scientific issues you confronted in order to be able to reach any valid conclusions concerning the cause of the crash?

TOBIN: This air crash, in particular, was - is a very dynamic interaction of materials and forces that resulted in a massive amount of fractured and otherwise damaged metal aircraft components known to have been subjected to three of the most hostile circumstances that materials can undergo. In this particular case there was a midair fuel explosion. There was impact of the pieces from approximately two and a half miles in the air with the water's surface and subsequent undersea saltwater corrosion. The results were fractures, punctures, fragmentations, tears and rips, deformation and thermal, mechanical, chemical and electro-chemical damage processes including unavoidable recovery damage.

This was an extraordinary combination of material interaction and degradation processes which - each of which can serve to mask characteristics of the other processes. So, in short, this was a massive and technically complex metallurgical undertaking.

GRASSLEY: Was your initial inclination that the cause of the crash was a bomb? Was it confirmed by your evaluations?

TOBIN: No, Mr. Chairman, they were not.

GRASSLEY: Why not?

TOBIN: The materials just lacked, completely lacked any of the characteristics that would support impulsively loaded materials from within the aircraft. The various characteristics that, and there are numerous that would indicate the presence of a bomb resulting in impulsive loading were absent in the components.

GRASSLEY: What was it about the crash debris which disproved a bomb or missile theory?

TOBIN: Well the bomb -- disproved the bomb theory because of the complete absence of any of the characteristics associated with the type of behavior that bombs can cause.

As to the missile components, the same arguments would apply because that's also generally considered impulsive loading, but in addition there were penetration problems. Admittedly 100 percent of the aircraft was not recovered, but every time there was a portion of material missing, I could actually track through the multi-layered structures and actually find a component that existed in the path of what could have been viewed as an external penetration.

Further I would add that in some of those areas where there did appear to be a hole, the holes were from within outward, rather than from outward in. That was another characteristic. But - and that the material behavior was consistent with the fuel explosion known to have occurred.

GRASSLEY: Now I'd like to have you tell me what there is about your area of scientific expertise which qualified you to reach these conclusions that the cause of the crash was not a bomb?

TOBIN: Metallurgy or material science is the most appropriate scientific discipline to make the evaluations as to the material behavior and the deformation and damage associated with the various degradation and destructive processes.

GRASSLEY: Did you work with any other branches of the federal government during your years of disaster investigations?

TOBIN: Yes, Mr. Chairman, I did.

GRASSLEY: How did you find working with the NTSB?

TOBIN: In my view, they are unsurpassed in their expertise, in their competence and their professionalism.

GRASSLEY: Within 30 days of arriving at Calverton, what was your professional assessment of as to whether the cause of the crash was a bomb?

TOBIN: It progressed from an inclination of viewing the earmarks as possibly a bomb, but **it changed rather quickly to confirmation within my mind that there was no indication of a bomb and unlikely to be that of a missile within the first 30 days.**

GRASSLEY: Did you discuss that assessment with members of the National Transportation Safety Board? If so, how did they respond?

TOBIN: I did. We were -- I have a very intimate relationship with them from having worked these disasters for approximately 25 years with them at that point. That of course would include derailments and maritime disasters. But we were in daily, and I would almost - I probably could safely say hourly contact in our very intimate working relationship. So there was not really any proactive discussion needed because we were in a constant information exchange mode while we were working together.

GRASSLEY: Did there come a time when explosive residues were found on crash pieces of the plane? And what was your reaction to this discovery?

TOBIN: Yes, there were three separate incidents, or instances of the finding of high explosive residues on various parts. The first incident, I was quite skeptical. But when I reexamined the areas from which the residue was recovered, I confirmed that the surrounding materials showed no evidence whatsoever of any damage processes caused by a bomb.

So at that point I began to urge, partially because of my Marine Corp combat experience, urge that the history of this research - that this aircraft be researched. Because when I was in combat, we all carried basically some C4, which is a high explosive, and it's very easy to transfer the residues. So I thought the possibility existed that this aircraft may have been used to ferry troops to the Middle East for the Middle East War. And -- or that another possibility for the deposition was that the aircraft was used in drug sniffing exercises for canines.

GRASSLEY: When the second incident of explosive residues was found on a piece of the plane, what was your reaction?

TOBIN: I again repeated the process of confirmation as to the site and location from which the residues were recovered and confirmed again no indication whatsoever of impulsive loading or bomb or missile damage. I strengthened and reiterated my suggestion that the history of this aircraft be researched.

GRASSLEY: How did Mr. Kallstrom inform you when the third incident, the high explosive RDX was found on a piece of the recovered plane? What did he say?

TOBIN: When I was advised of that third finding of the residues, I was approached in a very excited manner and the statement was, we've got it, we've got it, it's confirmed. And I asked what was confirmed and he said, we got it, proof of the bomb and I saw in the very agitated or hyper emotional state that he was in that I needed to do some significant calming or try to bring it back down to earth or to urge prudence and caution in interpretation of those RDX residues.

I then decided that I probably should -- I used the analogy of a cardboard box at that particular time and what I was trying to convey to him was that a simple materials analogy. My representation was, I said, Jim basically from a material science standpoint this is what you've got. You've got a cardboard box, your chemists are finding residues inside the cardboard box and the sides of the box are not even bulged out. In my business, that's called a clue.

That didn't sit well, and at that point he got about six inches from my face and prompted - proceeded to advise me in rather graphic terms that it was a bomb. And that's the most suitable presentation I can put on for prime time right now.

GRASSLEY: Was the insinuation when he six inches away from your face is that he says it's a bomb and you as a scientist had better say it's a bomb?

TOBIN: I don't know what he intended to insinuate or intended for me to - how he intended for me to use that. I do know that he was rather graphic in his approach that it was a bomb and in fact I ended up wearing several particles of his saliva from that presentation.

GRASSLEY: Did you tell Mr. Kallstrom that if there was to be a public pronouncement that Flight 800 crashed due to a bomb that you would not support that announcement from a material science standpoint?

TOBIN: Yes, Senator, that's correct.

GRASSLEY: Why did you say this to Mr. Kallstrom?

TOBIN: After the finding of the third explosive residue hit and I saw the reaction and the fervor and the intensity and the frenzied reaction and I also saw the clothes that he had that day and I recognized the behavior immediately preceding most of the press announce - press conferences. And at that particular time, sorry I have something in my eye here.

At that particular time I saw that a major PR gaffe was imminent, was in the making and I think in large part due to my loyalty to the FBI, I decided at that point that, as we would say in Vietnam, I needed to throw my body on the grenade at that particular time. And I wanted to preclude or prevent a major, major PR gaffe that in my view was about to happen from which I don't believe the FBI would have recovered for a very long time.

And I then thought the last tool in my arsenal at that point was to indicate, to basically put the emperor without clothes. That if he was going to proceed to make an announcement that there was a bomb that he would not be supported from the material science standpoint. So that was at that point the last tool in my arsenal.

GRASSLEY: OK. My next point is kind of a summation maybe of what you said, but I want to ask it very direct. Based upon your direct personal observations, your direct contacts with Mr. Kallstrom and Mr. Maxwell and your discussions with bomb tech and chemical analysts at the crash site, at the investigation site, had you not forcefully protested directly to Mr. Kallstrom, do you believe that the FBI would have publicly declared the cause of the TWA Flight 800 crash to have been caused by an bomb? And why do you think so, if you think so?

TOBIN: It is my opinion that that was imminent and would have occurred. But even if there was not a hundred percent probability that it was going to occur, the odds were so high based on the actions and the demeanor and the tension that I, for the Bureau's sake I decided it was not worth the chance. So I - that's when I interceded at that point. Tried to put him in a position exposing him that to give him pause to think about any announcement that may be imminent.

GRASSLEY: I'm told on August the 13th '96 you wrote in a memo to your supervisor quote "I am underwhelmed by the finding of RDX" end of quote. Why did you write this?

TOBIN: A number of reasons. One is I in fact was underwhelmed by the finding of RDX as I've already indicated. But I -- it's partially my style to introduce some humor to try to get a point across so I think I made up my own word in that particular time.

But I decided after that proclamation from Mr. Kallstrom to me that it was a f---ing bomb, that I needed to start a documentation because I could foresee claims of malfeasance from the material science side or that the metallurgist never communicated his findings or -- there was no recording of my opinions, my positions. So at that point I decided - - and **that was August, mid August I believe, I think it was August 13th only several weeks after I arrived.** And I also needed to try to start reversing the tide, to try to introduce back to headquarters the crack in the dam that **to start trying to opening the focus of causes.**

GRASSLEY: Did you have occasion to have to deal with an order for 1000 random samples to be carved out of the aircraft?

TOBIN: Yes, I did.

GRASSLEY: What were your reasons for refusing to comply?

TOBIN: Throughout the whole interaction, except maybe the first week, I had some serious problems with statutory authority, Title 49 versus Title 18 issues. I throughout the investigation felt and particularly in view of having worked so many of these with the NTSB in the past, that this was not our aircraft to be carving up.

I also saw that that would have an effect from a material science standpoint, a significant impeding effect on their carrying out their chartered mission under Title 49. I didn't feel that it was our place to be carving up their aircraft.

Secondly, I had a problem. I and my colleague have spent almost our entire lives in metallurgy classrooms, in the practice of metallurgy and material science issues and we were being told basically what samples we needed, how many samples we needed to draw our conclusions and what tests would be conducted. Albeit the test that was insisted that we -- by an individual that had not spent a minute in a metallurgy classroom. I would also add that that request was so absurd on it's face, in part because we were ordered to put a 1000 random samples in a metallurgy machine, and to this day we're not real sure what a metallurgy machine is, but that was the order at the time.(CROSSTALK)

Part of the issues in that were that they were dissatisfied with the examinations we had conducted. They were dissatisfied with my lack of note taking, and there were five reasons that I enunciated as to why I was not taking detailed notes on the examination of these fragments. And there was dissatisfaction of the techniques that we were using to conduct these examinations, the -- again by the individual who'd not spent a minute in the material science classroom.

We were -- basically they were dissatisfied with the visual examinations. We were doing macroscopic examinations and microscope, stereo microscopic evaluation. But the supervisor in charge of the on site investigation was dissatisfied with those examinations and was insisting that we put 1000 random parts through a metallurgy machine. I would also add that those were the same techniques by the financially interested parties, the parties who had billions of dollars at stake. They were using -- not only using the same examination techniques that my colleague and I were using, in fact, they asked where I was able to -- if they could purchase one of the items that I used for my examinations to help their examinations.

GRASSLEY: Did you ever hear the phrase, bomb techs -- 3, Tobin-- 0? What did that mean if you heard it?

TOBIN: I wasn't aware you had that information. That was basically an analogy to a baseball game. The first week or so I kept trying to urge prudence and caution in the interpretation of these explosive residue hits. When the third one came, I was basically told that in this baseball game that metallurgy had no runs and that the bomb techs had three runs and how was there any credibility to be attached to my urgings of prudence and caution in the material science issues.

I at that point tried to explain that NTSB and my joint materials data stream, data flow was a long, a very long complex, drawn out process, that we just couldn't walk up to an aircraft and take a swab and then get an instant hit. But in answer

to your question, Senator, that was a baseball game analogy that was demonstrated to me.

GRASSLEY: At some point, did the bomb techs agree with yours and the NTSB's assessment that the cause of the crash was not a bomb?

TOBIN: Yes, Senator. I would estimate that probably four to six weeks -- **after about four to six weeks, we were all unanimously or near unanimously on the same page. And all being the bomb techs, the National Transportation Safety Board and the metallurgy or the material science interests in the FBI laboratory. We were all unanimously -- we were united in our observations and conclusions that there was no bomb or missile damage evident on those aircraft parts.**

GRASSLEY: **The term four to six weeks brings you to what date on the calendar approximately? Just approximately.**

TOBIN: My guess would be **mid September, early to mid September.**

GRASSLEY: Were you aware of the visit of a psychic at the investigation site?

TOBIN: Yes, I was.

GRASSLEY: What was your reaction to this visit?

TOBIN: I was very disturbed.

GRASSLEY: Well, tell me how disturbed you were?

TOBIN: That was at a very sensitive time in the investigation. Up to that point there had been no release of scientific information to the American public. I felt -- I'm sorry...

GRASSLEY: Go ahead.

TOBIN: I felt that that was a very wrong signal to be sending out to the American public that two of the foremost agencies charged with being guardians of the public safety had to resort to a psychic to resolve this aircraft, these aircraft issues. That their scientists were not sufficiently competent to deal with it.

I also took it as a collective slap in our scientific and investigative faces in view of the mountain of experience that the NTSB and I had had working these things that they felt the need to resort to a psychic at that particular time. I did understand and learned eventually that it was not an authorized visit by the psychic, but then that brings the next question, raises the next question.

GRASSLEY: Why?

TOBIN: If we were so -- yes, Senator. If we were so controlling of another agency's personnel, why couldn't we control our own personnel?

GRASSLEY: Do you think someone was thinking in terms of getting brownie points by bringing in a psychic?

TOBIN: I can't address the motives for bringing a psychic in, I don't have any first hand information.

GRASSLEY: Did you learn what the psychic's findings were?

TOBIN: I believe I did.

GRASSLEY: And do you want to say what those findings were?

TOBIN: I don't recall. They went in one ear and out the other, but that may have been the catalyst, and I didn't even put this together until recently, that may have been the catalyst for the pristine overhead bin incident that...

GRASSLEY: Well let's talk about that.

TOBIN: I was ordered to, in a rather frenzied manner, to go conduct an exhaustive search in contact with my NTSB liaison, liaison capacity, to find a certain overhead bin that was characterized as in pristine condition.

But it was in a very emotional, very frenzied manner, so I inquired as to why I was looking for this particular pristine

overhead bin on the port side of the aircraft, that was from the left-hand side of the aircraft. I was told that that was proof that NTSB was quote "squirreling away evidence" and stashing evidence, which again flies in the face of my interpretation of whose aircraft this was.

But, so I inquired as to why the pristine overhead bin was of such significance. I was told that that was demonstrative proof that they were squirreling away evidence. That the recovery had been captured on a video tape from the USS Grapple or the USSGrasp which-- one of the recovery ships. And on the videotape it showed this overhead bin being raised or set on the deck.

And I said, well I'm still missing some critical information, why is this important, why is this critical? To which I was advised that it had a suitcase, a badly charred and damaged suitcase inside the overhead bin. And my response at that point was, well I'm still missing some critical information. Why are we looking for this quote "pristine overhead bin"? Are you suggesting that there was a bomb in the suitcase that went off? Yes. Well that went off instantaneously brought down the 747 with no reporting on the FDR or CVR, flight data recorder or the cockpit voice recorder, and didn't put a scratch on the overhead bin. And I was told, yes, we want that overhead bin and I was continued -- told to go find that overhead bin.

GRASSLEY: Did you ever hear the expression that **two hundred and sixty some witnesses can't be wrong?** Referring to various eyewitness accounts which supported the bomb and missile theory.

TOBIN: **Yes, I did.**

GRASSLEY: Under what circumstances did you hear that position? And how did you respond to those comments?

TOBIN: That was the continual argument advanced when I continued to try to use the cardboard box analogy. That basically NTSB's and my position in a material scientist position is that the box fragments --if you have a bomb in a box, the box fragments will tell the story. And my position was, I don't care how many witnesses say what, the box, the container has to tell the story. And **I was continually told that two hundred and sixty some witnesses can't be wrong.**

Well I repeatedly tried to convey the physics involved in the materials interactions. Number one the velocity of sound and air and why from my experience as a -- from having worked the streets as an agent, why eyewitness testimony can be flawed. And I conveyed the speed of light, I'm sorry, the speed of sound and air and the problems with audible and visual stimuli from witnesses that, two hundred and sixty some witnesses, whose focus would have been brought to the same xyz coordinates in space. That **there were reasons why -- that those two hundred and sixty some witnesses could not have -- highly unlikely that they would have all seen the initial conflagration or explosion of that aircraft.** A position that was ignored for a very long time, but which eventually was confirmed by CIA analysis.

GRASSLEY: What was the reaction of the FBI officials to your scientific position?

TOBIN: Well I -- the officials on site after -- **when I first got there I basically walked on water, but after about a week to ten days when it became clear that I was not as supportive of the bomb or the missile proponents, I began to methodically get excluded from any input in the decision making process with regard to bomb or missile or even mechanical failure causes.**

GRASSLEY: Was your position ever validated? And if so, by whom and how?

TOBIN: My position of -- oh, with regard to the reasons why 260 witnesses could be wrong? Yes, in fact as I indicated, the CIA did a very excellent study and videotape showing the effects of an audible and visual stimulation, external stimuli and that they in fact confirmed that those witnesses, **it was highly unlikely that they would have seen the original event.**

And again, there were logical reasons why when one's attention is drawn over to that, to an omni-directional explosion, individuals will probably see fragments or something proceeding in an upward direction trailing smoke and flames, particularly if it's from the fuel tank. So there were reasons why some of the characteristics that were described probably were seen.

GRASSLEY: **Was there any scientific support justifying the missile theory cause of the crash?**

TOBIN: **No.**

GRASSLEY: What were some of the characteristics which negated the missile theories.

TOBIN: Well probably the most prominent -- actually there were two main areas negating missile theory. One, of course, again is the absence of impulsive loading or very high speed fractured and failure mechanisms. But secondly, there was serious issues with almost every theory, or almost every theory as to access of an external missile to the fuel tank.

Even with as I indicated earlier, one would focus on an area where we didn't recover all of the fuel tank, there were components nearby that would have blocked or at least recorded passage of any externally penetrating object and if that weren't the case then there many layers including the external underbelly of the aircraft.

And that was recovered -- a huge portion of that was recovered. So that basically, the only plausible theory for some of the missiles to have occurred would have been **if there were missile such that could get maybe through a one or two inch opening and make an immediate left, go in 90 degrees through a seam and then maybe take another 90 degree right and then maybe reverse itself and then come back over.**

But those were some of the considerations.

GRASSLEY: Like the single bullet theory. Despite the scientific explanations, **did any FBI officials with responsibility over the crash scene continue to advance the missile theories?**

TOBIN: **Yes.**

GRASSLEY: **Did they continue to pursue these missile theories in a scientifically responsible manner?** And please explain your answer and particularly I'd like to have you explain the pickle-fork missile theory.

TOBIN: The answer to the first portion of that is that, **no, they were not scientifically responsible.** The pickle-fork theory was a continued thorn in our sides. I tried to negate it and brunt it but it reared it's head in about the third or fourth day.

That was an area on the starboard side of the aircraft, the right side of the aircraft, that had the appearance of some significant amount of material missing.

Now I would also add that what's important in the evaluations of the damage was the missile size that was the most prevalent and available to have penetrated the aircraft or was of the most reasonable threat was three and a half to four inches in diameter. That's a critical dimension.

This pickle-fork area, I overheard the supervisor running the operation in briefings of dignitaries and other officials indicating that there was material missing and about like this. Well, the hands, first of all noted were in a curved manner which was not consistent with the damage but secondly it was also roughly three and a half to four inches or six inches in diameter so I saw that several times and I thought I probably should step in and try to clarify this to nip this in the bud because that was, I saw, fueling, and no pun intended, the perception and drawing out the theory that the missile caused the damage.

So I went to the supervisor and I said, if you got a few minutes let me describe to you the process by which a metallurgist or material science or in this case, I conclude that there is only about an inch to an inch and a half of material missing from the site. So I proceeded to take him through the logic processes. I actually used cardboard and cut-outs and got him to agree that the fracture here was of this shape and we cut the cardboard to the fracture size shape. Went to another portion of the hangar and I got an agreement that these fractures in fact matched.

This is where it's from in the front portion of the fuel tank on the starboard side. And proceeded to then show, OK, now if we unfold this folded material there's an additional three inches. I went through the whole process and got him to agree that it was only one to one and a half inches of material missing. The very next day I heard the same story to the next group of dignitaries he was briefing.

So I thought well, I'll try this again. So I went back that day or the next day and went through the same process and two days later the same three and a half to four inches of material was missing from this pickle-fork area and at that point both the bomb techs and I threw up our hands and...

GRASSLEY: Can you give me the name of the individual involved?

TOBIN: That would be SSA Ken Maxwell (ph).

GRASSLEY: Did they continue to -- no I think you've answered that. Let me ask you if you have any recommendations as to how transportation disasters should be investigated by the forensic communities in the future?

TOBIN: I would have several recommendations in that regard. Let me clarify if you don't mind just one sentence before I answer that. I would like to make clear that this was not a usual course of events for FBI NTSB interaction. The 25 years that I've been working this and my colleagues have been working this the NTSB was a beautiful system. It worked very, very well.

This particular investigation was the aberration in my experience. So, I would be reticent to suggest some course tuning but rather some fine tuning. So, the observations that I would offer I would suggest be taken in a fine tuning mode but my first observation is that **the outcome or practice of science for such public safety issues of such magnitude should not be dependent on a single individuals agenda, biases, idiosyncrasies or the strength of their personality which it clearly was in this case.**

My second observation or suggestion is that **scientists are not on an equal footing inside the law enforcement community in the strategic decision making process. There are a number of examples of that but basically scientists are, I won't say viewed as second class citizens but basically what happens inside the forensic community is if we collaborate or validate the prevailing theory, we walk on water.**

If the science does not validate the prevailing theory, then the science is just basically ignored. There are some other issues, I think the third would be that if there is some fine tuning, additional fine tuning, I would suggest that we revert back to the way that FBI and NTSB have worked these cases in the past. That the FBI's interests can be preserved by the presence of a material scientist who is experienced in materials deformation and damage working along side the NTSB, whether it's rail, maritime or aircraft disasters, represent the FBI's interest in determining whether there is or could be potential criminal activity involved in the cause.

And then allow that contingent to ratchet up whatever additional support or FBI involvement that there should be. So, that would be my, basically that the -- **I think part of the problem that occurred here was that with the process and the system being so singularly dependent upon a single individual, strong personality individual, that what I was seeing there in the first four to six weeks is what psychologists have found or concluded to be basically what was called group think.**

And I saw that very evident there and if I may explain the term, was after the Bay of Pigs failure, psychologists determined, one of, not the major cause of that disaster was that the decision making process was comprised of individuals of very similar backgrounds, similar training's, similar careers. In that strategic decision making process there was no descending opinion within that process.

And I saw that there was such a unanimity of opinion that it was a very -- I felt like I was trying to stop a train single handedly going 90 miles an hour there, but that's part of why I'm suggesting that if there's a way of fine tuning or if fine tuning is desired it should be somehow or another -- and I think the resolution I'm offering is by allowing the material scientists and a very small contingent to liaison and represent the FBI's interest, I believe that could go a long way in reducing the vulnerability of group think because NTSB clearly, in my personal experience are the world renowned experts in disaster investigations.

GRASSLEY: You know, what you just described here's some of the same problems that we found in Waco. The experts advice is not given a voice. The negotiators and the HRT was in hard control at that particular time in that event.

[GRASSLEY continued] Let me ask you something along the same line and that is about advice and how this went and what needs to be done for the future. **We've had FBI officials claim that the TWA flight 800 investigation was so good that it's a model for the future. Is it a model for the future?**

TOBIN: I can only address the material science and the scientific issues but I would say, **yes, it's a model but it's model of how now to integrate proper science and how not integrate the scientific conclusions into the strategic decision making process.** But clearly that's on the opposite end of the spectrum from the term that I believe the model was intended.

GRASSLEY: Are the problems you encountered during the TWA 800 investigation characteristic of other disaster investigations that you've conducted for the FBI?

TOBIN: No, Senator, I will underscore that this was a singular aberration that was not characteristic of my prior working arrangement with NTSB or on behalf of the FBI. It was a beautiful synergy and relationship in every other situation that I represented the FBI's material interest in.

GRASSLEY: This is my last question. Your observations or recommendations you might have of what went wrong with the system with regard to the flow of scientific information?

TOBIN: A major flaw that I do see in the system is that it's too easily ignored by the strategic decision makers. I think if you look at the Unabomb situation, the Richard Jewell Centennial Park Bombing, the TWA 800, the common thread is that the scientific flow of information is ignored when it doesn't support the prevailing theory.

And again that is the basis of which I suggest that scientists are not on equal footing in the decision making process within the law enforcement, at least within the FBI.

GRASSLEY: You're a breath of fresh air, Mr. Tobin. You've been very helpful to us for not only appearing today but for our getting the necessary background that needs to be done to make this a valuable contribution to the process of constitutional oversight by the Congress.

I don't know how to thank you other than to say thank you. And obviously you set an example for a person who was trained to seek the truth, to work for an organization that is always supposed to seek the truth and let the truth determine guilt or innocence and I think you have lived up to that very well and in particular you shine in this black hole of investigation that we had in regard of the TWA case. I thank you very much and I'll dismiss you at this point.

TOBIN: Thank you, Mr. Chairman.

Responses of William A. Tobin to Questions From Senator Thurmond

Question 1. The substance of your testimony appears to be that you had concluded by mid-September 1996 that the cause of the Flight 800 crash was mechanical. Was your conclusion in mid-September preliminary or final? Please explain fully.

Answer. My conclusion and testimony were that there was no indication of criminal activity, not that "the cause of the Flight 800 crash was mechanical." Absence of criminal activity does not, per se, suggest "mechanical failure". In my experience, non-criminal human performance issues have periodically been found to cause or contribute to transport, structure and/or system failures.

The terms "preliminary" and "final" imply a more distinct or emphatic delineation than warrants for the circumstances. I was very strong in my opinion as of the end of August 1996 that no criminal activity was evident. My opinion was sufficiently strong that, to use FBI resources more effectively, I urged keeping only a small contingent to represent FBI interests, e.g., one metallurgist and several local agents, as had been done with almost all other transport disasters I had worked the prior 25 years. I indicated that the NTSB was quite qualified and capable of recognizing unusual transport material deformation and damage and that having an FBI forensic metallurgist on site would maintain FBI interests and allow for escalating FBI presence if necessary or desired.

As strong as my opinion was by late August 1996, I was always open for additional information and data, should unusual circumstances be discovered. However, I considered that possibility very remote. As my colleague, Dr. Michael Smith, whom I was training at the time indicated when he returned from the Bruntingthorpe testing, even the smallest of charges (used in the tests) was so demonstrative that " * * * it was so obvious * * *" that we had no such indication on any of the pieces recovered from the TWA 800 crash. And, again, the charge used for the testing was miniscule compared to what could be expected from bombs or missiles.

Question 2. You testified that, in September 1996, all the metallurgists, including those from NTSB, and all the explosives examiners were united in their opinion that the crash was not the result of a bomb or a missile. Yet, in June 1997, Chairman Hall, testifying before the House Committee on Transportation and Infrastructure Subcommittee on Aviation said that the NTSB was pursuing six scenarios as the cause of the crash, including a proximity missile explosion and a small explosive charge placed in or near the center fuel tank. In addition, NTSB funded a series of tests at Bruntingthorpe, United Kingdom, that ran for several months from early to mid-1997 to test various theories, including the small-explosive-charge theory. Please explain the need for this continued study if there was no difference in opinion.

Answer. It was my understanding that the Bruntingthorpe testing was scheduled, among numerous other considerations, primarily to view an explosion of the center fuel tank. The NTSB was convinced early on that the initial reason the aircraft lost structural integrity was that the center wing tank exploded due to ignition of fuel vapor in the tank. However, they could not explain what ignited the tank and, therefore, all "scenarios" or possibilities had to be entertained until enough evidence existed to support one to the exclusion of the others. The additional testing was expected to show that the impulsive loading scenarios (bombs, missiles, shaped charges) would have left distinct physical evidence which would be identifiable in the wreckage. Since such testing was a rare occurrence and few 747's

were available for repeated testing, testing for most of the ``scenarios" was scheduled for the Bruntingthorpe tests.

In the light of Mr. Kallstrom's continuing insistence that "all the pieces of the wreckage [had] not been recovered", one of the reasons supporting scheduling the tests was that the tests would be useful to convey what was known to the forensic metallurgists: that characteristics of bomb or missile damage would have been evident even if substantially less of the aircraft had been recovered.

Question 3. You testified that there were reasons you did not take notes or otherwise document your examinations in TWA Flight 800. Please explain those reasons.

Answer. (1) By Mr. Kallstrom's own public representations, there were over one million damaged aircraft pieces and parts. Metallurgical examination notes would likely average two or three full pages per part, particularly when it would necessarily include a complete description of the part, its geometry and uniquely identifying characteristics (for subsequent identification). I would still be taking notes in Calverton, N.Y. today if in the normal forensic examination mode. This would have comprised an unduly burdensome and unwarranted effort, particularly inasmuch as **no statutory authority existed for the FBI to "determine the cause of the crash", only whether any characteristic existed suggestive of criminal activity**. The alternative would have been to record, "Metallurgical examinations revealed no characteristic indicative of criminal activity" one million times, a notation that would still require a complete description and measurements of each part to uniquely identify the item at a later date.

(2) The material damage and component failures were concluded to have resulted from low order explosion (fuel tank), impact and corrosion mechanisms, with enough representative parts to effectively and strongly indicate no FBI metallurgical or materials science involvement was mandated unless NTSB subsequently developed characteristics or indications of possible criminal activity or cause(s). This was obvious to Dr. Michael Smith (my colleague) and I within the first several weeks.

(3) **Every recovered piece was examined at least once and jointly, by both FBI and NTSB metallurgists**. I was part of the fracture sequencing group and regularly reviewed the logs/reports of the Metallurgy Group findings, which all parties signed, **including metallurgists from the financially interested parties**.

(4) I did not believe the taxpayers should fund duplicitous and costly note taking, particularly when there existed notes jointly obtained and agreed upon by all metallurgists involved; there existed a contemporaneous log and recording of the group's findings, **we were all in agreement, and there was no indication of criminal involvement**.

(5) Duplicitous notes have been used in the past to "muddy the waters" or to the serious detriment of interested parties in a judicial process. Two scientists will generally not take identical readings or measurements of undamaged and undeformed parts, let alone badly damaged (extensively bent and crushed) items.

(6) It was my conviction that prima facie statutory authority rested with the NTSB, and until they, my colleague or I concluded that material damage suggested a reasonable possibility of criminal involvement, there was plenty of time to "crank up" a forensic investigation and subject the appropriate pieces to extensive forensic examinations. There were no time or schedule exigencies which would have precluded extensive note taking immediately upon observation of a characteristic suggestive of criminal activity. As far as I am aware, the aircraft remnants are still in position as reconstructed in Calverton, New York.

<http://judiciary.senate.gov/oldsite/51099sum.htm>

Memorandum

To: Thomas H. Jourdan

From: William A. Tobin

Date: 07-15-97

Subject: Metallurgical Status Report: TWA 800

The last FBI metallurgical examinations or evaluations conducted of any significance, relating to damaged TWA 800 components, were in approximately October 1996. As directed by you, on January 1, 1997, I elicited a commitment for the services of a retired research scientist and metallographic laboratory specializing in the aluminum alloys primarily comprising the Boeing 747-100.

Since May 1997, the scientist has been researching the location, morphology, and formation fracture mechanics of small holes with "spike tooth" fractures, the only metallurgically significant indicator present at a high strain rate. However, the holes are relatively small (none of which could reasonably have been responsible for "instantaneous"

cessation of the recorders), exhibit no apparent preferred concentration, exhibit no apparent isotropy, and are in matrices which exhibit no characteristics of impulsive loading or proximity to explosive (ordnance) materials.

The scientist has observed no indication of bomb or missile damage, and brings to ten the number of metallurgists officially examining and pronouncing the absence of bomb or missile damage, **four from NTSB, three from Boeing, two from FBI Laboratory, and one scientist consultant.**

It is noted that three of the aforementioned metallurgists could be considered to have a strong organizational interest in the finding that something other than mechanical failure initiated the catastrophic sequence of events.

The "spike tooth" failures, known to both the NTSB and FBI from other incidents to be the result of high velocity contacts from damaged aircraft components, have recently been duplicated in empirical tests conducted by the NTSB where metal pieces were brought in contact with the aircraft skin at strain rates already known to be available from the forward velocity of the passenger jet and velocities associated with free fall from 13,800 feet. In view of these observations, therefore, it is unreasonable to expect the "spike tooth" failures will be related to any criminal behavior which could have caused the disaster.

For the complete transcript of the Grassley Hearing [click here.](#)

[The "Missile Witnesses" Myth](#)