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22 July 1996

MEMORANDUM FOR:

FROM:

SUBJECT: TWA 800 Information

REFERENCE:

APPROVED FOR RELEASE DATE: 30-Mar-2012

22 July 1996

MEMORANDUM FOR:

FROM:

SUBJECT: TWA 800 Information

REFERENCE: I would appreciate any comments you may have on this note, or any thoughts on the TWA disaster in general, especially on the part highlighted in red. I maintain that even a hit on the aircraft fuel tank by a hypothetical small SAM is unlikely to make the fuel actually detonate. This conclusion is based much more on the "never heard of it happening, and doesn't seem to me like it would" method of analysis rather than any actual expertise in detonation mechanics. I also would appreciate comments on the likelihood of the fuel detonating on the way down, I suppose after the tanks had cracked and sprayed fuel everywhere. Trying to take all data at face value, and explain a breakup at high altitude seen on radar, followed at least 19 seconds (and possibly as much as 40 seconds) later by an "explosion" seen by along with eyewitness accounts of an explosion and fireball while the plane was still in the air. Thanks.

20 July 1996

MEMORANDUM FOR:

FROM:

SUBJECT: TWA 800 Information

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REFERENCE:

Summary:

We have reviewed aircraft track data files recorded by FAA's Lakehead radar site and provided to us by FAA personnel. We can see no evidence in the track data files of any unidentified aircraft in the vicinity of TWA flight 800, nor is there evidence of any missile. We believe that it is unlikely that even a small airplane could be in the vicinity of TWA 800 and be undetected by the radar. A missile is unlikely to be seen by the radar even if it were present.

At the time the TWA 800 disintegrated, it was at an altitude of approximately 13,700 feet. This is above the operational altitude of most shoulder fired surface-to-air missiles (SAMs), but is just reachable by the most kinematically capable SAMs like the Russian SA-16. Even an SA-16 could not reach TWA 800 from land. It would have to come from a boat under the flight path, or from another plane. Even from a boat under the flight path, reaching TWA 800 would have to be considered a very good shot at the edge of the missile's performance boundary. While not impossible, intercepting a 747 with a small airplane, and firing a shoulder launched SAM at it would be a difficult exercise in precision timing, given the speed advantage of the 747. This, coupled with the lack of radar evidence of any unidentified airplane in the area leads us to believe that the "SAM from an airplane" scenario is extremely unlikely. Further, even a hit by an SA-16 is unlikely in itself to cause the kind of catastrophic detonation of TWA 800 described by eyewitnesses.

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Background:

Analysts from the DI's Office of Weapons, Technology and Proliferation (OWTP) met with FBI and FAA officials on 19 July to discuss the radar data available from the TWA flight 800 crash. The FBI officials present were The FAA was represented by who is manager of Quality Assurance at FAA's Washington Headquarters. OWTP analysts present were The following The purpose of the meeting was to determine whether an unidentified aircraft was in the vicinity of TWA 800 at the time of the disaster.

Apparently the QA specialist had plotted the available tracking data using a commercial, uncertified (by FAA) computer program called RadarView. RadarView is used by search and rescue teams, and by plaintiffs consultants to display track data following an aircraft accident.

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We have not talked to the QA specialist (b)(5) (b)(6)

It was our intent to get a tape of the raw radar receiver data Unfortunately, the only data available for the scenario is the post detection and processing of the target tracking data. We confirmed with a radar expert at the FAA that the raw radar energy (the radar video data) is not recorded or stored by the FAA. The data provided was ASCII text files with time, x and y positions, latitude, longitude, transponder number, altitude (with transponder), and track symbols for unidentified targets. Since this data represents hard decisions made automatically by the radar's internal software, we were not able provide any special processing or insights into this data. However, we did perform track analysis of the data to determine what the FAA QA specialist may have seen.

We identified three aircraft in the area at the time of the explosion. In addition to TWA 800, a US Air flight with transponder code active was in the vicinity, as well as a military P3 aircraft with an intermittent radar "skin" track. The transponder of the P3 was not received by the radar, therefore it was tracked without altitude information. Once we determined the tracks of the aircraft known to be in the area, we began looking for other possible tracks in the many layers of clutter available in the radar track data. We saw no evidence of any unidentified aircraft in the area, only intermittent clutter before the explosion, and clutter plus debris after the explosion. We told the FAA and the FBI that we would be happy to perform any service they might consider useful in their investigation, but that since the data were simply processed track data files, we could not really provide any unique insights on the track information. They went away seeming satisfied with our "independent confirmation" of the FAA interpretation of the track data.

We believe it is unlikely that this radar would miss the presence of even a small plane in the vicinity of TWA 800. This is a big, long-range surveillance radar that tracked a variety of small aircraft that converged on the area after the disaster down to altitudes as low as 100 feet. It is designed to track just this type of aircraft at much longer ranges than it would need in this incident. A missile is small enough to be missed by the radar, and in any case its short flight time would probably allow for only one "hit" during the long radar scan time. Probably a missile would not be seen by this radar, even if it was there.

SAM Possibilities:

In discussing possible scenarios, I explained that the range from shore to the point of the explosion is beyond the intercept range of shoulder-launched SAMs. In fact the range from a boat directly under the flight path of the TWA jet would have been just inside the outer limit of the most kinematically capable shoulder-launched SAMs like the Russian SA-16. I said that if one wanted to shoot down a 747 from a boat, the boat would have been much better placed closer to the airport so the airplane would be at a lower altitude for the intercept. We also discussed the possibility of shooting a SAM out the door of a small aircraft. I said that this would not be physically impossible, but would be a very difficult exercise in precision timing, and would serve no obvious advantage over firing from the water. In any event, I maintained that the warheads available in modern shoulder-launched SAMs would be unlikely to cause the large explosion and fireball seen by eyewitnesses. We will attempt to determine the likelihood that that an explosion with a fireball could be caused by the airplane's fuel sometime after intercept by a SAM causes the plane to begin to crash. I said that I was skeptical that an actual detonation would occur from the breakup of the airplane's fuel tanks, if only because many airplanes have crashed before without a detonation. However, I am not an expert in these matters, and we will consult with others in OWTP who are to get a judgment.

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[redacted]

Status:

The status of things is that the FBI is going to check with the Navy to see if an exercise they were reportedly conducting in the area included any ships with radar tracking that might include raw radar video recordings [redacted] If they have only track data similar to the data that the FAA provided, we said we would be proud to help them look at it, but that FAA could likely do as good a job as we could of plotting track data. Similarly, FAA track data is available from Boston's Logan airport, and we offered to look at it if they wanted us to. [redacted] FAA and FBI took away what they considered a statement from us that we agree that the FAA data files contain no information that would lead us to believe that an unidentified aircraft was active in the area of the explosion, or that a missile was used to shoot down the airplane. [redacted]

CC: [redacted]

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30 July 1996

MEMORANDUM FOR:

FROM:

SUBJECT: Hold The Press

REFERENCE:

NOTE FOR:

APPROVED FOR RELEASE DATE:
23-Apr-2012

FROM:
DATE: 07-30-96 08:40:25 AM
SUBJECT: Hold The Press

I received a call from an FBI agent, from NY yesterday afternoon at about 530. Apparently, he and two other agents, one familiar with radar and avionics and a former F-14 driver have apparently been the agents involved with interviewing the numerous witnesses who have reported

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seeing something in the sky at or about the time of the TWA incident. Bottom Line is this: [redacted] is filing a report (now in draft with only minor corrections left to make) within the next day or so with a conclusion (based exclusively on witness reporting) that there is a "high probability that the incident was caused by a MANPAD". [redacted] reported that he had what he believed to be "overwhelming evidence", which although circumstantial, was too consistent between independent witnesses and was too much to ignore. [redacted] was "almost positive" that the incident which occurred on the 17th "was caused by a MANPAD." [redacted]

Now here is what he reported to me by which he reached his conclusions: 144 non-reluctant (ie. volunteering information) witnesses of all educations and backgrounds (mainly professionals) stepping forth to all describe a similar sort of occurrence, yet independent of one another. 2 % of those individuals reported a "shooting star", 8 % "fireworks, and some 90% described what they saw as a "flare like" object. [redacted] but nevertheless am reporting what [redacted] passed on to me). Twelve of the witnesses were in the air, some on the shore, some at sea during the incident. He stressed that all came forward voluntarily and were what he would call in his years of this type of work, excellent witnesses. [redacted]

Now here is where it gets even more interesting. One of the witnesses, apparently a AC maintenance worker who is also a bit of an amateur video buff, was up on a roof taking video of the sun rise, when something peculiar caught his eye on the 12th of July, (5 DAYS BEFORE THE TWA INCIDENT). He videoed the 'something' which caught his eye (he thought it was a 'rocket') and [redacted] reported that MISC analysts, after viewing the tape, reported that it was there conclusion that it was a MANPAD (I INTEND TO QUESTION TH E MSIC FOLKS ABOUT THIS LATER THIS MORNING AND WILL POST ANOTHER NOTE). [redacted]

In a bit more discussion as to where (a locality where) the majority of witnesses might point to what they had seen, [redacted] reported that the former F-14 driver who was working with him on the investigation put the location of what the witnesses saw at anywhere from 14 to 28 miles away from the area of the main wreckage field (which by my indications would put what the witnesses saw quite a bit further away from where the possible shooter locations would have been (yet, I do not believe there estimation of distances were probably very accurate - mine would not be). Nevertheless, [redacted] believed that the majority of the reports they had were consistent with what we had provided him ([redacted] told me that we would be one of the first to get the final report once he was allowed to release his findings - he could not release a draft at this time). Apparently they have also recently received four reports from witnesses claiming that they saw a similar surface-to-air something launched on the 7th. If true, the FBI would now have witnesses reporting seeing something peculiar race toward the sky on the 7th, 12th, and the 17th (the evening of the TWA incident). [redacted] reported that a commercial air freighter was in the correct vicinity during which the video was shot and could have been a potential target of a MANPAD on that day. That put each incident five days apart from the last and could indicate, if MANPAD related, that a potential shooter (or shooters) were making multiple attempts at hitting an aircraft. If true, this could certainly begin to account for the unlikelihood of making a first, lucky shot if the shooter had two or more attempts at getting it right before the incident (yet still more conflicting evidence exists to indicate that it was not a MANPAD which I will talk about last). [redacted]

Finally upon reporting to [redacted] exactly how a MANPAD would work and what witnesses might see (something MSIC analysts probably already did anyway, although he seemed very interested to hear it), he reported that that was exactly how many of the witnesses reported what they had saw. Even to the point of seeing a flash go upward for several seconds, then only smoke, finally another small slash, a few second delay and a "pop", then another larger flash. This is the summary of what we discussed. After questions concerning whether or not other types of non-heat seeking MANPADS could have been used, I responded that yes, command (laser beam riders) were an option, but that shorter ranges (ie. smaller envelopes especially against a fairly fast target if still non-maneuvering), less availability and choice by

almost all terrorists for numerous reasons leads us to believe it would have been an IR SAM if anything. I reported to [redacted] the majority if not all of our concerns, issues, and problems with a determination that the incident was most-likely caused by a MANPAD. He had little to refute our concerns, maintaining his confidence in the large number of individual witnesses. I reported to him, as we have said repeatedly, that a MANPAD was certainly still a possibility from all that we had seen, but that it was still deemed less likely (requiring an extremely good shooter, a bit of serious luck, or perhaps adding to the luck factor, as [redacted] pointed out earlier, many oppurtunities to shoot and get it right after multiple misses). [redacted] appreciated our thoughts on the issue and I have his number to report more from our end or if he has any more questions for us at a later time. [redacted]

I also have some more concerns concerning use of a MANPAD which still appear, to me at least, to be inconsistent with the evidence which has recently been uncovered. The forward fuselage section and forward gear of the aircraft was found 1.5 miles forward of the main debris area along the flight route. This indicates at the very least seperation of the forward portion of the aircraft with the main fuselage and remainder of the aircraft. This, to me, is inconsistent with a MANPAD. If it was a MANPAD, it would hit on or near an engine, and even if it did not do this for some reason, a MANPAD, I do not believe (I will defer to those with more expertise on warheads and explosives than I), could have caused the forward part of the aircraft to come apart like it apparently did. This is a big counterpoint for me in accepting [redacted] report. Experts on TV yesterday evening continue reporting that the indications are that because of this new piece of evidence, that "it is hard to imagine anything but a bomb" causing this type of seperation, completely discounting the missile theory entirely as inconsistent with this evidence. Interestingly this new information is also entirely consistent with what occurred with the Lockerby Pan Am 103 flight as well as an Air India flight in 1982 (both having bombs in the forward cargo hold causing a seperation of the forward fuselage like TWA 800). In addition three of the engines have been found with no unusual damage reported, which although again not conclusive, causes more doubts toward a MANPAD. [redacted]

Well, just wanted to report what [redacted] and I discussed, my response to him, a heads-up to the FBI report which should be coming, as well as FBI's appreciation for the information we provided. Suppose we must hold the presses as we await what is uncovered from the analysis of the forward portion of the fuselage (which they are bringing up today) for a definitive conclusion as to the cause. Although I certainly think it could still be a MANPAD (and the FBI witnesses apparently suggest this to be the case), which we have always said from the beginning, there are still pieces of information which rather strongly suggest otherwise and so I still have my doubts. This should all be decided soon I would think. Thanks for reading, [redacted]

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07/30/1996 01:25 PM

To
cc
bcc
Subject Re: Hold The Press

APPROVED FOR RELEASE DATE: 29-Mar-2012

Looking forward to the FBI report. I've got some other tidbits to mull over.

Things that have to be accounted for:

1.) Initial problem occured at an altitude of about 13,700 feet, with the plane flying at about 390 kt and climbing.

2.) Flight recorders stopped working at 00:31:08 UTC; last NY beacon response at 00:31:10 UTC. I don't know with what precision the flight recorder time is set, so I don't know what if any significance should be attached to the 2 second time difference.

3.) By the next NY radar scan, the plane had covered about 1.7 km, for a ground speed of about 270 kt.

4.) By the next NY radar scan, the plane had covered about 2.4 km, for a ground speed of about 380 kt.

5.) All subsequent radar scans show blips within about 1 km of the aircraft position at point 4, and close to the reported infrared hit, and the Coast Guard reported impact site.

6.) The ground track of the aircraft after the problem remains very close to the ground track before the problem.

7.) The pilots never contact the controllers after the initiation of the problem.

8.) Multiple eyewitnesses on the ground described what they initially thought was a descending flare that erupted into a fireball and then fell straight down for about 30 seconds to a water impact, resulting in a large explosion that they could feel as well as hear (note that impact was about 12 miles off shore, so the sound and feel of the explosion would take almost 60 seconds to reach the eyewitnesses. Correlating what they saw with what they heard is therefore difficult). It would take about 30 seconds for heavy debris to fall from 8000 feet to the ground.

9.) Multiple eyewitnesses in the air described initiation of the fireball as being at or below their own altitude of 8000 to 9000 feet.

10.) Front section of plane was found about 2 miles behind main secton of the plane. I would say that this implies the front section fell off before the fireball-disintegration of the rest of the plane, but after initial problem at 13,700 feet.

So I think what happened to the plane is something like this: At altitude a problem occured which caused a loss of electrical power (no recorders, no beacon, no radio call) and loss of control, and initiated a fire (looked like a flare). The plane began a steep, power-on descent (speeds imply a 40 - 50 degree descent angle). Speed of the aircraft, and its continuation in track imply that it is still in one piece. As the plane gathers speed in descent, it likely begins to flatten its trajectory (as implied by the increase in ground speed from point 3 to point 4 listed above), much like a dropped paper airplane has a tendency to do. This flattening of the trajectory produces aerodynamic forces on the already structurally damaged plane that, at an altitude of about 8000 feet, rips off the front section. The rest of the plane continues on, probably tumbling now, ripping open the wing tanks and initiating the fireball. Alternatively, the center tank (which reportedly was not fueled since the aircraft was not full, and therefore would have been full of

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remaining vapor rather than liquid) may have actually exploded, subsequently igniting fuel from the wing tanks. The now disintegrated aircraft falls almost straight down to water impact. Water impact explosion is "felt" by eyewitnesses, and detected by [redacted].

A scenario that fits with most of the facts is a "Lockerbie-like" scenario.

-- A bomb or explosive accident on the plane in the forward part of the forward cargo hold near the electrical compartment.

-- A bomb this far forward could knock out electrical power immediately, but wouldn't seem to me to be likely to cause the entire plane forward of the wings to eventually fall off as one piece. Sort of depends on how reliable the news reports are about "the entire front section of the plane forward of the wings."

-- On the other hand, fire from the bomb could have spread to the center tank, causing it to explode later on and cut the plane in half. Only 20 to 30 seconds is availiable for the fire to spread in the containerized cargo section, which seems pretty fast(?).

Another bomb scenario is the "Lifeguard" scenario.

-- Nightline reported that TWA800 was designated a Lifeguard flight. I have confirmed this with the air traffic control transcripts -- it was indeed designated "TWA800 (Lifeguard)", and the ground controllers and pilot mention it several times ("We are a lifeguard" . . . "just let him know you are a lifeguard").

-- Nightline also reported that lifeguard means that the plane is carrying a container of donor organs and therefore gets priority in scheduling. [redacted] gave me UPI and AP news stories confirming what lifeguard means, and saying that TWA 800 was carrying corneas.

-- Nightline and the UPI and AP stories further reported that the procedure for Lifeguard flights is that an ambulance delivers a sealed package that cannot be x-rayed or opened, and that this package is placed in the cockpit with the flight crew.

-- If a bomb was in a package like this, it could cause most of the things we know happened to happen. The FBI has downplayed this scenario, with the lead investigator quoted in the UPI story as saying he is "not particularly concerned about it."

-- If there was a bomb in the lifeguard package in the cockpit, I am not sure why it would cause all of the plane forward of the wings to fall off as one piece. Again, it depends on what "forward section of the plane" really means, and on how fast a fire could spread to the center tank. Still, it makes a good story, and someone should write a book using it, even if it didn't happen here.

The missile scenario would require an unfortunate confluence of events.

-- To get the electrical power to shutdown, you would need to "miss" the engines, and instead hit the electrical compartment by mistake (unless it is a command guided missile that happens to hit the electrical compatment, rather than an IR missile in which case it wouldn't be a mistake).

-- This could cause the plane to lose power and control, and begin an in-track descent.

-- Getting the whole front of the plane forward of the wings to come off is harder, because I wouldn't expect a small SAM warhead (around 1 or 2 pounds of explosive charge) to cause massive structural damage on a plane this size. We still could postulate that it ignites a fire that spreads to the "empty" center fuel tank, causing it to explode later, but we're still left with the nettlesome question of how that could happen so fast.

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-- If instead we postulate that the missile hits the "empty" fuel tank, it could detonate the remaining fuel vapor, and crack off the front of the plane, but I don't see how the plane could come down in track at the speeds it does if it is "cracked" in the initial detonation. If we say that the tank explosion caused by a SAM hit severely damages the plane, but doesn't initially crack it in half, then I don't know why all electrical power would be lost immediately, unless all the power lines are routed through this area.

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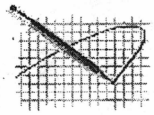

10/21/1996 03:43 PM

To

cc

bcc

Subject FYI - TWA 800 ? - Video analysis results

Just a heads-up in the continuing TWA 800 issue. NIMA folks finally finished analyzing the amateur video shot several days before the TWA 800 incident which showed a 'smoke trail' which some analysts believed, at least initially, might be a MANPAD smoke trail (the experts were 50/50 split on what it really was - unfortunately, since I am not an expert, Ill call it luck that I turned out to be on the right side this time...Ha!) Anyway, turns out from their work with the video and stills (involving time of the trail (over three minutes) and the fact that it is rising) that the trail appears to have most likely been a contrail from a very far away aircraft and not in fact a MANPAD smoke trail. NIMA folks had come over for coordination on this and we have concurred. The information has been briefed to as well as the FBI who now have it in hand. Thanks,

APPROVED FOR
RELEASE DATE:
19-Mar-2012

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NOTE FOR:
FROM:
DATE: 12-02-96 05:54:59 PM
SUBJECT: Celestial Questions

and I are in the process of analyzing TWA 800 eyewitness data which the FBI gave us last week. One of the things we'd like to determine is the precise sunset angle (azimuth) on 17 July 1996 for an "observer" located at 40 degrees 39 minutes north latitude, 72 degrees 41 minutes west longitude. This is our best estimate of where TWA Flight 800 was located when its data and voice recorders ceased operating. (I believe sunset occurred at about 8:24 PM local time that evening at that location, but I'd like to get this number more precisely if possible.)

Also, for this latitude and longitude, how high above the surface of the earth (actually, the water) were the sun's illuminating rays at 8:31:10 PM --- the time at which the recorders ceased operating?

And one final question...at that latitude on that date, how quickly did sunset propagate from east to west? (I did a quick calculation and got almost exactly 1,000 ft/sec.)

Are you aware of any reference sources or computer programs we could use to make these calculations...in particular the first two? [If you give me a call when you get a chance or drop by, I'll explain why answers to these questions are important to the investigation.]

CC:

APPROVED FOR
RELEASE DATE:
30-Mar-2012

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TRANSCRIPT OF PROCEEDINGS

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(b)(6)

UNITED STATES OF AMERICA

CENTRAL INTELLIGENCE AGENCY

ORIGINAL
(Edited)

APPROVED FOR
RELEASE DATE:
30-Mar-2012

BRIEFING ON

TWA FLIGHT 800

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(b)(3)

~~SECRET~~

APPROVED FOR RELEASE DATE: 19-Mar-2012

22 January 1997

MEMORANDUM FOR:

FROM:

SUBJECT: SNL and TWA-800 Analytic Support

REFERENCE:

NOTE FOR:
FROM:
DATE: 01-22-97 10:39:58 AM
SUBJECT: SNL and TWA-800 Analytic Support

asked me to respond to your question regarding the possibility of sharing with Sandia National Laboratory (SNL) the analytic work that OWTP have done in support of the investigation into the TWA-800 disaster. Please excuse me for not responding yesterday but my colleague on the matter, of OWTP and the DI's lead analyst on the topic, was out yesterday and I wanted to coordinate my response with him.

After speaking with this morning, we both agree that there are no considerations to prevent us from sharing with SNL the work we have done. The analysis was carried out using a mixture of open source information and public information provided by the FAA. We did receive copies of some of the FBI's witness reports but they are not considered sensitive law enforcement documents. The computer modeling efforts used commercial software packages and do not represent operationally sensitive sources and methods. Therefore, and I are both eager to work with SNL on taking a new look at the information.

~~SECRET~~

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After having worked with the FBI and sharing some of their concerns on how the investigation has been conducted, it is very important if SNL is to be able to contribute to this process that they have the full cooperation of the FAA, FBI, and NTSB. Perhaps they can act in the role of "independent investigator," not influenced by the institutional views of any of the other players. This has not been the case up until now and many of us feel that the lack of a free information exchange among all the parties has contributed greatly to the lack of progress and general sense of frustration surrounding the investigation.

[redacted] and I will be happy to serve in whatever ways we can to contribute to this important concern.

[redacted]

CC: [redacted]

CC:

See Concordance Report

UNIQUE WORDS: **1,309**
TOTAL OCCURRENCES: **4,659**
NOISE WORDS: **391**
TOTAL WORDS IN FILE: **14,633**

SINGLE FILE CONCORDANCE

CASE INSENSITIVE

INCLUDES ALL TEXT OCCURRENCES

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(b)(3)

(b)(7)(c)

12 February 1997

To
cc
bcc
Subject

APPROVED FOR RELEASE DATE: 19-Mar-2012

10 February 1997

MEMORANDUM FOR:

FROM:

SUBJECT: TWA Flight 800: Investigation of "The Missile Theory" [updated 5 FEB 97]

REFERENCE: ..per your request. ---

- TWA800.PPT

NOTE FOR:

FROM:
DATE: 01-29-97 08:20:50 PM
SUBJECT: TWA Flight 800: Investigation of "The Missile Theory" [updated 5 FEB 97]

..as we discussed at our meeting last week, here's an evolving in-progress draft of the TWA 800 write-up and an attachment of some of the Powerpoint slides we'll be using in our briefings to the FBI and others. [Some of these slides are for analytical and background purposes only and will not be included in any briefings.] As we proceed with this work, any of this material you need can be made available to you for the video.

As we discussed, we'll soon be going to Calverton, NY at the request of the FBI to brief them and visit/film the aircraft reconstruction site and key eyewitness locations. in OWTP is the focal point for setting up this trip. The FBI is aware that the video is being made and fully supports the project.

At your convenience, we can schedule our next planning meeting for the video.

TWA Flight 800: Investigation of "The Missile Theory"

[WORKING DRAFT]

On 17 July 1996, twelve minutes after departing New York's Kennedy Airport, TWA Flight 800 exploded in midair and plunged into the Atlantic Ocean nine miles off the coast of Long Island. All 230 people aboard perished.

Since the disaster, investigators have focused on three possible causes...a bomb, a missile, or a mechanical failure. Of particular concern to FBI and CIA analysts, dozens of witnesses reported

seeing an object --- usually described as a "flare" or "firework" --- ascend toward the aircraft just before it exploded. Was a missile involved? Did foreign terrorists intentionally destroy the 747?

At the request of the FBI, CIA analysts were asked to look into these possibilities. Their conclusion: A missile was not involved. What the witnesses saw was in fact the aircraft itself, just seconds after the first of several onboard explosions.

How was this conclusion reached?

The key to determining what each witness observed was determining when each observation was made relative to the sequence of events taking place on the aircraft. But although witnesses often provided detailed descriptions of what they saw and heard, they could not provide exact "clock times" for their observations.

What they could and often did recall were the precise directions in which they were looking, and the timing of what they heard relative to what they saw. These sight and sound observations were the key to determining when observations were made relative to each other. This led to the conclusion that many sightings originally interpreted to be of a missile took place after an explosion occurred aboard the aircraft. There is no evidence that any "missile" sighting occurred before TWA 800 exploded.

The Analytical Procedure

At precisely 0831:07.5 PM, the "flight data recorder" and "cockpit voice recorder" aboard TWA 800 suddenly ceased operating. These devices carry their own clocks and record time along with other diagnostic measurements. The data recorder registered no unusual activity prior to the end of its operation. But the voice recorder registered a fraction of a second of "loud noise" just before it ceased operating. National Transportation Safety Board analysts concluded that this was sound from the explosion which destroyed the aircraft.

Based on flight recorder data and airport radar tracking, the aircraft was traveling at a speed of 380 knots at an altitude of 13,820 feet and a heading of 71 degrees when its recorders ceased operating. So it was possible to determine the precise distance and direction of travel of the aircraft with respect to each witness at the instant the aircraft exploded. This, in turn, made it possible to calculate precisely how long it should take the explosion sound to reach each witness...and to associate what witnesses heard with what they saw.

Many witnesses reported hearing a loud "boom" as part of their observations, often followed at varying intervals by one or two smaller "booms." Assuming the first of these sounds originated when the recorders ceased operating...0831:07.5 PM...it was possible to synchronize many witnesses visual observations with activity aboard TWA 800.

We can be confident that no sound from the aircraft audible to witnesses was produced before the sound heard at the end of the cockpit voice recording. The closest witness hearing such sounds was more than nine miles away...any sound heard at this distance certainly would have been recorded.

Witnesses

One observer reported to FBI investigators that he saw a white light --- perhaps a firework --- traveling skyward and right-to-left, ascending at approximately a 40-degree angle with respect to the horizon. The light "zig-zagged" as it rose, and at the apex of its travel "arched over" and disappeared. This observation lasted about 15 seconds. Two or three seconds later, a fireball appeared in the sky

near where the white light had disappeared.

After this fireball descended out of view, the witness heard a loud explosion which shook the bridge on which he was standing...followed eight to nine seconds later by another explosion (or maybe two)...followed one second later by a final explosion.

This witness was able to specify a landmark over which the white light first appeared --- a house near the beach --- and a second house behind which the descending fireball disappeared. FBI investigators determined precisely where the witness was standing using a Global Positioning System (GPS) receiver, and then measured the angle to the two houses using a magnetic compass.

Calculations based on the flight path of the aircraft with respect to this witness show that when its onboard recorders ceased operating, the aircraft was just passing over the house above which the white light first appeared. The aircraft apparently exploded at this instant, and the white light the witness saw was very likely the aircraft briefly ascending and "arching over" after it exploded. The white light could not have come from a missile, because the aircraft had exploded well before the end of the white light's ascent.

The witness's observations of the white light are consistent with the aircraft's known horizontal motion during the 17 to 18 seconds which elapsed just after the onboard recordings ended. Radar data show that during this time, the aircraft traveled six and one-half degrees from right-to-left with respect to this witness...placing it about where the witness claimed the fireball first appeared.

But how steeply would the aircraft have had to ascend after its first explosion to "mimic" a 40-degree ascending firework? And if explosions aboard the aircraft occurred about 17 to 18 seconds apart --- corresponding with the first sighting of the white light and the fireball, respectively --- why were they heard about 10 seconds apart by this witness?

Considering the witness's viewing angle and the direction and speed of the aircraft's flight, the aircraft would have to climb at a 29-degree angle in order to appear to the witness to be ascending at a 40-degree angle. Taking into account the time it would take to pitch up just after the initial explosion...and "arch over" just before the fireball explosion...this would place the aircraft about 7,400 feet downrange of its initial location and at an altitude of about 16,800 feet when the fireball explosion occurred.

These numbers were used to calculate how the apparent relative spacing of the sounds is affected by the aircraft's motion. [Give brief details.] The result: Sounds produced on the aircraft 17 to 18 seconds apart would be heard by this witness ___ seconds apart. So the sounds this witnesses heard do in fact correspond to his visual observations...provided he was observing only the aircraft.

Another important witness was a passenger on US Air Flight 217. This witness reported seeing a small aircraft fly under him ten seconds before the appearance of "a small, flare-like projectile traveling in an east-northeasterly direction."

Using radar tracking of Flight 217 and the small aircraft, it was possible to calculate that he first saw the flare-like object almost exactly when TWA 800's cockpit voice recorder detected an onboard explosion. And TWA 800 is known to have been traveling in an east-northeasterly direction when it exploded. So the flare-like object he saw almost certainly was not a missile, but rather TWA 800 just after its first explosion.

A third witness was located in a boat 8.7 miles from the aircraft's initial explosion. He observed the latter stages of the disaster, describing what he thought might be a "shooting star" moving in "a downward, forty-five degree sloping arc." He then realized he was observing an aircraft which had rolled over onto its left side and seemed to be hooking northward and downward. Immediately, the right wing separated from the fuselage and a large "fire trail" erupted. This observation was accompanied by a loud "concussion" sound.

The plane then separated into two pieces --- the right wing and the remainder --- and quickly dropped about a mile to the water's surface.

Because this witness was nearly perpendicular to the aircraft's motion, his description of the aircraft's forty-five degree descent should correspond to its actual flight path...and indeed equals a flight path at this time estimated using radar and other data.

Also, knowing this witness's distance from the aircraft when it first exploded, analysts were able to calculate that the concussion sound he heard originated 42 seconds before he heard it. So asuming the sound he heard was the first explosion, the right wing separated and the "fire trail" erupted 42 seconds after the onboard recordings ended. (An intelligence community sensor detected a large heat source in the vicinity of the aircraft 43.5 seconds after these recordings ended...consistent with this witness's observations.)

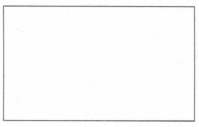
[...explain additional enigmatic witness observations]

Flight Path Reconstruction

We now have enough information to reconstruct the approximate flight path of TWA 800 from the instant its recordings ended until it hit the water. [Chronological description to follow...]

[Conclusions

CC:



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APPROVED FOR
RELEASE DATE:
19-Mar-2012

TWA 800
A Witness by Witness Account

A Review of the TWA 800 Witness Reports

28 February 1997

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(b)(3)
(b)(7)(c)(b)(6)

000375

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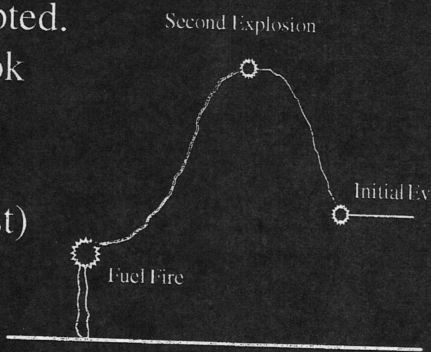
[redacted] [5]

Observations

- Observed glowing red 'flare' to his SE
- Flare ascended, reached its highest point where a bright orange fireball erupted.
- Flare rose for 10 sec and fireball took 30 sec to fall to ocean

Conclusions

- Trajectory from 91 to 89 deg az (East)
- Time frame matches total trajectory time (40 sec)
- *Red color inconsistent with other witnesses during upward leg (described as white)*
- *Need further questions to determine if total, or only end part of trajectory observed*



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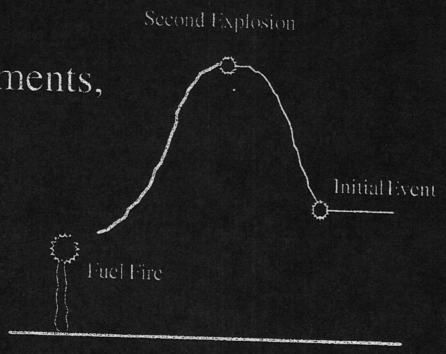
[redacted] [92]

Observations

- Saw a very large projectile trailing a very large column of smoke ascend from water into sky
- Projectile visible for only several moments, before it disappeared followed by a bright flash



Conclusions

- Due to short observation time and description of end fireball, witness observations limited to end event only

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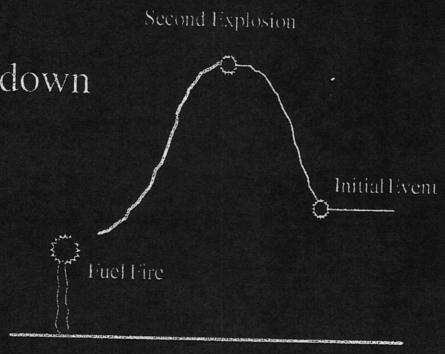
[redacted] [93]

Observations

- Heard sound similar to bottle rocket only louder
- Saw front of aircraft on fire and hears three loud explosions
- Then observed tail of plane spiraling down



Conclusions

- Due to short observation time, hearing noise as first observation, and description of end fireball, witness observations limited to end event only

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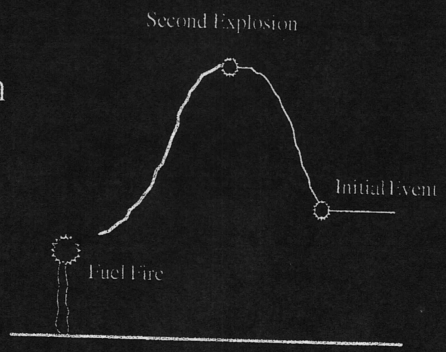
[redacted] [94]

Observations

- Observed a flare-like object shoot up into the sky from water level from



Conclusions

- Due to short observation time and vague description of events, witness observations limited to end event only

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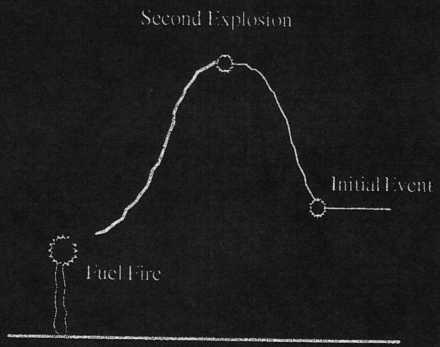
[redacted] [95]

Observations

- Observed object resembling flare which ascends, drops *straight down* while increasing in size
- After dropping, the object explodes and breaks into two pieces
- Approximately 20 sec later, hears deep rumbling for 3 to 4 sec



Conclusions

- Observes end event as descent is straight down
  - SHould see about 10 deg of azimuth motion
- Sound should take only 56 sec to reach witness

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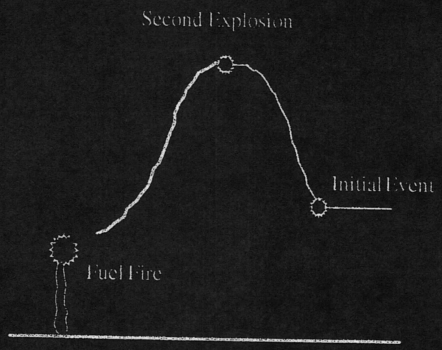
[redacted] [96]

Observations

- Saw a flare which left the surface, rise over the horizon, and explode

Conclusions

- Due to implied short observation time and description matching end fireball, witness observations limited to end event only



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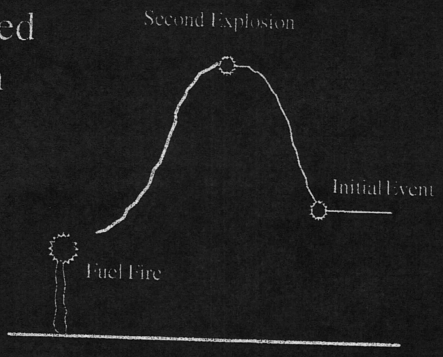
[redacted] [97]

Observations

- Saw a bright cherry red line ascend into sky in the distance
- After several moments, the line seemed to explode, and then explode again at a lower altitude



Conclusions

- Observations made from over 48 miles away
- Due to short observation time and description of end fireball, witness observations limited to end event only

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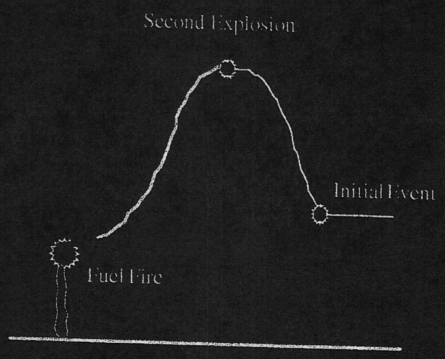
[redacted] [98]

Observations

- Observed a bright reddish-orange light going up in sky
- Streak was not straight, but appeared to zig-zag as it ascended

Conclusions

- Observations made from Sound Willford, Connecticut
- Due to short observation time and description of end fireball, witness observations limited to end event only



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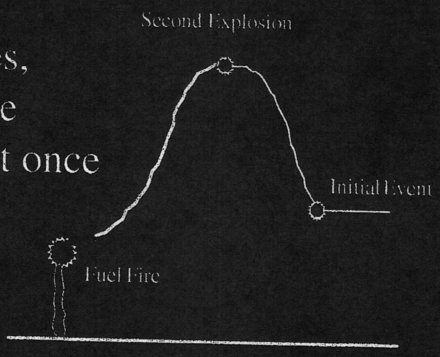
[redacted] [99]

Observations

- Observed a red flare rising up from the horizon
- At the top of the arc, saw 3 to 4 flames, the 1 to 2 sec later, observed a large cloud of orange light that flashed at once

Conclusions

- Observations made from over 42miles away
- Due to short observation time and description of end fireball, witness observations limited to end event only



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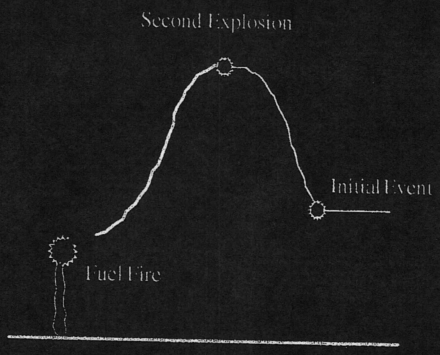
[redacted] [100]

Observations

- Observed a flare or fireworks rising in the South
- Object rose almost straight up, with a slight right arc
- The orange dot rapidly climbed and then appeared to make a brilliant half dome-appearing flash



Conclusions

- Observations made from over 44 miles away
- Due to short observation time and description of end fireball, witness observations limited to end event only

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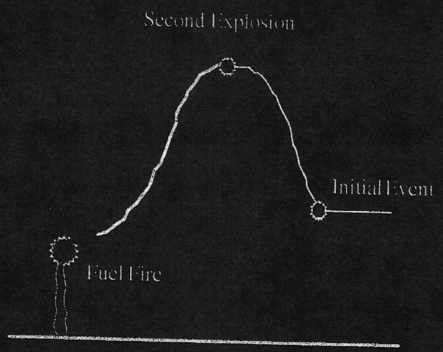
[redacted] [101]

Observations

- Witness was with [redacted] [100] and provided a similar description



Conclusions

- Observations made from over 44 miles away
- Due to short observation time and description of end fireball, witness observations limited to end event only

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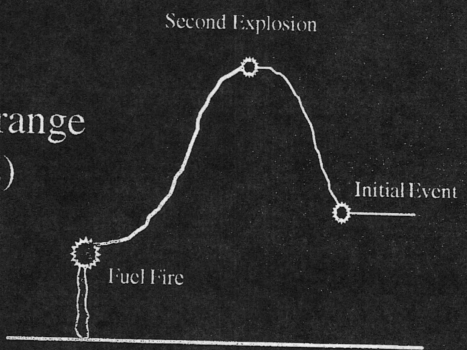
000386

[redacted] [6]

Observations

- Vague recollection of fine, pencil thin light extending upward in North, NW direction, then began to arc, becoming brilliant white light, then in a split-second, became bright red-orange ball of fire (breaking into 2 pieces)
- Total observations time 2-5 seconds



Conclusions

- Only seeing end event due to short observation time and seeing fireball

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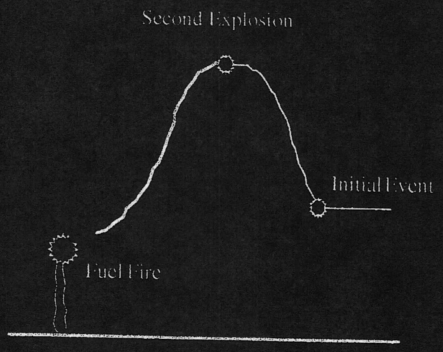
[redacted] [102]

Observations

- Observed flare rising from about 30 deg off the horizon to an apex of about 45 deg off the horizon
- Object then appeared to drop down forming an expanding cone of orange light



Conclusions

- Observations made from over 42 miles away
- Due to short observation time, color and description of end fireball, witness observations limited to end event only

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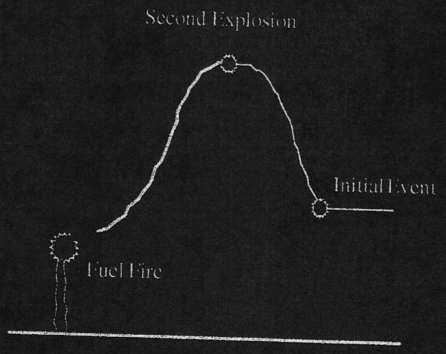
[redacted] [103]

Observations

- Observed a brilliant red flare which rose from just above the horizon into the sky in a straight line
- When flare reached its apex, it exploded into a brilliant red ball



Conclusions

- Observations made from over 46 miles away
- Due to short observation time and description of end fireball, witness observations limited to end event only

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000389

C05782770

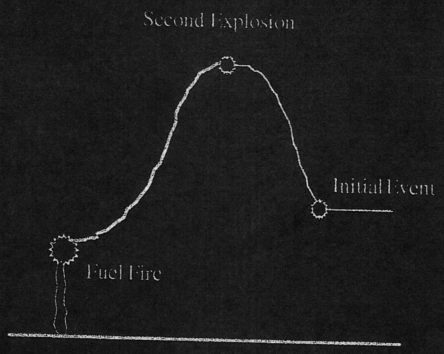
[redacted] [104]

Observations

- Park policeman who responded to distress call

Conclusions

- Did not observe any of the event



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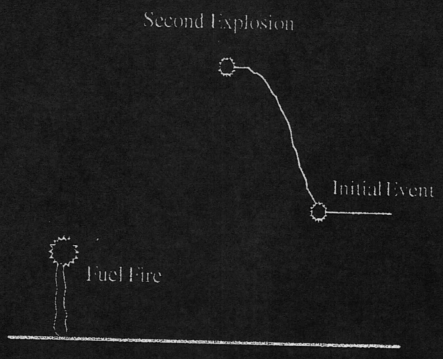
[redacted] [105]

Observations

- Watched flare for about 10 sec
- A couple of seconds later, saw a large explosion, and from size knew it was not a flare



Conclusions

- Description at end matches a fuel fire like event
- Observed events only 10 sec prior to end event fire ball
- Did not report ascending object

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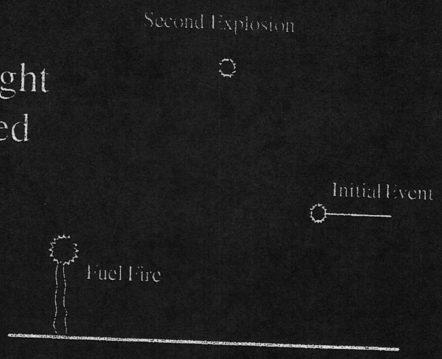
000391

C05782770

[redacted] [106]

Observations

- On-board US AIR Flt 217
- Observed aircraft going East
- Watched aircraft for 30 to 40 sec
- It banked to left, then proceeded straight
- As he observed it, the aircraft exploded and a large orange fireball appeared from the front of plane
- Plane appeared to stop in mid-air
- Then observed more explosions



Conclusions

- Observations consistent with aircraft trajectory
- *Did not view any missile*

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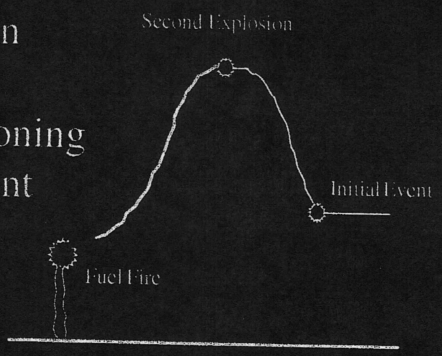
000392

C05782770

[redacted] [107]

Observations

- Turned around and saw a white flare with grey smoke trail moving from a SW direction to a more W direction
- It ascended on a diagonal
- Since she thought it was a non-functioning roman candle she quit viewing event



Conclusions

- Due to short observation time and description of visible smoke trail, witness observations limited to end event only

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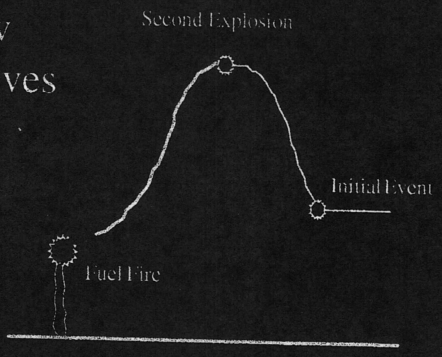
C05782770

[redacted] [108]

Observations

- Took notice of plane due to sun glint but looked away
- About 30 sec later, looked up and saw a large bright light which she believes was aircraft observed earlier



Conclusions

- Definitely saw end event
- Initial observation could have been sun glint or the aircraft in its initial ascent

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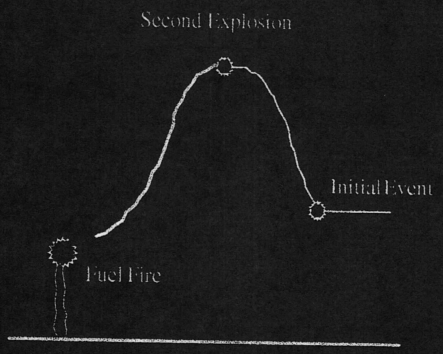
000394

C05782770

[redacted] [109]

Observations

- Former EOD in Marine Corp
- Noticed explosion in sky with initial colors of white, yellow, and orange which reminded him of napalm
- Then heard 2 to 3 explosions and the sound of thunder
- Afterwards, saw black smoke and flames fall from the area of the explosion



Conclusions

- Sound arrives at location in 49.5 sec
- Observations of end event

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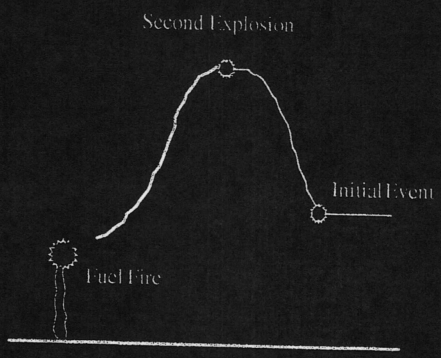
000395

C05782770

[redacted] [110]

Observations

- Saw a wispy trail that went straight up which appeared as a flare
- Followed flare for 5 sec, when flare turned into an orange burst
- Then saw black smoke, but did not see anything fall to ocean
- In same boat as [redacted] [49] and [redacted] [50]



Conclusions

- Due to short observation time (5 sec) and description of orange burst and black smoke, witness observations limited to end event only

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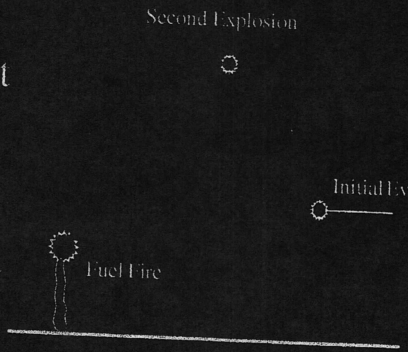
000396

C05782770

[111]

Observations

- Observed reddish/orange flare rise in sky, followed by a white vapor trail moving on a slight from right to left
- Witness then moved location, without viewing object
- From here, viewed explosion and then two large balls of fire and smaller pieces of fire fall out of sky
- With [redacted] [121]



Conclusions

- Could have observed initial ascent, depending on length of time looking away, but not middle of trajectory
- Last observations of end event

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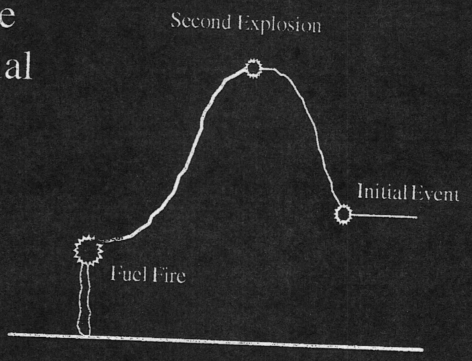
C05782770

[redacted] [7]

Observations

- Observed plane flying West to East
- Observed smaller plane flying from NE
- Saw smaller plane for 3-4 sec before hearing 'crackling sound' and aerial bomb fireworks
- Then heard series of sounds when two planes passed each other



Conclusions

- Hard to pinpoint any correlation (no vertical motion
- Sounds would arrive at witness location at same time as final fireball occurrence

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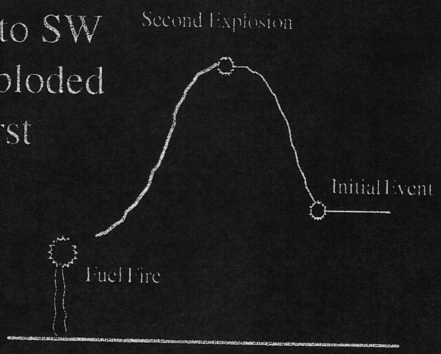
000398

C05782770

[redacted] & [redacted] [112 & 113]

Observations

- Observed a 'flare' rising in sky
- Flare was already in mid-sky and had orange tail traveling South to SW
- Flare rose, descended a little, then exploded
- Explosion was 10 sec after witness first saw flare



Conclusions

- Observed events just prior to fireball event
  - 10 sec captures to short of time for second explosion
  - Color matches fuel fire

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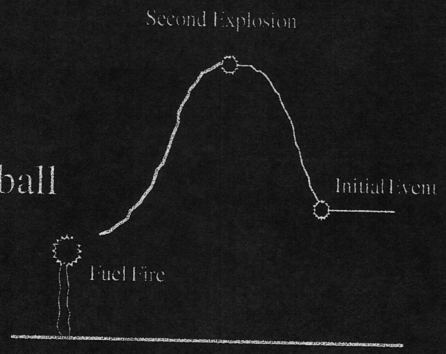
000399

C05782770

[redacted] [114-116]

Observations

- Observed a large red flamed object or fireball which separated into two parts
- Viewed entire event lasting just a few seconds
- Two large explosions shook condo within a few seconds of seeing fireball
- Finally saw a smoke column where explosion occurred



Conclusions

- Observing end events
- Sound from initial explosion should take 48 seconds to reach witnesses

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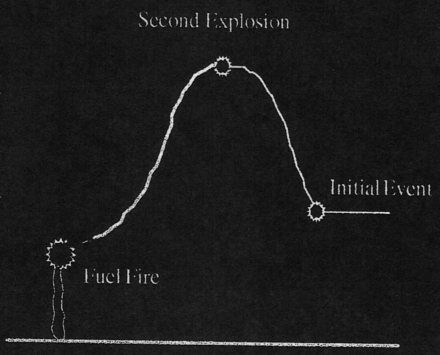
000400

[redacted] [117]

Observations

- Observed a yellow-white light, all glowing, ascending in a matter of seconds and arching right to left
- Object then exploded like a big bright yellowy-orange light
- Observed one piece fall straight down
- Object moved in arch, like part of a "U"



Conclusions

- Due to short observation time and description of color and object falling, witness observations limited to end event only

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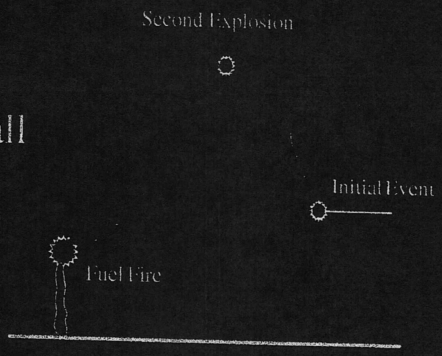
C05782770

[redacted] [118]

Observations

- Saw a red flare arching in the sky, but did not see where it originated from
- Flare arched in sky, and then came straight down
- Suddenly, red flare burst into large ball of flames
- Witness heard second explosion but not first



Conclusions

- Hearing 'second explosion' the initial event sound
- Since there is no time from first observation to end, witness could have observed initial ascent

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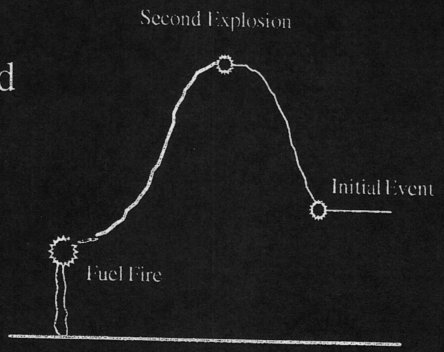
000402

C05782770

[redacted] [119]

Observations

- Heard someone yell "look" at turned
- Saw a red flare arching in sky and descending downward
- As it descended, he heard a thump and there was a sudden burst of flames
- The large body of flames split into two smaller masses



Conclusions

- Sound matches end event
- Observations consistent with end event fireball

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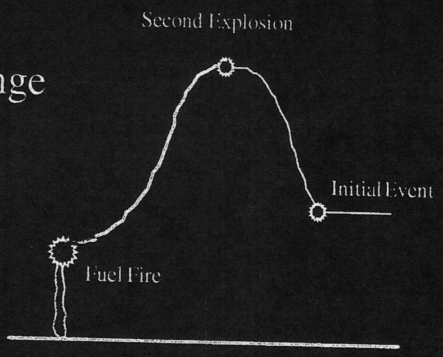
000403

C05782770

[redacted] [120]

Observations

- Observed white colored object travel up in sky moving fast and leaving a trail
- Object appeared to come from water
- Seconds later, saw a big, reddish-orange fireball, splitting into two fireballs
- After second fireball fell, heard a thunderous noise for about 5 sec



Conclusions

- Sound should arrive after end event takes place
- Short viewing time and observation consistent with fireball, limits witness to only end event

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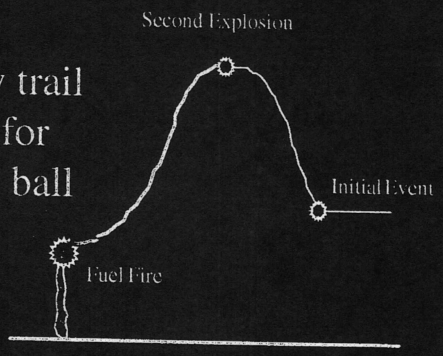
000404

C05782770

[redacted] [121]

Observations

- Swimming with [redacted] [111]
- In SW, saw an orange/pink flare rise in S-SE direction from below tree line
- Flare was little ball with a bluish/gray trail
- Flare rose for 5 sec, arced downward for 1 sec, then exploded into an orange ball
- Orange ball went down splitting into 6 pieces
- Later heard loud rolling thunder



Conclusions

- Due to short viewing time and correlation with fire ball, witness only observing end events

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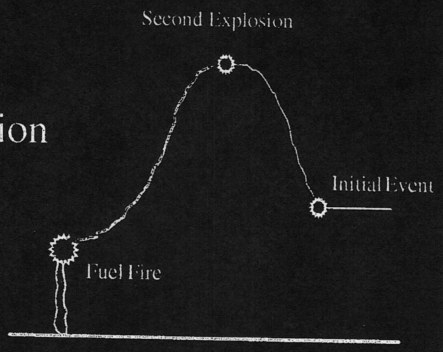
C05782770

[redacted] [122]

Observations

- Noticed something ascending which looked like white, yellow fire, trailed by black smoke
- Ascended for 10 sec in straight line and arched slightly at top
- Then observed a yellow white explosion
- The object then fell for about two minutes



Conclusions

- Extended time falling could be event after second event
- Therefore, ascension could be after initial event

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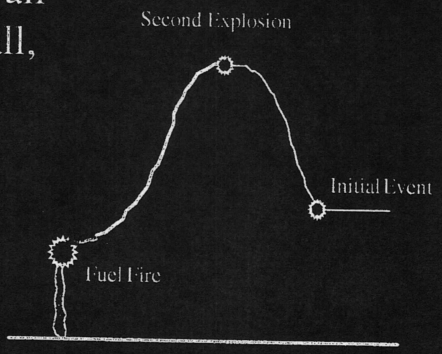
000406

C05782770

[redacted] [123]

Observations

- Observed what appeared to be bright headlight of plane
- Saw light explode explode into a fireball of solid mass, the size of a basketball, which began to fall and break into two pieces



Conclusions

- Due to short observation time and description of fireball, witness observations limited to end event only

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000407

C05782770

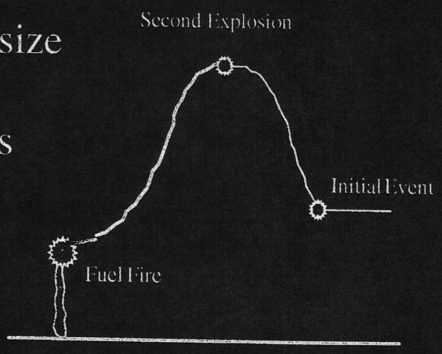
[redacted] [124]

Observations

- Observed a fireball of solid mass the size of a basketball which began to fall and break into two solid fire masses

Conclusions

- Due to short observation time and description of fireball, witness observations limited to end event only



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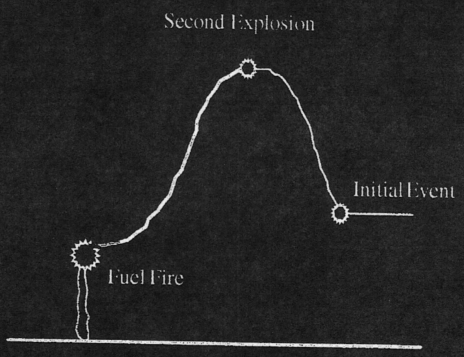
[redacted] [8]

Observations

- Observed fiery orange 'fireworks or a flare' going up from sky
- Then observed a bright orange explosion

Conclusions

- Color consistent with final explosion
- *No time information for better fix on events*

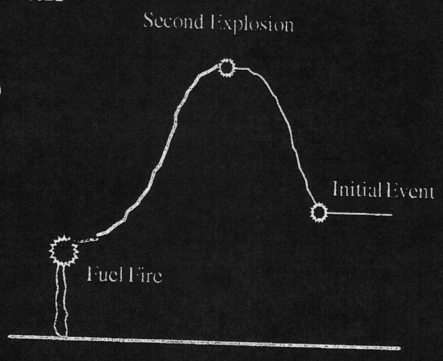


For Official Use Only

[redacted] [125]

Observations

- Observed white flare-like object ascending in sky for 2 to 3 sec before it terminated in an orange explosion
- As explosion descended, it broke into two separate pieces



Conclusions

- Due to short observation time and description of fireball, witness observations limited to end event only

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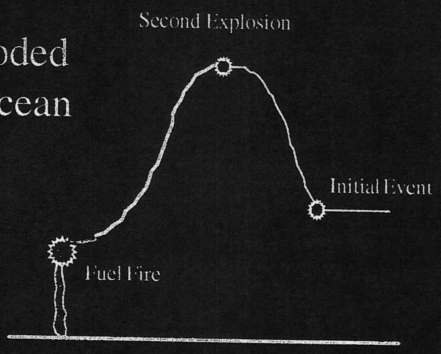
C05782770

[redacted] [126]

Observations

- Observed a red/orange fire in the sky
- Several seconds later, the flame exploded and dropped straight down to the ocean



Conclusions

- Due to short observation time and description of fireball, witness observations limited to end event only

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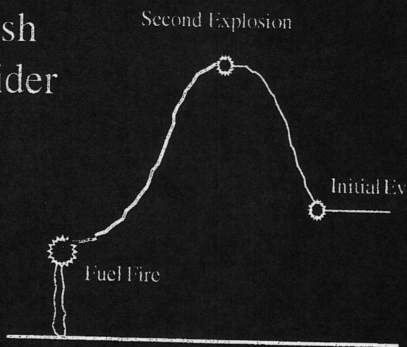
000411

[redacted] [127]

Observations

- Observed a flare with orange head for 8 to 10 sec
- Flare then turned in to bright yellowish orange glow which turned into a wider flame, eventually descending in two pieces
- With [redacted] [36] in boat



Conclusions

- Due to short observation time (little more than 10 sec) and description of fireball and separating pieces, witness observations limited to end event only

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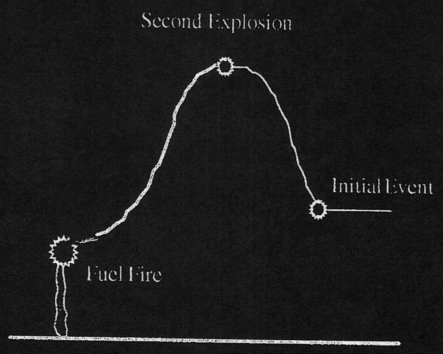
C05782770

[redacted] [128]

Observations

- Observed a red nebulous image with an elongated shape and went from drifting to falling in the sky
- 5 or 6 seconds later heard a boom



Conclusions

- Due to short observation time and description of fireball, witness observations limited to end event only

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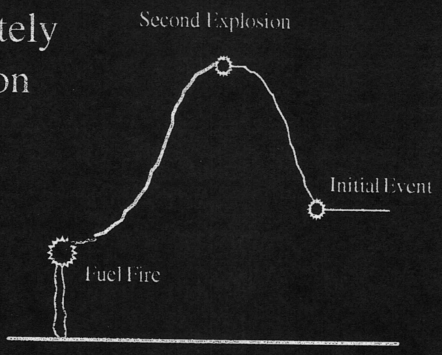
000413

[redacted] [129]

Observations

- Observed a reddish-white flare ascending straight up in the 1 o'clock angle from perpendicular
- Faced away but was directed immediately back where witness saw an explosion described as 2 house sized diameters in size
- One minute after explosion, heard a thunder-like noise



Conclusions

- Due to short observation time and description of fireball, witness observations limited to end event only

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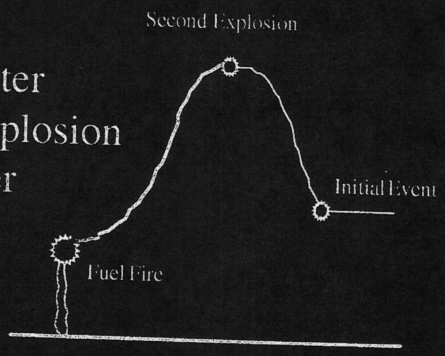
C05782770

[redacted] [130]

Observations

- Saw an orange ball traveling from NW to SE
- Ball traveled laterally across sky for about 10 seconds
- The ball exploded and fell toward water
- Halfway down, observed a second explosion with flame cascading down to water



Conclusions

- Observing end event
- Only saw 10 sec before explosion

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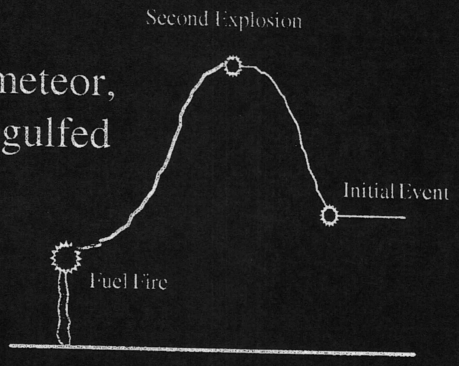
000415

[redacted] [131]

Observations

- Observed what believed to be meteor flare, round in shape and red, which moved upward and arched in NE direction
- 2 to 3 sec later, observed lower than meteor, two large, yellow and red pieces engulfed in flames falling
- After two pieces fell, saw second meteor at same location as first



Conclusions

- Due to short observation time and description of red flame and two pieces falling, witness observations limited to end event only

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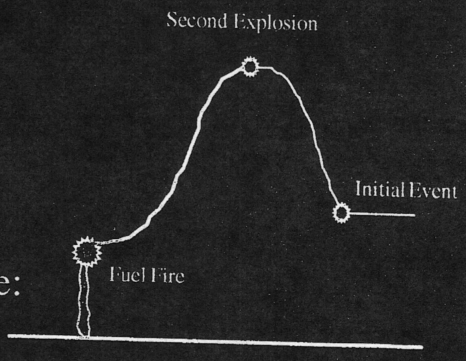
[redacted] [9]

Observations

- Observed red 'flare' rising straight up in air
- Flare then arced over before losing sight of it
- Did not see any explosions



Conclusions

- Most likely seeing explosion because:
  - Largest visible event and witness observed no explosion
  - Color (red) consistent with fuel fire

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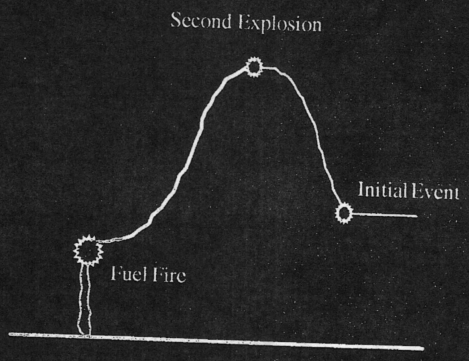
[redacted] and [redacted] [10 &11]

Observations

- Observed ball of orange fire arcing upward with a white smoke trail
- Ten seconds later saw a large reddish-orange fireball which fell at 60 deg angle

Conclusions

- Observing events just prior to fireball
- Observation of reddish-orange fireball consistent with fuel fire



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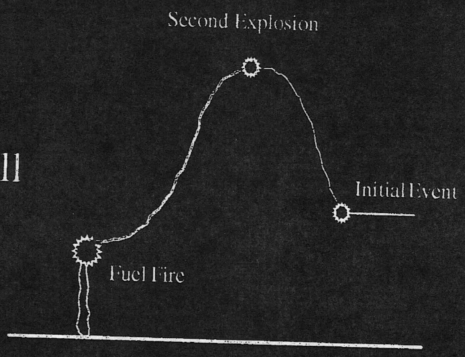
C05782770

[redacted] [12]

Observations

- Observed a yellow-orange 'flare' shoot straight up in sky for 15 sec
- Then flare burst into yellow flash which remained illuminated and descending
- Then burst into 20 times size fireball
- Heard three sounds after fireball
- Estimated entire event at 30 sec



Conclusions

- Observed entire event
- Observed second explosion and heard three sounds
- *Flare during ascent was not white as most observations*

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000419

C05782770

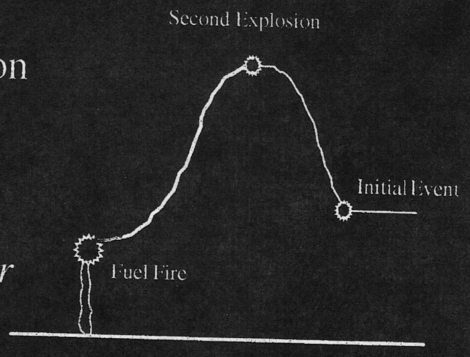
[redacted] [13]

Observations

- Observed 'flare' going straight up in the sky
- Traveled on Southerly course and then hooked SW
- Then saw large red/orange explosion

Conclusions

- Observed end fireball
- *SW direction inconsistent with radar plots*
- Need time information to fix events



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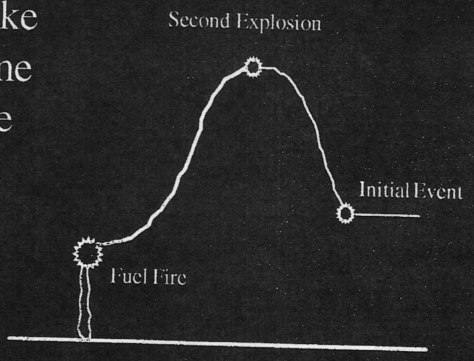
C05782770

[redacted] [14]

Observations

- Described white smoke trail
- Observed three explosions
  - large red fireball with white smoke
  - 3 to 4 seconds later a yellow flame
  - finally, a fire with pieces of plane



Conclusions

- Observed final fireball
- *Impossible to specify what white smoke trail is as no information on time, or shape available*
- However, witness saw only a single trail which turned into fireball

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000421

C05782770

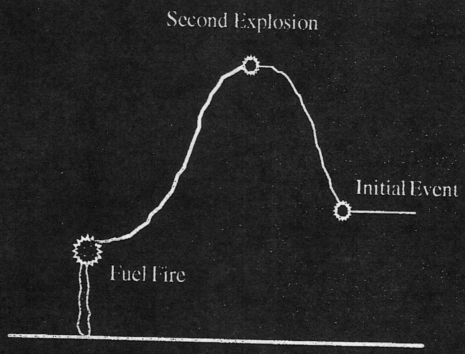
[redacted] [15]

Observations

- Observed a white smoke trail ascending through the sky culminating in a bright orange fireball

Conclusions

- Observed final fireball
- *Impossible to specify what white smoke trail is as no information on time, or shape available*
- However, witness saw only a single trail which turned into fireball



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000422

C05782770

TWA Witness Groups

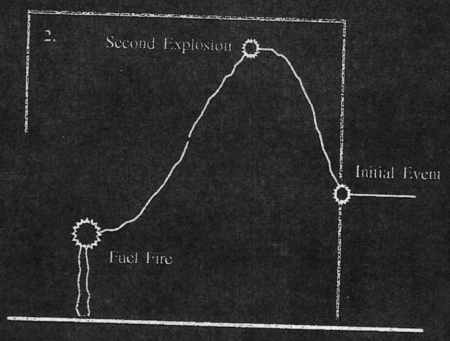
Group

1. Observes only end event

2. Observations begin near initial event

3. Observations consistent with Group 1 or 2, but description includes "object hitting aircraft"

4. Observations inconclusive



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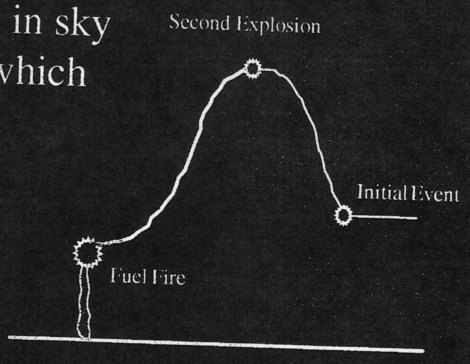
[16]

Observations

- Observed light heading straight up in sky
- Light was small red ball halfway up in sky
- Red ball took 4 seconds to impact, which started fires on ocean surface



Conclusions

- Observed final fireball
  - Red color consistent with fuel fire
  - Did not observe any descent

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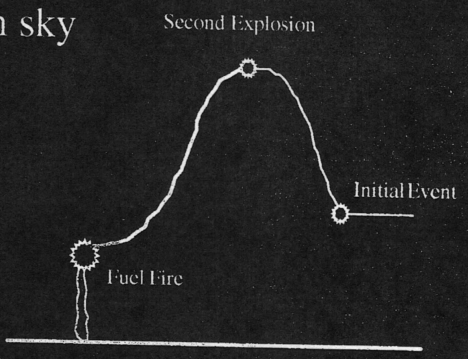
C05782770

[redacted] [17]

Observations

- Suddenly observed trail of fire (bright orange and red) going up in sky
- Flare broke off and continued in sky
- Did not observe anything come down to ground



Conclusions

- Observed final fireball only
  - Red color consistent with fuel fire
  - Did not observe any descent phase
  - Only saw one event with red color

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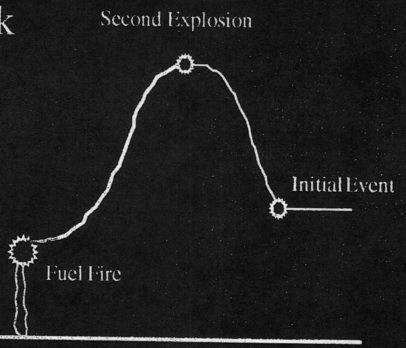
000425

[redacted] [18]

Observations

- Observed very large orange glowing ball
- Seconds later, saw a sharp, yellow streak rising about it
- Heard no sound and entire event took 3 to 4 seconds



Conclusions

- Observed final fireball
  - Large yellow ball matches fuel fire
  - Did not observe any large motion
  - 3 to 4 seconds short time event

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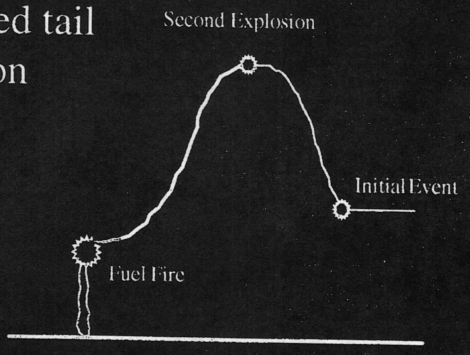
[redacted] [19]

Observations

- Observed 'parachute flare' that looked like comet, with red fire ball and red tail
- Seconds later saw one huge explosion
- Entire time frame lasted no more than 10 to 15 seconds



Conclusions

- Observed final fireball
  - Red ball and tail matches time close to fireball
  - Quickly observed huge explosion
  - 10 to 15 seconds too short to see initial event

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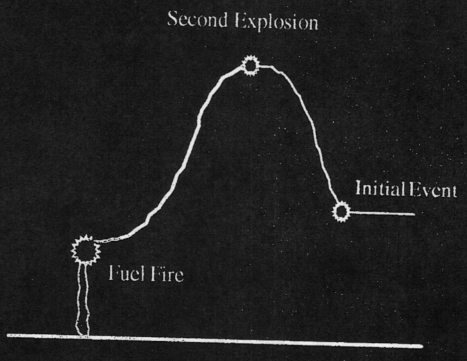
[redacted] [20]

Observations

- Observed an orange-colored arc moving upward
- Arc appeared to bend to left a little
- Finally, arc dissipated into a 'little round glow' for 2-3 seconds then ended in large explosion



Conclusions

- Observed could be only final event
- However, lack of timing does not allow fixing of ascent phase, which could be after initial event

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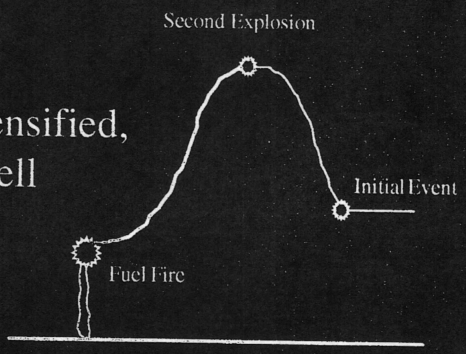
[redacted] [21]

Observations
- Noticed bright light in sky
- Noted column of smoke went from bright light down to water
- A few seconds later, bright light intensified, and broke into two fire balls as it fell



Conclusions
- Observed final fireball event
  - Only observed single event with large fireball
  - Two fireballs consistent with other witnesses

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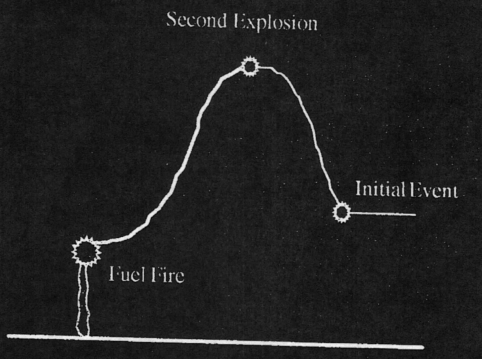
[redacted] [22]

Observations

- Observed large commercial plane flying West to East
- Aircraft had unusual amount of black smoke coming from wing
- Aircraft disappeared behind trees
- Witness heard sound and saw red flash through trees



Conclusions

- Sound too soon to coincide with blast
- Entire event low on horizon < 12 deg
- *Better fix on time of observations to fix starting point*

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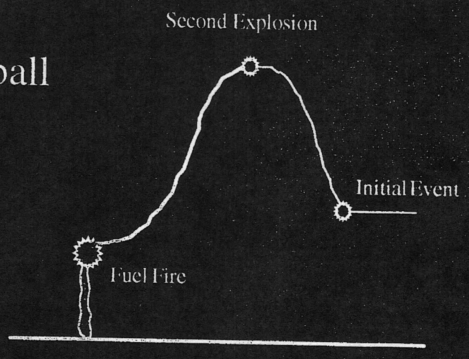
[redacted] [23]

Observations
- Observations from private plane
- Observed 'bright stripe of light' a few seconds before viewing fireball

Conclusions
- Observed final fireball event
  - Only saw one event (the end)
  - Few seconds of observation before fireball



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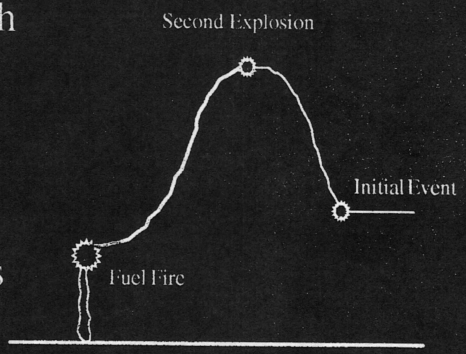
[redacted] [24]

Observations

- Observed white ball arcing from right to left
- Arc declined from its initial point
- Ball then exploded into large whitish grey ball of smoke, followed by wide orange/reddish flame
- Shortly after explosion, felt two rumblings were felt
- Entire event occurred in 10 seconds



Conclusions

- Did not observe ascent motion
- Described end fireball
- 10 seconds too short to see initial event
- Sound observation consistent with modeling

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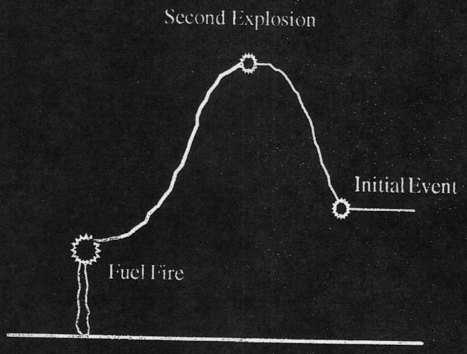
[redacted] [25]

Observations

- Saw red lights blinking on side of aircraft
- Saw an instant burst and flames start coming down from from sky in mushroom shape
- Two seconds after first explosion, a second burst of flames traveled back up toward the first burst



Conclusions

- Observed final fireball event
  - Red color consistent with fuel fire
  - Mushroom shape fire best matches fireball event

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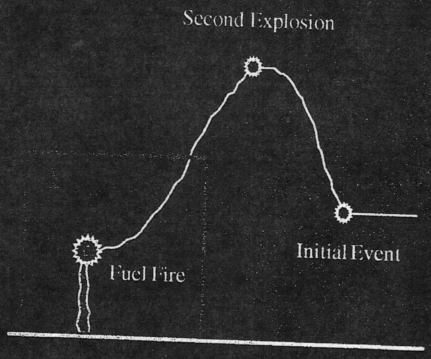
Group 1: Observe Only End Event (104)

Why?...

- Correlation between sights & sounds
- Observed the left wing detach
- Observed 'huge' red-orange fireball



Since witnesses see only end, cannot have seen missile

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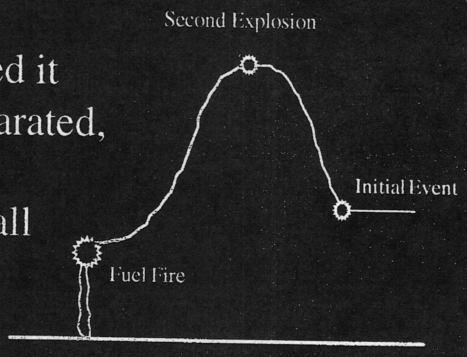
[redacted] [26]

Observations

- Observed a yellow 'shooting star', moving downward at a 45 deg slope, taking a Northward turn
- Identified object as aircraft, then noted it rolled to left and the right wing separated, creating a large fire trail
- Observed aircraft 25 sec before fireball

Conclusions

- Gave *very detailed* description of aircraft's movement just prior and during fireball event
- Color and downward motion indicate observations after second explosion



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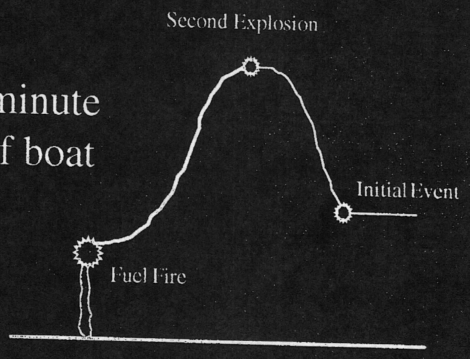
[27]

Observations

- Observed aircraft traveling to East
- Aircraft was glowing red and orange to rear of its nose to tail
- Watched aircraft for about one-half minute before it flew behind wheelhouse of boat



Conclusions

- No positive correlation to TWA800
- Observed aircraft prior to event
- *Color may be result of sun glint*

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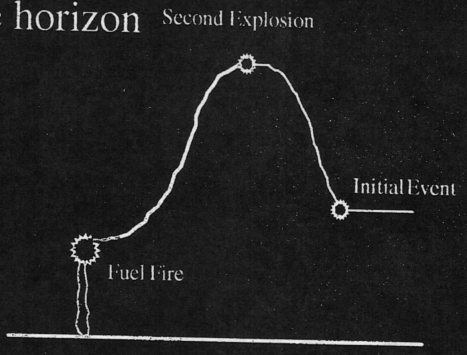
[redacted] [28]

Observations

- Observed bright yellow flare, moving downward, slightly left to right
- Flare moved out of his view over the horizon



Conclusions

- Observed final fireball event
  - Observed only single event
  - Yellow color consistent with fuel fire
  - Flare showed little movement

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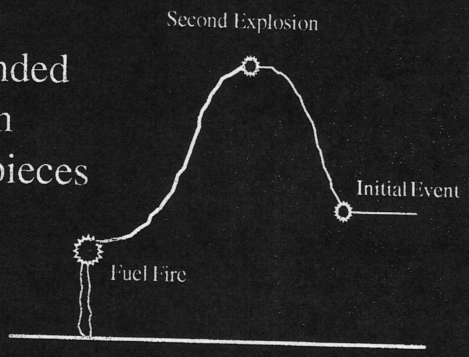
[redacted] [29]

Observations

- Observed a huge 'fireball' grow from a black, silvery dot in sky
- The fireball was red/orange, which appeared to be momentarily suspended and then began to fall toward ocean
- Observed fireball breaking into two pieces



Conclusions

- Observed final fireball event
  - Did not report much movement with 'black, silvery object'
  - Red/orange color consistent with fuel fire

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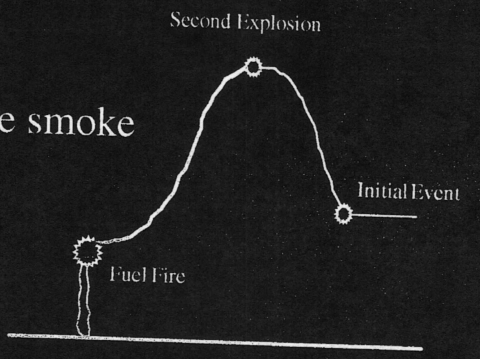
[redacted] [30]

Observations

- Saw a red glow in the SW, going straight up for about 3 sec
- As red glow reached highest point, a red flame shot up
- After glow died, only black and white smoke
- Heard two big booms 25 sec after glow went out



Conclusions

- Observed final fireball event
  - Short duration of event
  - Red glow consistent with fuel fire
- Takes 82 sec for sound from initial event to reach witness

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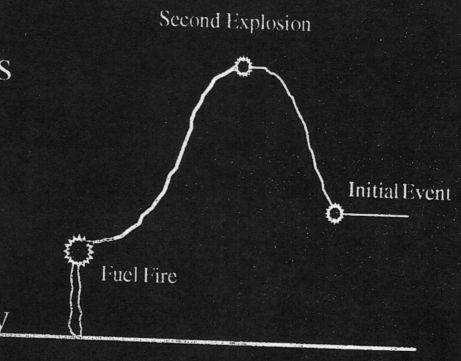
000439

[redacted] [31]

Observations

- Witness looked into sky and saw an explosion
- Afterward, observed bright red and orange objects falling from sky
- Took about 15-20 seconds for objects to fall below horizon



Conclusions

- Observed final fireball event
  - Observed objects falling from sky
  - Little or no lateral movement
  - Red glow consistent with fuel fire

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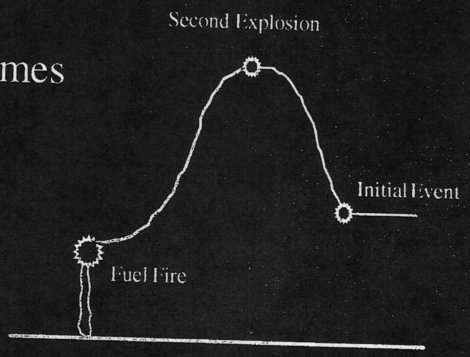
[redacted] [32]

Observations

- Looked up an saw a reddish orange glowing ball, traveling right to left
- Tracked ball for 15-20 sec
- Then ball exploded and burst into flames while breaking into several pieces
- Heard and felt two explosions



Conclusions

- Observed events after second explosion, 15 to 20 sec before fireball
- Observed breakup of aircraft during fireball event

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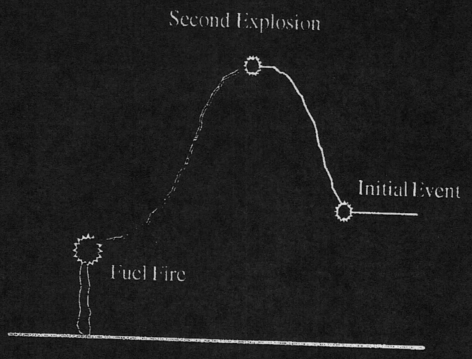
[redacted] [33]

Observations

- Witness noticed 'fireworks' to SE, which started halfway up in sky
- A ball of flames burst from where she saw the rocket
- Observed a smaller ball of flame



Conclusions

- *Hard to pinpoint first observation with no timing or motion observations*
- Only saw one object which traces trajectory to end fireball

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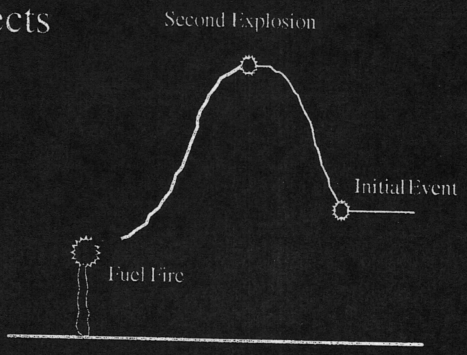
000442

[34]

Observations

- Observed red orange 'rocket' rise from SE
- Rocket followed arched path and exploded into a fireball to left and black objects to the right



Conclusions

- *Hard to pinpoint first observation with no timing or path observations*
- Since observed rocket goes to final fireball event, most likely seeing only end event

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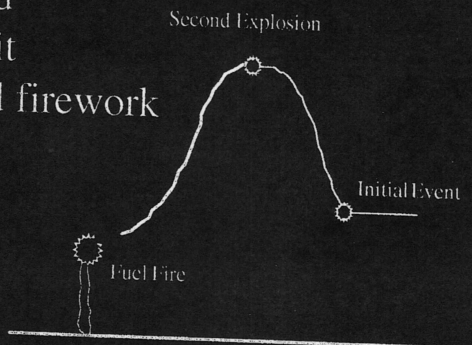
[redacted] [35]

Observations

- Saw an orange 'firework' with a tail in the air SW of him
- The firework traveled up, then arched down before witness lost sight of it
- Seconds later, saw a second and third firework in sky with same aching pattern
- About 30 sec later, heard a rumbling



Conclusions

- Most likely only seeing end event
  - Short duration of observations before fireball
  - Hearing sound time consistent with fireball observation
- *Second and third firework when aircraft wing separates?*

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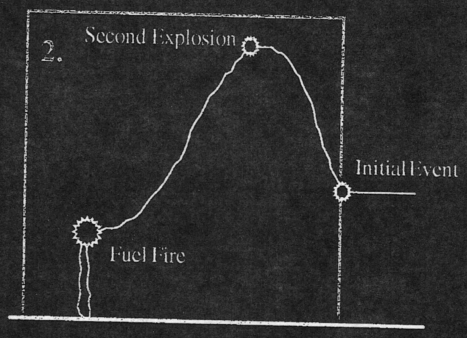
000444

Group 2: Observations Begin Near Initial Event (16)

- See only single object...hence could not see missile and aircraft
- See object ascend and descend...most see end fireball



Observations correlate with TWA 800 trajectory

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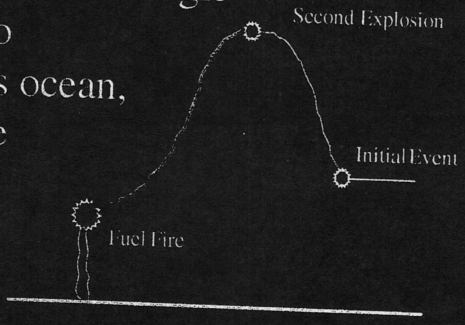
[redacted] [36]

Observations

- Observed 'flare' ascending
  4 to 6 miles East of position
- Flare was orange ball traveling at 10 o'clock angle
- About one minute later, observed two
  large sections descending towards ocean,
  one in flames and one with smoke



Conclusions

- Time observations (about 1 min)
  correlate with initial event
- Orange ball during ascent does not
  correlate with most witness' observations of white
- *Two sections wing and aircraft body?*

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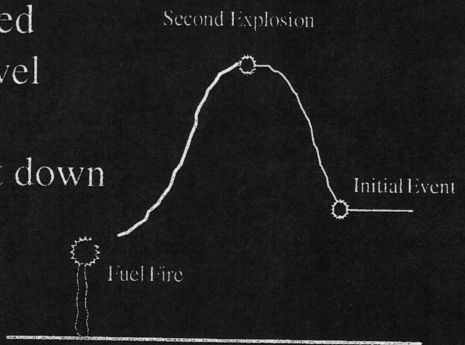
C05782770

[redacted] [37]

Observations

- Husband pointed out object
- Observed red object going up in sky
- As object went up, saw whitish colored object fall of the left side and travel downward in arch shape
- The flare object then traveled straight down
- Whole incident lasted a few seconds



Conclusions

- Likely seeing events around fireball
  - Red color consistent with fuel fire
  - Short time duration and having event pointed out by husband
  - *Second object separating wing and aircraft body?*

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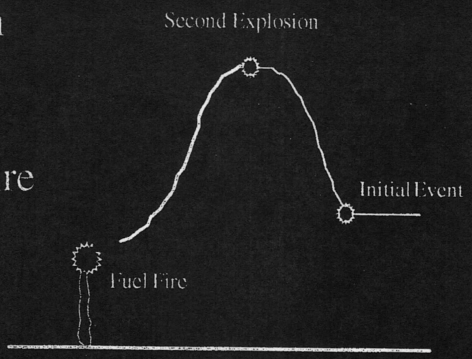
[redacted] [38]

Observations

- While looking to SW, saw 'end part' of something going up in air
- Observed smoky orange streak which seemed to travel East to West
- Streak lasted 1 or 2 sec when it burst into very large orange-red round fire



Conclusions

- Timing (1 to 2 sec before fireball) indicates only saw end event
- Color consistent with fuel fire
- Entire event would have occurred over 2 deg of azimuth

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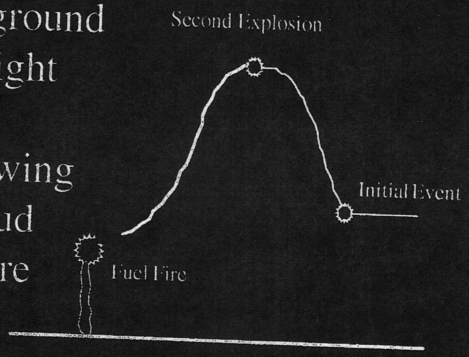
[redacted] [39]

Observations

- Observed aircraft climbing in sky flying right to left
- Observed 'red streak' moving from ground at 45 deg angle, which went past right side and above of aircraft before arching back toward aircraft right wing
- When trail hit aircraft wing, heard loud sharp noise, followed by 1 or 2 more
- Observed front of plane separate from the back and burning debris falling from aircraft



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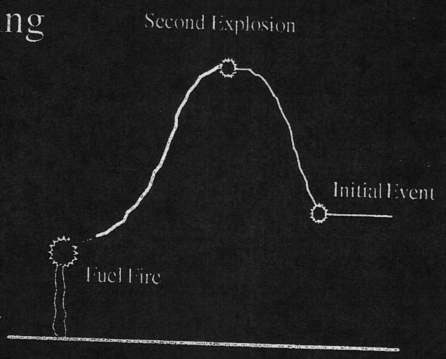
[39]

Conclusions

- Seeing only end event
  - Saw red streak
  - Front of plane just the wing separating
  - Should hear sound about same time as wing separates (45 sec)
- *Observed A Missile?*
  - Observes two objects
    - However, red streak does not follow realistic missile trajectory
  - Sees red object hit aircraft
    - *Actually separating pieces?*
  - Time correlation fixes observations to end event



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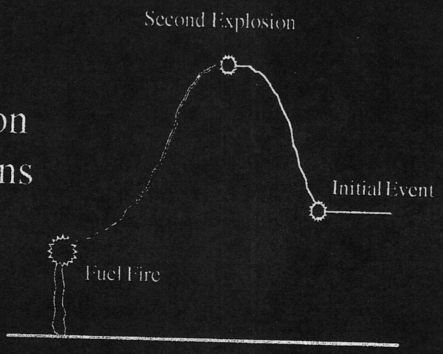
[redacted] [40]

Observations

- While looking to South, observed red-yellowish 'flare-type' object arcing upward in sky followed by larger reddish explosion
- Saw burning object fall out of explosion and separate into two burning sections



Conclusions

- Red-yellow color consistent with end event
- Two burning sections wing and aircraft body
- *Total time of observations?*

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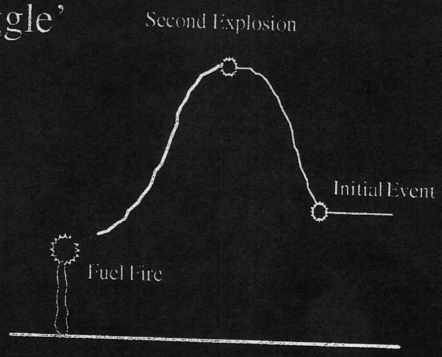
[redacted] [41]

Observations

- Observed bright orange or yellow 'flare' appear in the sky
- Flare traveled straight up with no 'wiggle'
- Object was in air few seconds, when witness looked away
- Next observation was of flare on its way down



Conclusions

- Most likely end event only, depending on time witness 'looked away'
- Final observations are of final event with flare on way down

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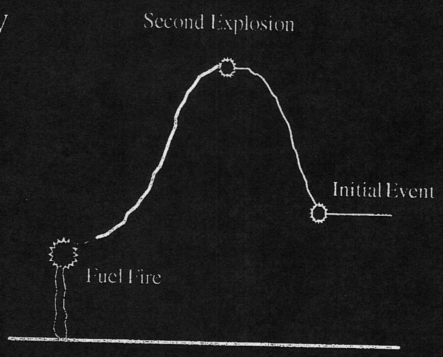
[redacted] [42]

Observations

- Observed a reddish/orange object projecting in an upward southern position
- Maintained view of object until he saw an explosion in air
- After explosion, saw two large objects falling from sky



Conclusions

- Observing events around fireball
  - No lateral motion (should see 11 deg azimuth change)
  - Color consistent with fuel fire
- *Time information could better fix initial observation*

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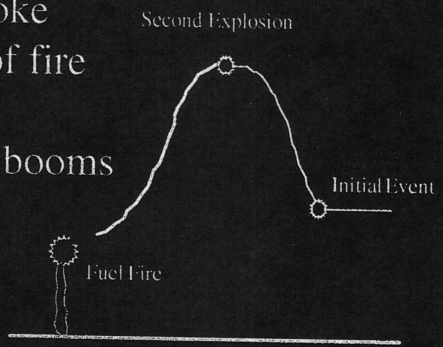
[redacted] [43]

Observations

- Noticed distinct line of black smoke rise from water
- A sec later, noticed cloud of white smoke followed by big glowing red circle of fire rise up further
- Event lasted 2 sec, followed by 2 loud booms



Conclusions

- Seeing events close to fireball
  - No lateral movement (should see 16 deg azimuth change)
  - Observations consistent with explosion on horizon
  - Color consistent with fuel fire

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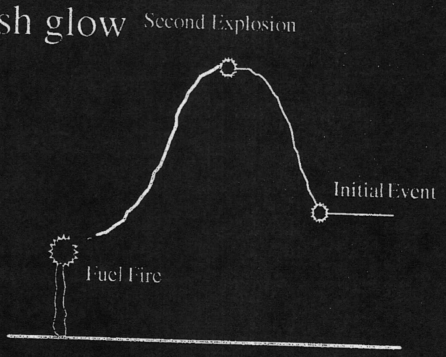
[redacted] [44]

Observations

- Noticed 'flare' ascending in the SE direction
- Flare was like a firework with yellowish glow
- Followed flare for 10-15 sec and then saw explosion



Conclusions

- Saw events after second explosion
- Flare traveled 10-15 sec before fireball
- Yellow color consistent with later flight
- *Does not explain extended ascending phase*

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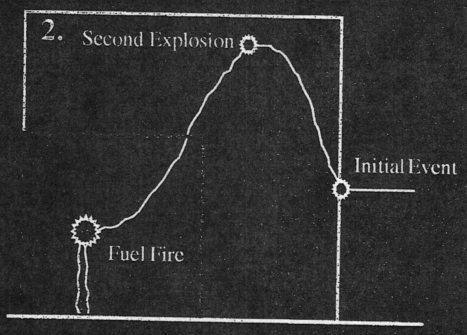
Group 3: "Object Hits Aircraft" (8)

Seven (7) are in Group 1 and could *not* have seen missile strike aircraft

One (1) is in Group 2

- Most likely only observing the aircraft ascend
- Need to re-interview witnesses



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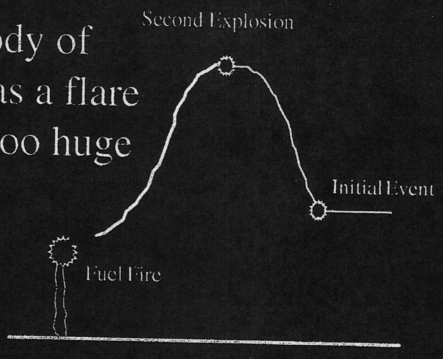
[redacted] [45]

Observations

- Piloting twin engine aircraft
- Observed column of flame
- Due to shape and movement of the body of flame, witness initially though it was a flare but soon realized that the size was too huge



Conclusions

- Observations only of fireball
- *Makes some very detailed observations on size, shape, and movement of fireball*

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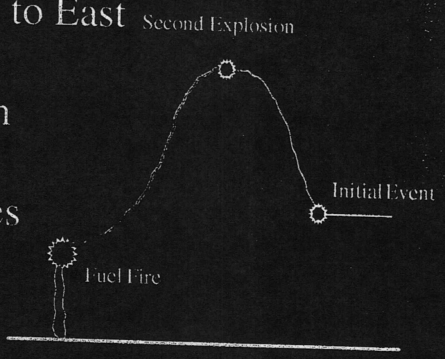
[46]

Observations

- Noticed a 'parachute flare' in SW direction about 40 deg above horizon
- Flare was bluish/red and moving West to East
- After 20 sec, started a curved descent
- After 10 sec of descent, flare opened in bottle shape that was red in color
- This shape extended out into two pieces



Conclusions

- Seeing entire event but only one object
- Two objects at end wing and aircraft body
- *Bluish/red color during ascent unusual*

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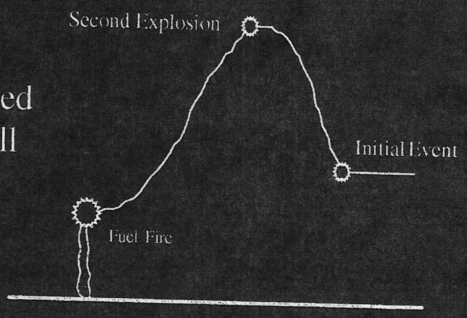
Remaining Witness - [redacted] [47]

Observations

- Observed red object ascending for 30 sec from *East to West*
- As object reached zenith, it arced over, traveled horizontally for 10 sec, followed by a small explosion and 2 tremendous explosions
- Finally, saw two objects fall toward horizon



Conclusions

- Likely saw most of event due to extended observation time
- Observed end event with explosion and two falling objects
- Observations consistent with aircraft hypothesis *except for East to West motion*

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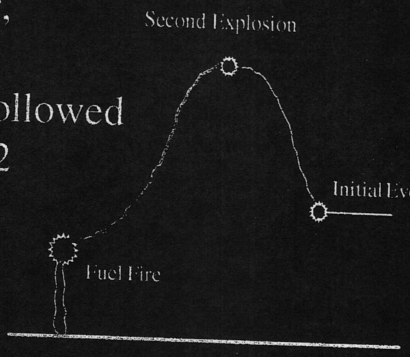
[redacted]

Observations

- Observed red object ascending for 30 sec from *East to West* at a steep angle
- As object reached zenith, it arced over, traveled horizontally for 10 sec, then witnessed a small explosion, followed by 2 'tremendous' explosions, and 2 objects falling toward horizon



Conclusions

- Observed entire event due to extended time of observations
- Observed end event with explosion and two falling objects
- *Observations consistent with aircraft trajectory except for East to West motion*

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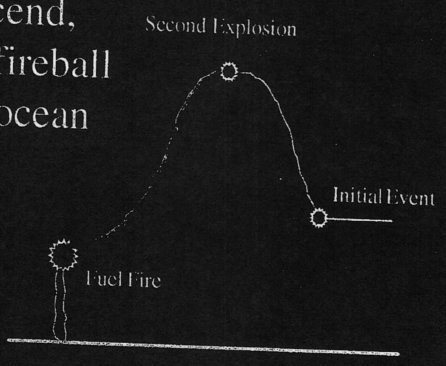
C05782770

[redacted] [48]

Observations

- Attention drawn to 'shooting star' with quite a tail
- Ascending in an upward arc, then descend, and disappear before finally seeing fireball
- Observed 3 booms after wreckage hit ocean



Conclusions

- Observing entire event
  - But only observes one object
- Time of booms consistent (should take 52 sec)
- *Total time frame could better fix first observation*

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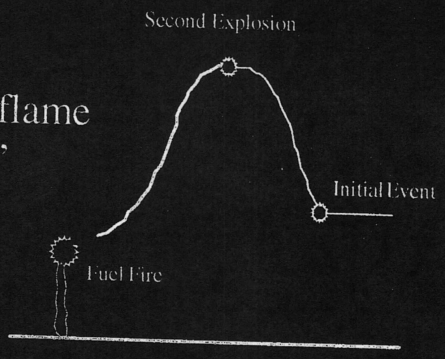
000461

[redacted] [49]

Observations

- Observed yellow-gold flame with no tail, 30 deg above horizon
- Flame had no movement except possibly 'dipping'
- Observed something shoot off yellow flame described as 'reddish/orange plume'



Conclusions

- Seeing events close to fireball
  - No lateral movement (should see 5 deg azimuth change)
  - Object shooting off separation of wing and aircraft body
  - Color consistent with fuel fire

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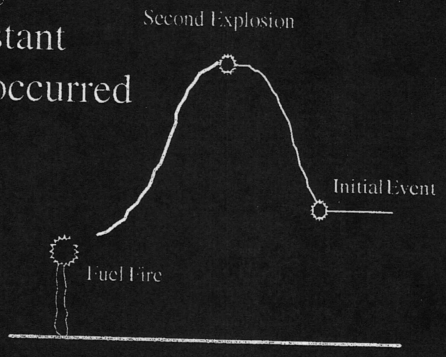
[redacted] [50]

Observations

- White line tracing upward into sky for 2 sec
- At top of white line was a 'little red light' which appeared to hover for an instant a then a 'big, dark red explosion' occurred
- Entire incident about 10-15 sec



Conclusions

- Big, dark red explosion matches end event
- Observation time of 10-15 sec not sufficient to see initial event

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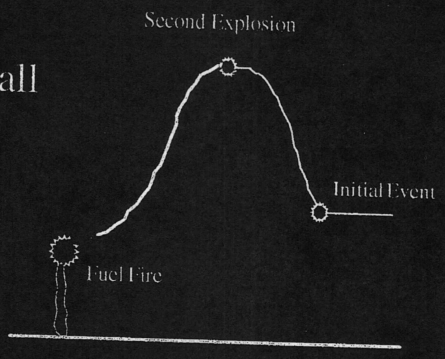
000463

[redacted] [51]

Observations

- Observed a 'bright red flare' trailing a white smoke plume tracking in an arc-like manner
- Lost sight of object followed by a small flash, and then a large fireball



Conclusions

- Observed events around fireball
  - Timing, color, and loss of tracking on flare consistent with time before fireball

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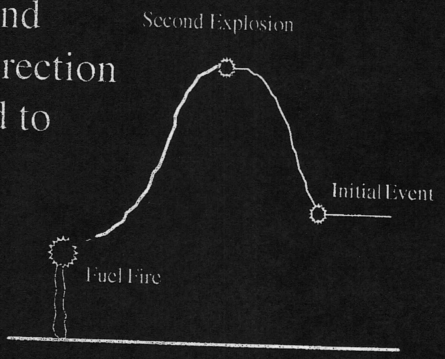
C05782770

[redacted] [52]

Observations

- Object 1 which was bright white light with reddish pink aura
- Object 1 ascended almost vertically and then arching to the right in a SW direction
- Object 2 was stationary, and appeared to glitter in sky
- Object 1 headed toward object 2 and believed they impacted
- Impact point marked by a white puff
- Out of puff came 2 objects which turned into large rectangular balls of fire which descended behind trees
- *Entire event took place over 7 seconds*



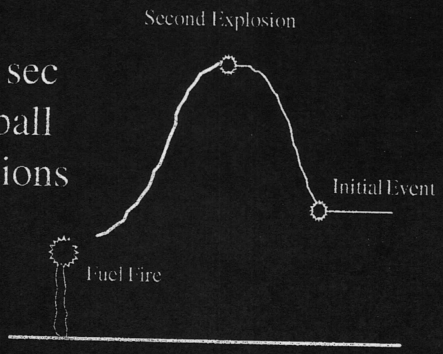
For Official Use Only

000465

[redacted] [52]

Conclusions

- Object one was aircraft observed after second explosion
  - Total observation time was only 7 sec
- Object two was observed close to fireball event by the witness' time observations
- Therefore, witness *did not* observe two objects around the *initial* event
- Two objects coming out of puff is wing and aircraft body
- It is still not determined what stationary, object 2 is



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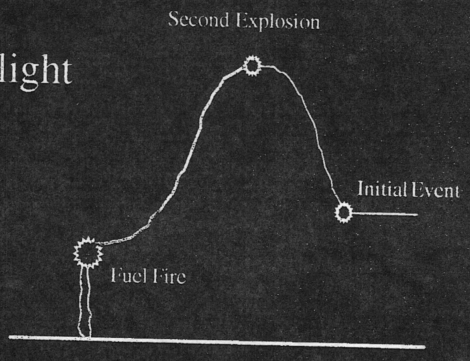
C05782770

[redacted] [1]

Observations

- First observed 'white light' traveling upward for 15 sec
- Light then disappeared for 2-3 sec, followed by a descending orange light
- After light fell behind building, heard first of 4 explosions



Conclusions

- Observations consistent with aircraft trajectory
- Observed all phases of trajectory
- Sound propagation matches time observations from start to end of trajectory

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C05782770

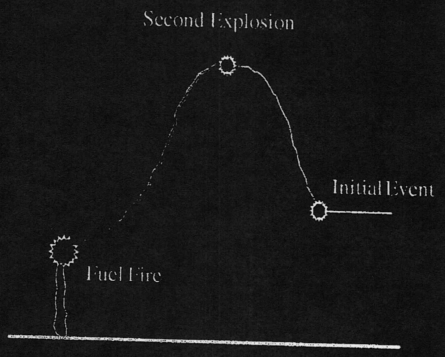
[redacted] [53]

Observations

- Observed bright light ascending quickly

Conclusions

- Could have observed initial ascent
- Could have observed events only around fireball as it would be easiest observation from over 21 miles away



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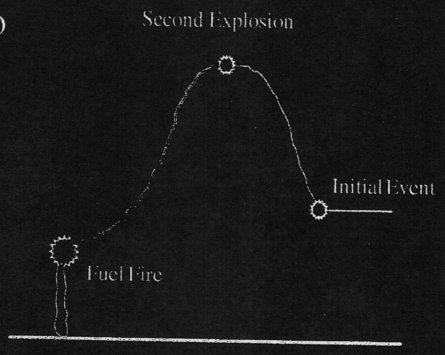
000468

C05782770

[redacted] [54]

Observations

- Observed 'shooting star' traveling up and East to West immediately prior to witnessing the explosion
- Witness described object as moving much faster than aircraft



Conclusions

- Could have observed initial ascent
- If '*immediately* prior to explosion' short time, then only observing end event
- *Did witness observe both object and aircraft?*

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C05782770

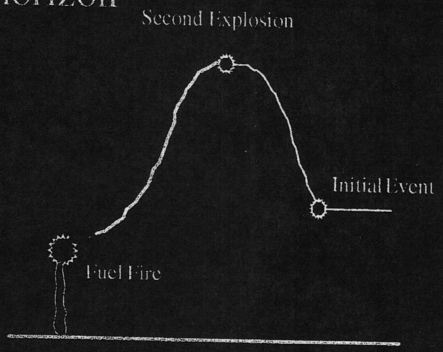
[redacted] [55]

Observations

- Observed object similar to 'rocket' ascending into air from just above horizon
- Witness followed object up until observing explosion
- With witness 56

Conclusions

- Could have observed initial ascent
- Most *likely* observed events around fireball since explosion occurred at top of rocket trajectory
- Did only observe one object that led to explosion
- *Time information could fix witness' initial observation*



For Official Use Only

000470

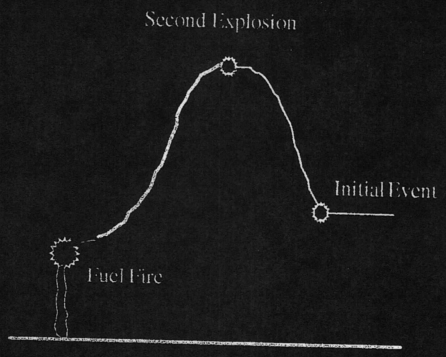
[redacted] [56]

Observations

- Observed object similar to 'rocket' ascending up from horizon
- Object was 'reddish/blue' flash
- Witness then heard loud boom

Conclusions

- Most likely observing fireball event due to timing of the boom



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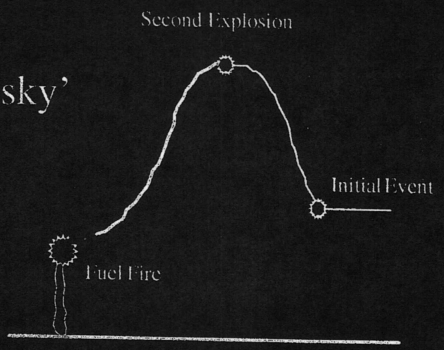
[redacted] [57]

Observations

- Heard a 'booming' sound
- Then looked up and saw grey smoke trail 'heading towards sky'

Conclusions

- Sound would take 51.6 sec to reach witness *after* the fireball event



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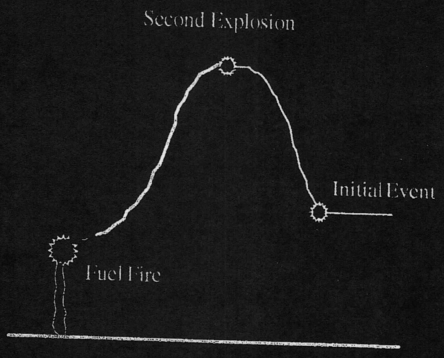
C05782770

[redacted] [58]

Observations

- Observed a 'bright orange flare' traveling upward for 5 sec where it 'struck' the aircraft destroying it
- Describes series of large explosions and fireball falling from sky



Conclusions

- Observed events around fireball
  - Timing of explosion and color consistent with events before fireball

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C05782770

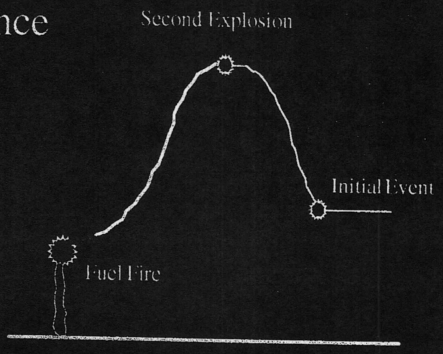
[redacted] [59]

Observations

- Observed a flame come out of water and heard three booms in the distance

Conclusions

- Flame coming out of water matches fireball
- Sound takes 61 sec to arrive, after fireball event

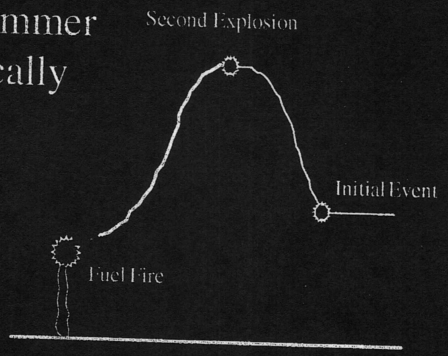


For Official Use Only

[redacted] [60]

Observations

- Observed 'red flare' ascending toward aircraft becoming brighter then dimmer
- Then observed object descend vertically



Conclusions

- Observed initial ascent
- Did not observe fireball (should be 3.8 deg on horizon)
- *Assume witness did not observe <u>both</u> aircraft and object, but <u>assumed</u> this from up and over flight path*

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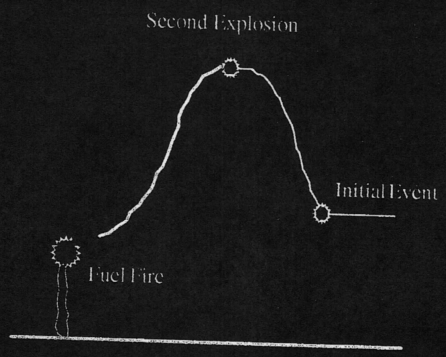
[redacted] [61]

Observations

- Observed 'red glowing' object ascending toward TWA800 immediately prior to its destruction



Conclusions

- Observed a single event which was the fireball

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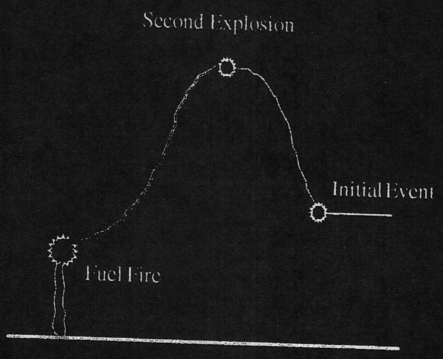
[62]

Observations

- Observed a 'flare' ascending from horizon
- Flare rose up, appeared to slow down or stop, then descended
- Then witness reported seeing large explosion



Conclusions

- Could have observed entire event
  - Saw only one continuous trajectory
- Limited witness account hinders determination of first observations

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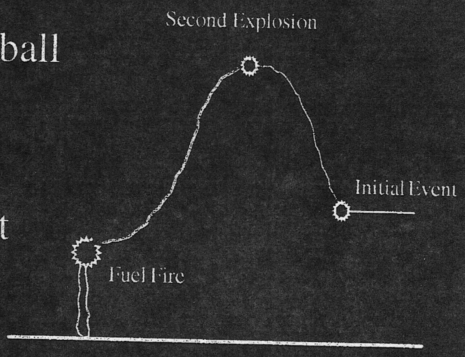
[redacted] [2]

Observations

- Observed whitish-yellow 'flare' to SSE
- Flare ascended, arced over, descended, and then observed fireball

Conclusions

- Initial event at 196 deg azimuth
- Observations *most likely* consistent with entire aircraft trajectory
- Observations could be just end event
- *Better time information could allow for better fix on observations*

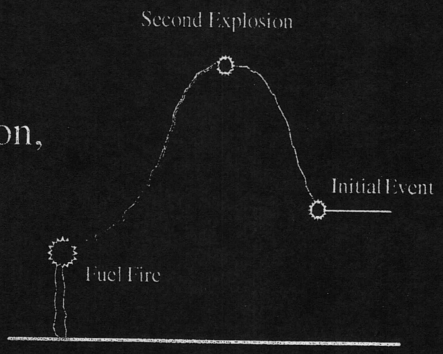


For Official Use Only

[redacted] [63]

Observations

- Observed 'flare' rising from surface of water at very rapid rate
- After attaining an unknown altitude, object changed altitude and course and then saw a small flash/explosion, then a second more powerful explosion and ensuing fireball



Conclusions

- Describes end fireball at end
- Unknown when observation of flare rising started so witness could have seen initial event

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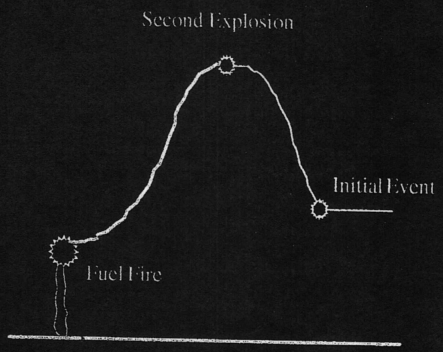
[redacted] [64]

Observations

- Heard loud boom, and then large, black cloud drifting away

Conclusions

- Observations after hearing sound
- Seeing aftermath of end event



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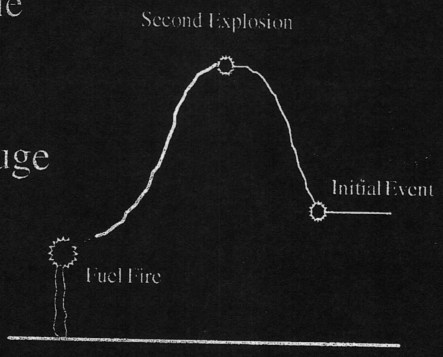
C05782770

[redacted] [65]

Observations

- Observed bright white object arching into sky from West to East at angle greater than 45 deg
- After 3 sec it reached its apex, light fizzled out and moments later a huge explosion occured.



Conclusions

- Due to short observation time and description of end event, witness observations limited to end event only

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000481

C05782770

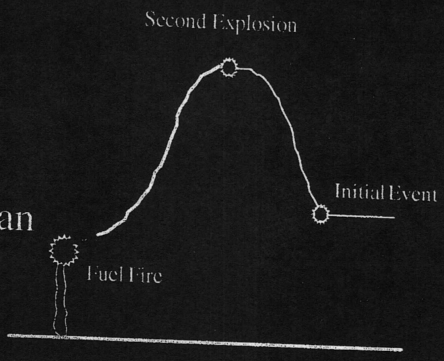
[redacted] [66]

Observations

- Noticed 'red flame streak toward sky' in Westerly direction
- Flame was like flare with head and narrow trail of smoke
- Then observed several explosions and fireball descending toward ocean

Conclusions

- Due to short observation time and description of end event, witness observations limited to end event only



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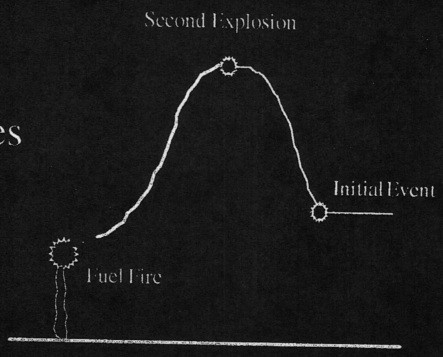
000482

[redacted] [67]

Observations

- Observed a reddish-orange flare ascending from above horizon
- The object reached its peak and began falling
- During fall it separated into two pieces



Conclusions

- Due to short observation time and description of end event, witness observations limited to end event only

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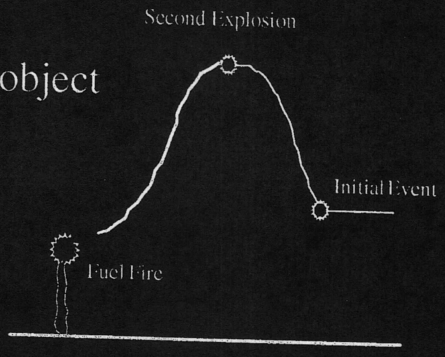
C05782770

[redacted] [68]

Observations

- Observed flare slowly rising up for 4 or 5 sec, trailing a narrow band of white smoke
- Then observed flare 'hitting aircraft'
- There was one flame that came from object which was very bright



Conclusions

- Most likely saw end event
- Short observation time between ascending object and fireball
- Witness did not say they observed both the flare and aircraft at same time

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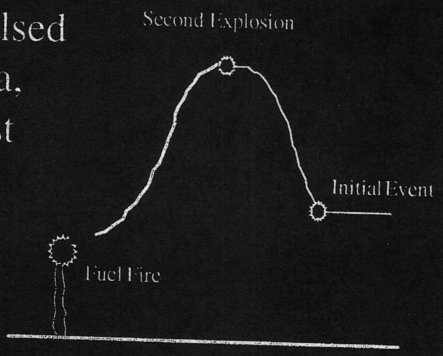
C05782770

[redacted] [69]

Observations

- Attention was drawn to flare ascending over ocean at a 'steady, remarkable pace'
- Observed flare for 10 sec before it pulsed brightly in small concentrated area.
- Two seconds later the large object lost its momentum and ignited into a fireball



Conclusions

- Due to short observation time and description of end event, witness observations limited to end event only

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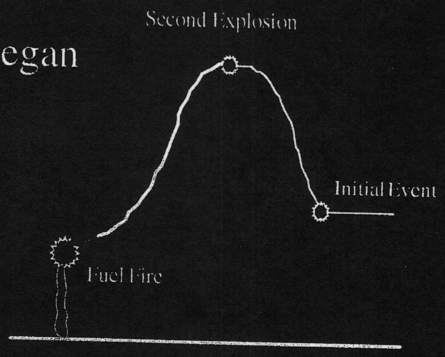
000485

[redacted] [70]

Observations

- Observed the 'biggest Roman Candle he had ever seen'
- The 'Roman Candle' rose into sky, began arcing, then exploded into a large fireball



Conclusions

- Due to short observation time and description of end event, witness observations limited to end event only

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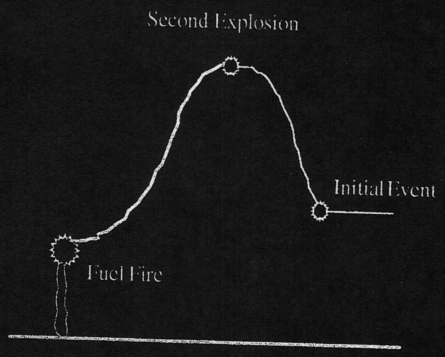
C05782770

[redacted] [71]

Observations

- Saw an object ascending form the horizon into the sky trailing grey smoke



Conclusions

- Due to short observation time and limited description of what is most likely end event, witness observations limited to end event only

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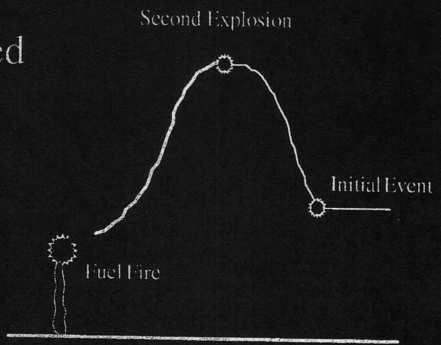
[redacted] [72]

Observations

- Observed object resembling a flare streak through the air, then witnessed explosion of TWA 800



Conclusions

- Due to short observation time and limited description of what is most likely end event, witness observations limited to end event only

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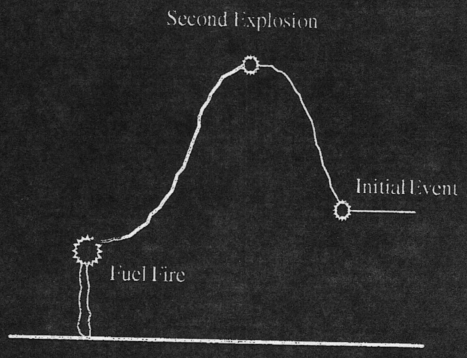
C05782770

[redacted] [3]

Observations

- Observed 'flare' rising above horizon from East
- Flare was red-orange
- Flare disappeared and *seconds* later a 'wide area' of sky was filled with fire



Conclusions

- Trajectory from 127 to 114 deg azimuth (East)
- Flare color and 'wide area' timing consistent with ending fireball
- *If longer event, could be seeing initial ascent*

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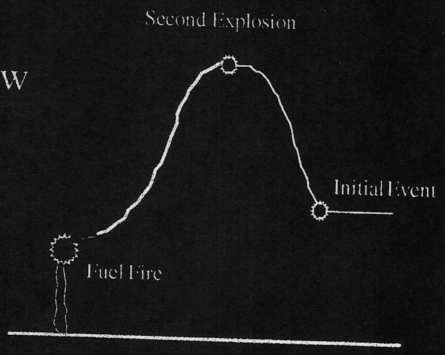
000489

C05782770

[redacted] & [redacted] [73]

Observations

- Observed a 'flare' rising straight up, then arcing over in Easterly direction
- Saw flash of bright light followed by a large red and orange fire type glow
- Flare flew behind sand dune



Conclusions

- Witnessed only end event due to short time of observations which start just prior to the fireball

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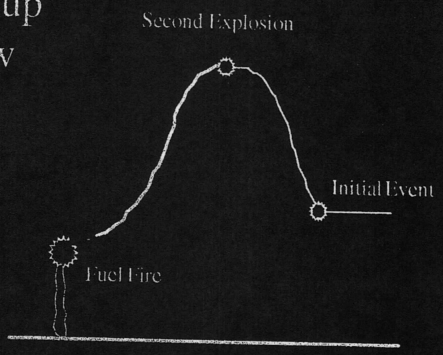
000490

C05782770

[redacted] [74]

Observations

- While surfing, saw something shoot up from ground, then fireball and saw wings of plane separate and fall



Conclusions

- Due to short observation time and limited description of what is end event, witness observations limited to end event only

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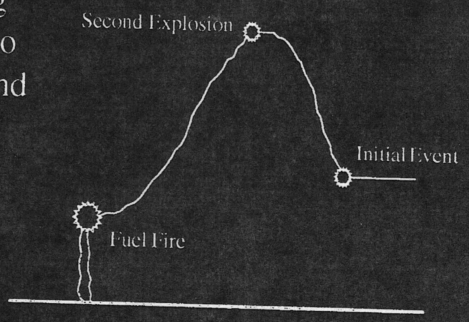
Remaining Witness - [redacted] [75]

Observations

"... was sitting on a dock in Patchengh watching the aircraft, then observed what appeared to be a flare or fireworks shoot up from ground *toward the aircraft*. He then saw a bright orange fireball and subsequent explosion."



Conclusions

- Most likely saw end event due to time between initial observation and end explosion
- Main concern remains witness' observation of "flare shooting up toward aircraft"
- Further re-investigation required to better fix start of observations

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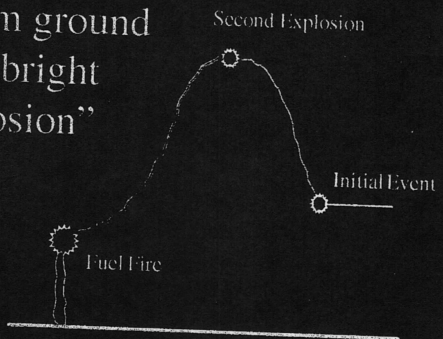
Observations

- "... was sitting on a dock in Patchengh watching the aircraft, then observed what appeared to be a flare or fireworks shoot up from ground *toward the aircraft*. He then saw a bright orange fireball and subsequent explosion"



Conclusions

- Most likely saw end event due to time between initial observation and end explosion
- Main concern remains witness' observation of "flare shooting up toward aircraft"
- *Further re-investigation required to better fix start of observations*

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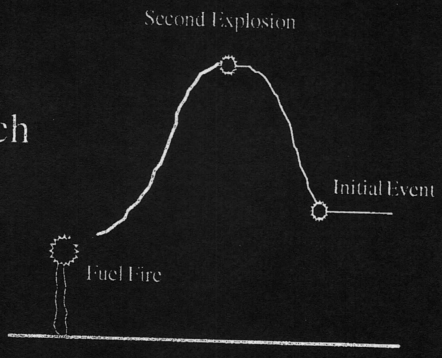
C05782770

[redacted] [76]

Observations

- Flash of light drew his attention to SE
- Observed a red-orange light, ascending in sky, in a 'very high arc'
- Flare reached its apex, and separated into 'two reddish-orange balls' which then fell to horizon



Conclusions

- Due to implied short observation time and description of end event, witness observations limited to end event only
- *Total viewing time would better fix start of observations*

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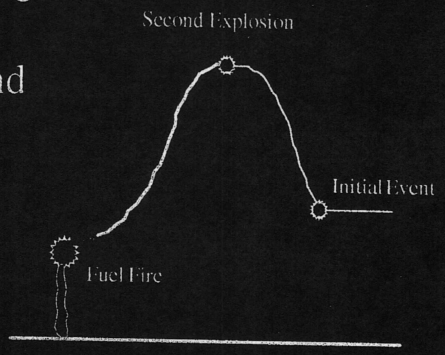
000494

C05782770

[redacted] [77]

Observations

- Was watching aircraft when he observed 'flash as if a flare had ignited leaving a trail of red and orange'
- As flare descended, there was a second eruption of 2 'umbrella-like' showers of red-orange fire



Conclusions

- Due to observing only descending objects and description fitting end event, witness observations limited to end event only

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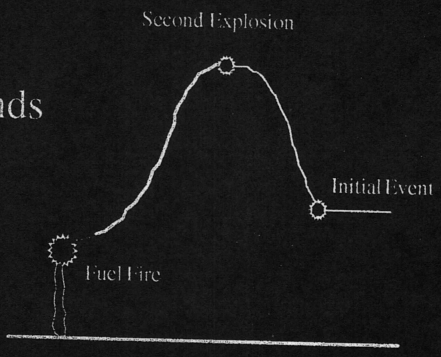
000495

C05782770

[redacted] [78]

Observations

- Noticed an object ascending very quickly left to right, with a bright tip and a bright yellowish or orange tail
- Observed object for less than 5 seconds before losing it
- Then observed fireball



Conclusions

- Due to short observation time and description of end fireball, witness observations limited to end event only

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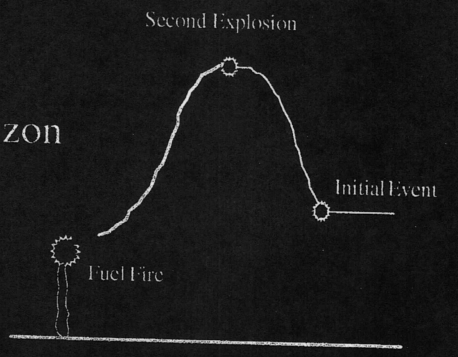
000496

C05782770

[redacted] [79]

Observations

- Observed an object in the sky shooting white lights like a sparkler
- This object developed into a cylinder-shaped orange/red fireball which fell straight down to the horizon and disappeared



Conclusions

- Due to short observation time and description of end fireball, witness observations limited to end event only

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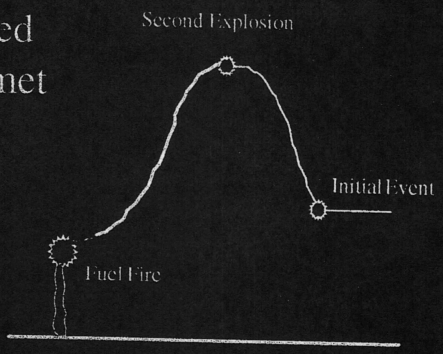
000497

C05782770

[redacted] [80]

Observations

- Attention drawn to 'shooting star' traveling East to West at a 45 deg angle
- Object was small, orange-red, appeared to twinkle, and left a trial like a comet
- After traveling up slowly for about 10 sec, it exploded in mid-air sending an airplane wing falling through the fire



Conclusions

- Due to short observation time (10 sec) and description of wing separation, witness observations limited to end event only

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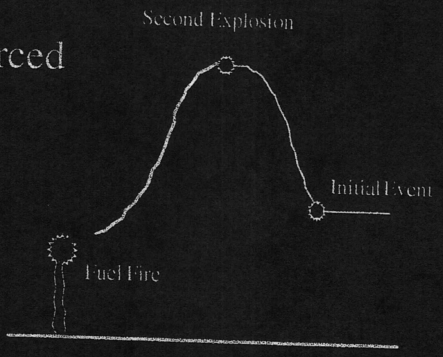
000498

C05782770

[redacted] [81]

Observations

- Observed a brightly glowing, yellow-orange ball of light which appeared encircled by white
- Object ascended almost straight up, arced slightly, and descended before striking aircraft
- The heard pop and a huge explosion and fireball



Conclusions

- Time of sound arrival (52 sec) matches end event observation
- Description of events just prior to end event

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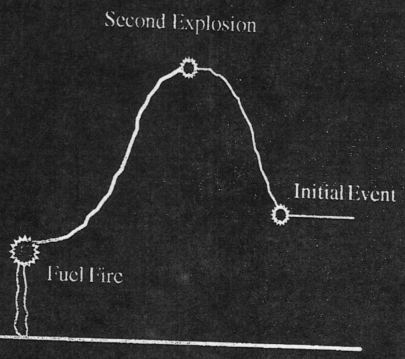
000499

C05782770

[redacted] [4]

Observations

- While looking East and SE, observed reddish-orange dot rise from water
- Dot reached apex, made small arch, fell a short distance, then disappeared
- Two seconds later, saw 2 red streaks
- Observed no noise, nor explosion



Conclusions

- Trajectory from 103 to 98 deg az (East)
- Color consistent with ending fireball, along with 2 red streaks at end
- *Need further clarification on total observation time*

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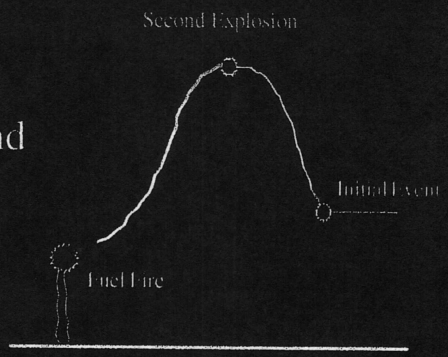
C05782770

[redacted] [82]

Observations

- Observed an orange streak that was far away for a few seconds, when it split into two sections, then erupted into a large ball of flame and fell into ocean



Conclusions

- Due to distance of observation and matching description of end fireball, witness observations limited to end event only

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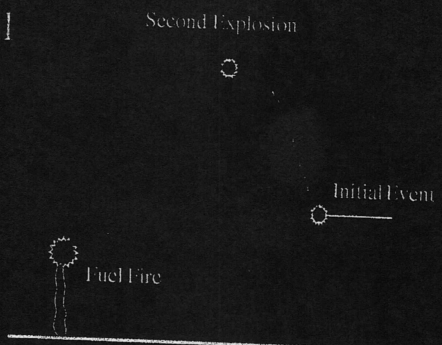
000501

C05782770

[redacted] [83]

Observations

- Observed flash out of corner of eye
- Turned and observed small white star point followed by a fine smoke trail
- It appeared to ascend and arch in a NE direction
- It took a subtle downward arc, disappeared for a few sec, then saw a bright orange ribbon



Conclusions

- Observations could be over entire trajectory
- Observed end fireball
- Limited time information does not allow witness to be categorized

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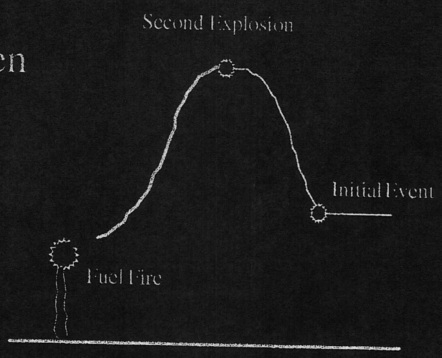
000502

C05782770

[redacted] [84]

Observations

- Observed an orange/red streak across horizon
- Walked outside and observed a huge fireball where streak had been



Conclusions

- Due to similarity of description and end fireball, witness observations limited to events just prior to end event

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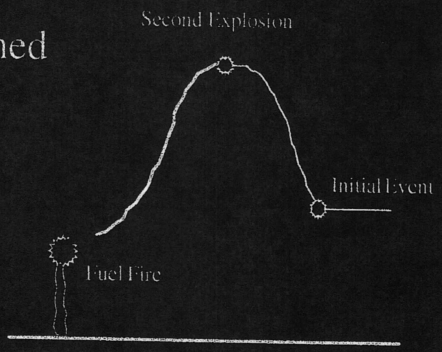
000503

C05782770

[redacted] [85]

Observations

- Observed something pop up from behind dunes
- Rising trail of white or silvery smoke, which 'ended of smoke quickly turned into a brilliant orange flash'



Conclusions

- Due to short observation time and description matching end fireball, witness observations limited to end event only

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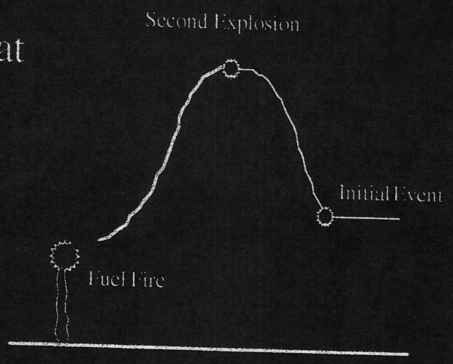
000504

C05782770

[redacted] [86]

Observations

- Observed fireworks or flare ascend from horizon
- Tried to get others to look, but when he found them, they were looking at large orange fireball



Conclusions

- Observations consistent with end event
- Better time frame between initial viewing and fireball could fix first observation starting earlier

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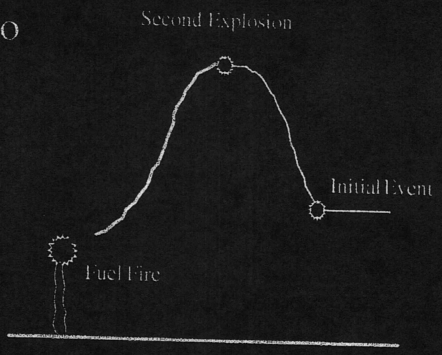
000505

C05782770

[redacted] [87]

Observations

- In cockpit of Virgin Air flight 009
- Observed an orange-white flare which ascended, bulged, then exploded into a fireball



Conclusions

- Due to short observation time and description of end fireball, witness observations limited to end event only
- *Gives detailed description of end fireball*

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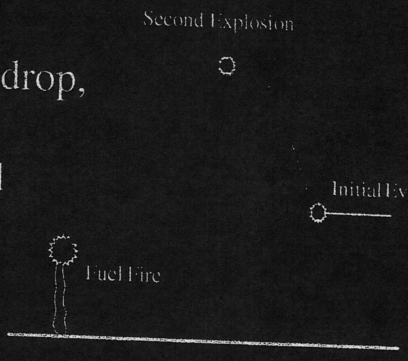
000506

C05782770

[redacted] [88]

Observations

- On board USAIR Flt 217
- Observed flare ascending which moved left to right
- Ascended in an arc, then appeared to drop, before it disappeared momentarily
- Then saw a small explosion, followed by a large explosion, which descended to Earth



Conclusions

- Gives a very detailed description of what matches aircraft trajectory

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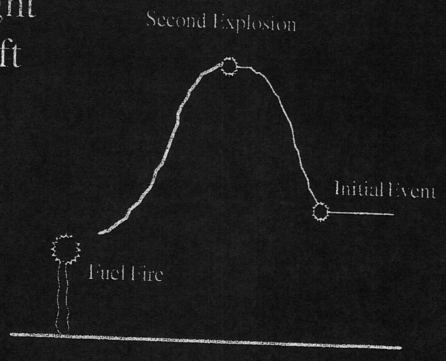
000507

C05782770

[redacted] [89]

Observations

- Piloting charted Boeing 737
- Saw unusually bright, off-colored light
- Soon afterward, the oncoming aircraft exploded in mid-air, sending the craft down in two pieces



Conclusions

- Due to short observation time and description of end fireball, witness observations limited to end event only

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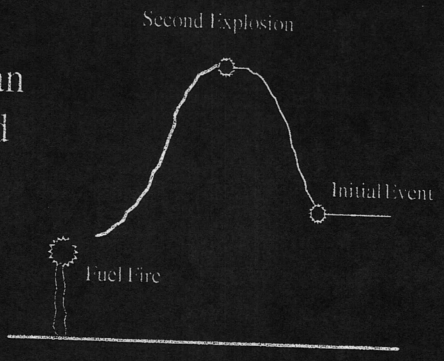
000508

C05782770

[redacted] [90]

Observations

- On UH-60 Blackhawk helicopter
- Observed streak of red light, with the trajectory of a shooting star
- Object maneuvered in arc, observed an explosion at end of streak, followed by a larger explosion which engulfed the first



Conclusions

- Due to short observation time and description of end fireball, witness observations limited to end event only

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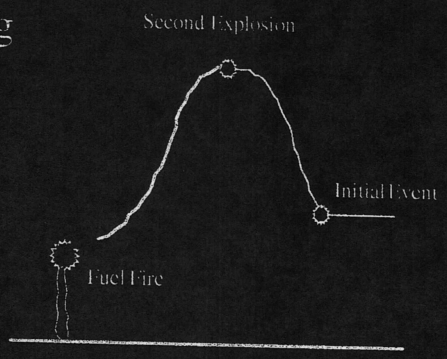
000509

C05782770

[redacted] [91]

Observations

- First officer on Piedmont Airline 3112
- Observed flash, like bright coals being flung forward in a parabola
- The ball separated into two balls which fell downward



Conclusions

- Due to short observation time and description of end fireball, witness observations limited to end event only

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000510

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000511

(b)(7)(c)

ACROPOLIS
Concensus Meeting
6Mar97



0005120

Purpose of this meeting:

1. To achieve concensus on the flow of the overall TWA–800 crash story

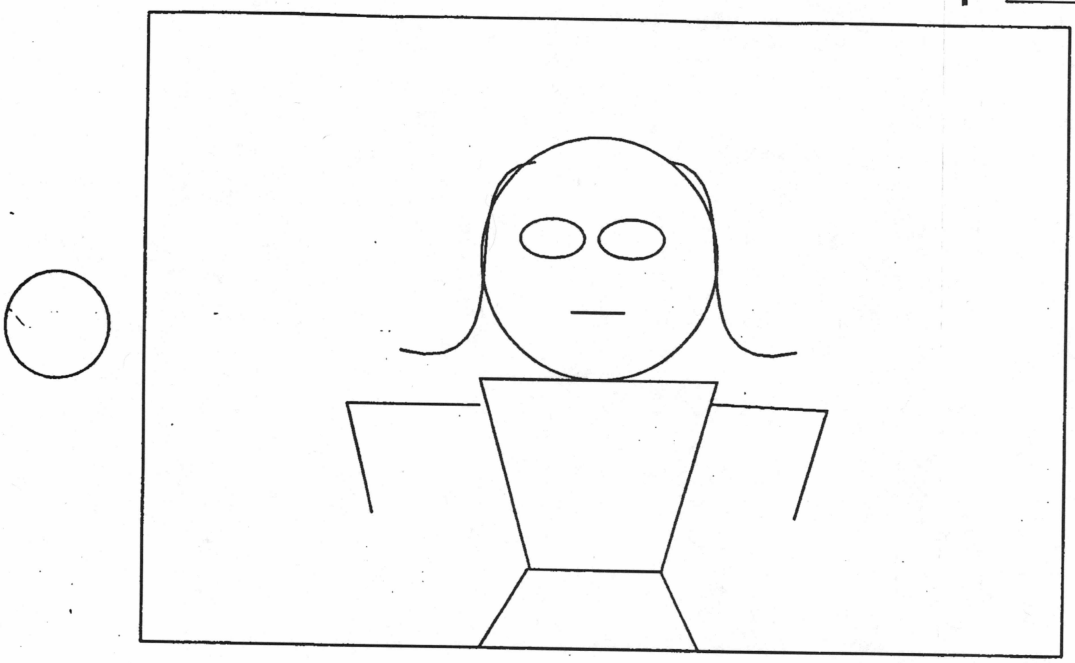
2. To achieve concensus on the responsibility for creation of scenes for the final product

APPROVED FOR RELEASE DATE: 19-Mar-2012

C05784359

db_5Mar97

C05784359 **e #:** _____ **Group:** TALKHD1



ACROPOLIS

Title: Talking Head

Video:
- ☐ Still
- ☑ Video
- ☐ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☐ Narration
- ☑ Site Sound

Description:

db_5Mar97

000513

C05784359

Scene #: _____ **Group:** BULLET1

Was a missile used to shoot down TWA flight 800?

We don't know.

ACROPOLIS

Title: Was a missile used text

Video:
- [x] Still
- [ ] Video
- [ ] 2D Animation
- [ ] 3D Animation

Audio:
- [ ] None
- [ ] Music
- [x] Narration
- [ ] Site Sound

Description:

Voice–over of narrator.

db_5Mar97

000514

C05784359

Scene #: _____ **Group:** BULLET2

Did the Witnesses see a missile shoot down TWA flight 800?

Almost certainly not.

ACROPOLIS

Title: Was a missile seen text

Video:
- [x] Still
- [ ] Video
- [ ] 2D Animation
- [ ] 3D Animation

Audio:
- [ ] None
- [ ] Music
- [x] Narration
- [ ] Site Sound

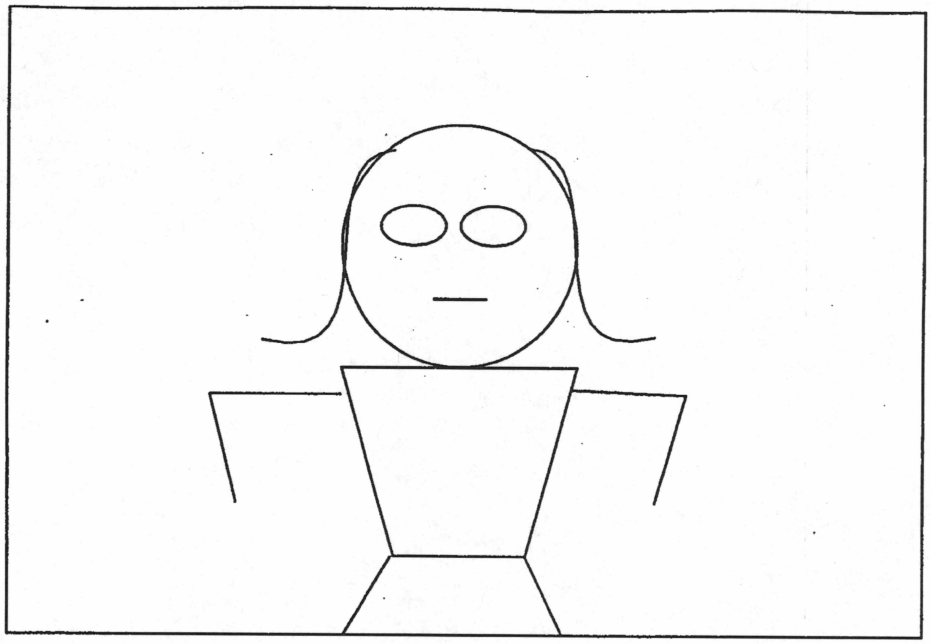
Description:

Voice–over of narrator.

db_5Mar97

000515

C05784359e #: _____ Group: TALKHD1



ACROPOLIS

Title: Talking Head

Video:
- ☐ Still
- ☑ Video
- ☐ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☐ Narration
- ☑ Site Sound

Description:

db_5Mar97

C05784359 **Scene #:** _____ **Group:** HILIT1

The Evidence

– The flight data recorders and radar track data

– The witness observations

– The wreckage

ACROPOLIS

Title: Was a missile seen text

Video:
- [x] Still
- [ ] Video
- [ ] 2D Animation
- [ ] 3D Animation

Audio:
- [ ] None
- [ ] Music
- [x] Narration
- [ ] Site Sound

Description:

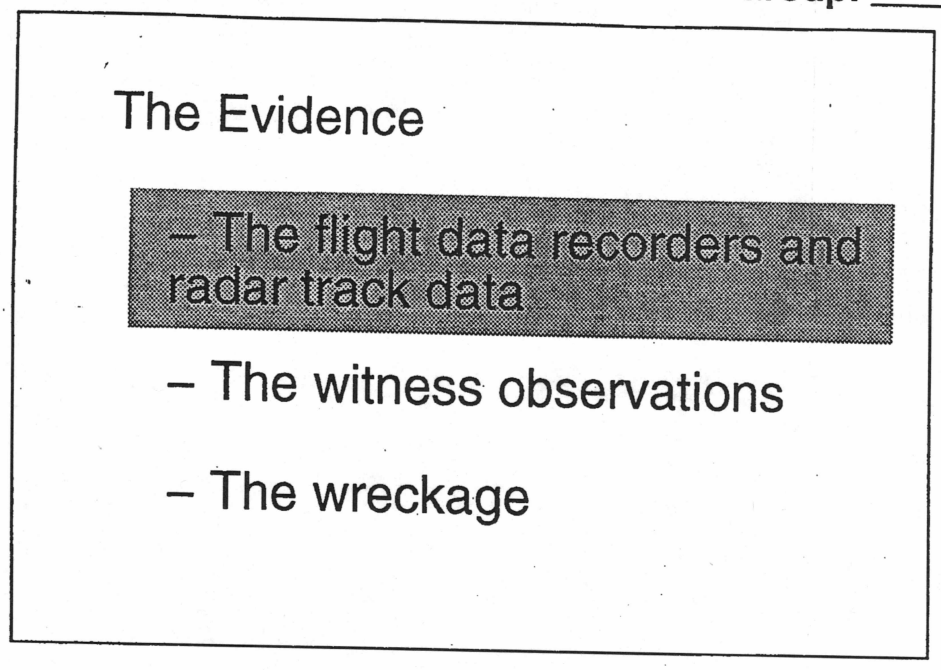
Voice–over of narrator.

db_5Mar97

000517

C05784359

Scene #: _____ Group: HILIT2



ACROPOLIS

Title: Was a missile seen text

Video:
- [x] Still
- [ ] Video
- [ ] 2D Animation
- [ ] 3D Animation

Audio:
- [ ] None
- [ ] Music
- [x] Narration
- [ ] Site Sound

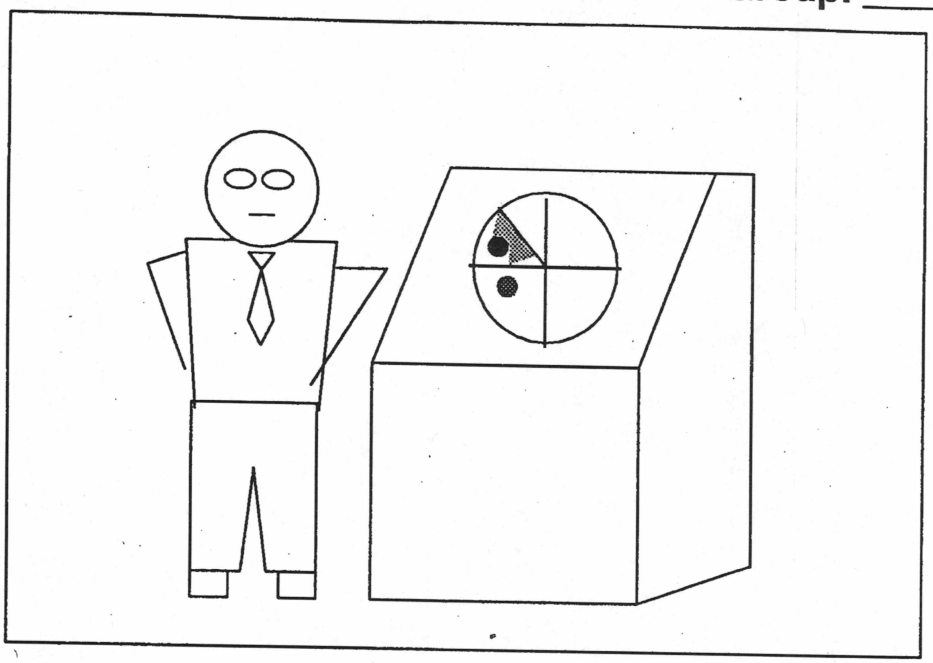
Description:

Voice–over of narrator.

db_5Mar97

000518

C05784359 **e #:** _____ **Group:** _____



ACROPOLIS

Title: Radar screen

Video:
- ☐ Still
- ☑ Video
- ☐ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☑ Site Sound

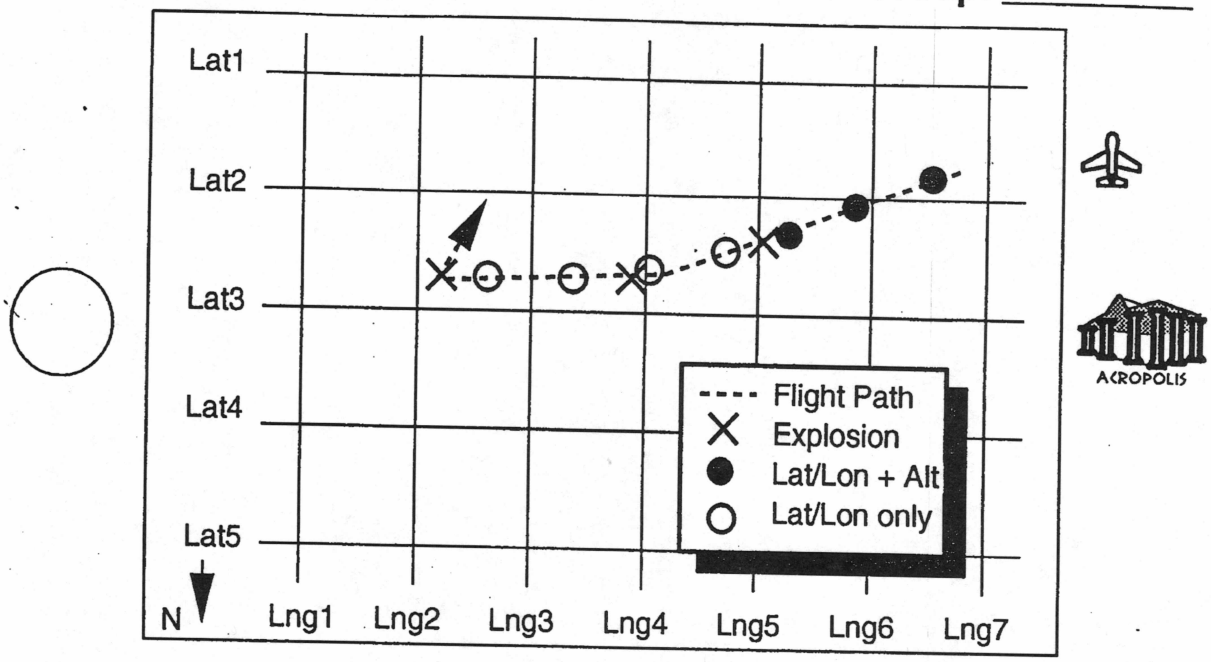
Description:

db_5Mar97

000519

C05784359

Scene #: _____ **Group:** SCI5



Title: Recorded Data Overhead

Video:
- [?] Still
- [ ] Video
- [x] 2D Animation
- [?] 3D Animation

Audio:
- [ ] None
- [ ] Music
- [x] Narration
- [ ] Site Sound

Description:

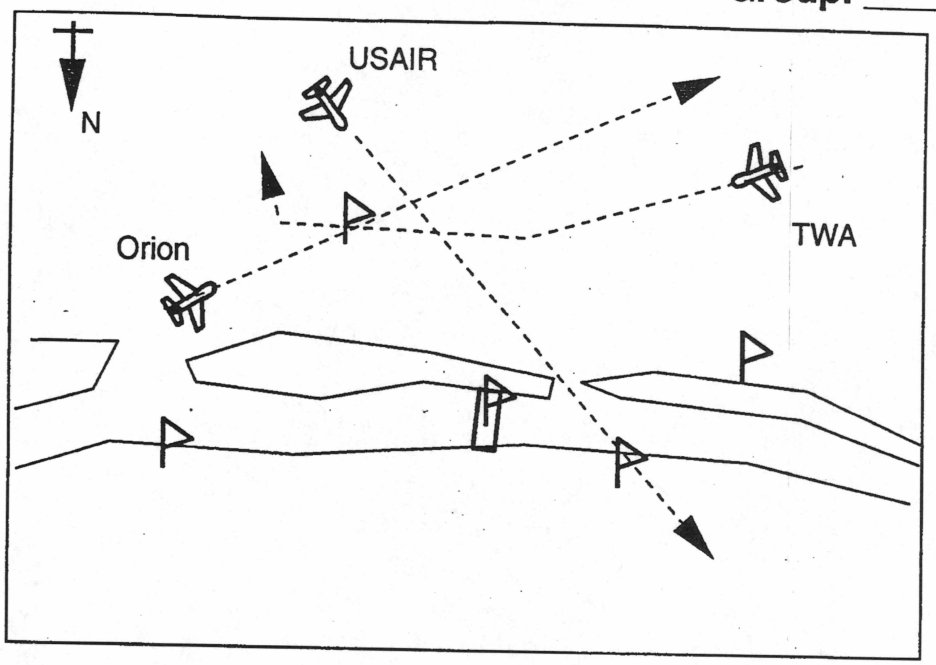
Still or animation of flight data recorder and radar information showing how data record was lost after first explosion. Voice–over of narrator.

May include different colors or flashing lights where different events occurred.

db_5Mar97

000520

C05784359**ıe #:** _____ **Group:** SCI7



Title: Orientation shot of vehicles and key witnesses

Video:
- ☐ Still
- ☐ Video
- ☑ 2D Animation
- ☐ 3D Animation

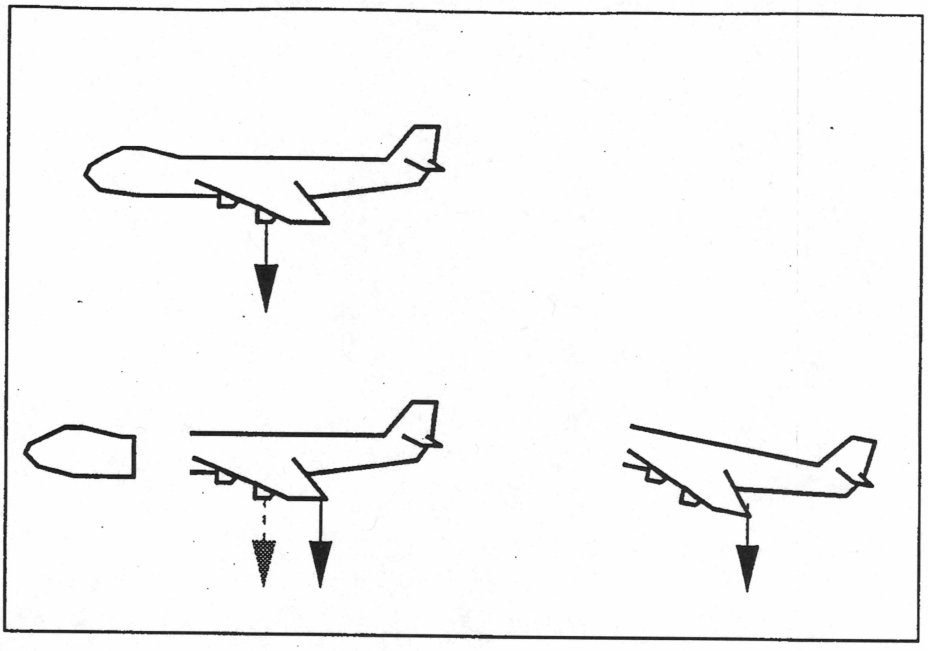
Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

Description:

db_5Mar97

000521

C05784359 **e #:** _____ **Group:** _____



Title: Center of Gravity shift

Video:
- [x] Still
- [ ] Video
- [ ] 2D Animation
- [ ] 3D Animation

Audio:
- [ ] None
- [ ] Music
- [x] Narration
- [ ] Site Sound

Description:

Shows change of center of gravity when front of plane is detatched.

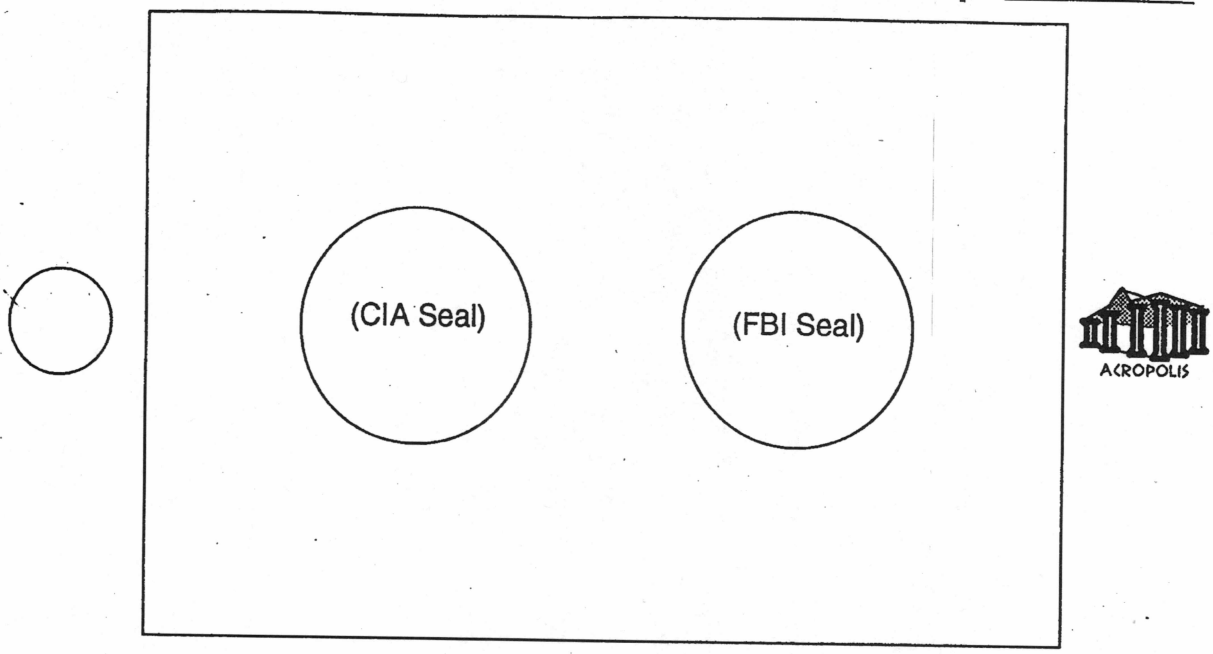
May include a fade in of each successive phase.

db_5Mar97

000522

C05784359

Scene #: _____ **Group:** INTRO9



Title: Lead–in scene with CIA and FBI seals

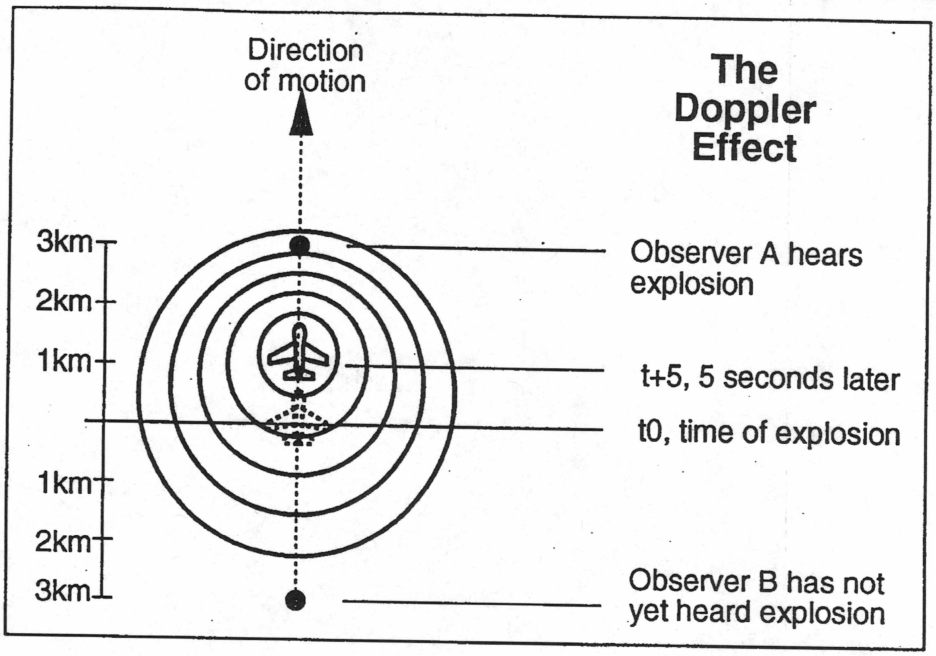
Video:
- [x] Still
- [ ] Video
- [ ] 2D Animation
- [ ] 3D Animation

Audio:
- [x] None
- [ ] Music
- [ ] Narration
- [ ] Site Sound

Description:

db_5Mar97

C05784359**ne #:** _____ **Group:** SCI2



ACROPOLIS

Title: _____

Video:
- ☐ Still
- ☐ Video
- ☑ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

Description:

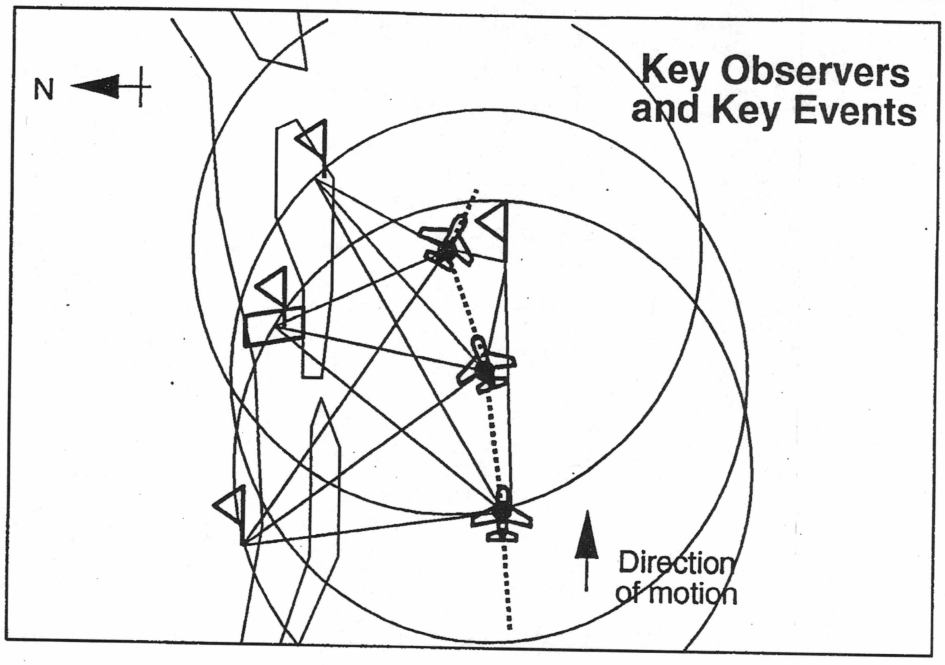
Animation of frequency increase due to vechicle motion (Doppler effect), also showing relative time difference of initial wavefront arrival to observers in front and behind moving vehicle. Voice–over of narrator.

db_5Mar97

000524

C05784359

Scene #: _____ **Group:** SCI3



ACROPOLIS

Title: _____

Video:
- ☐ Still
- ☐ Video
- ☑ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

Description:

Animation showing different times of arrival for light vs. sound of each event.

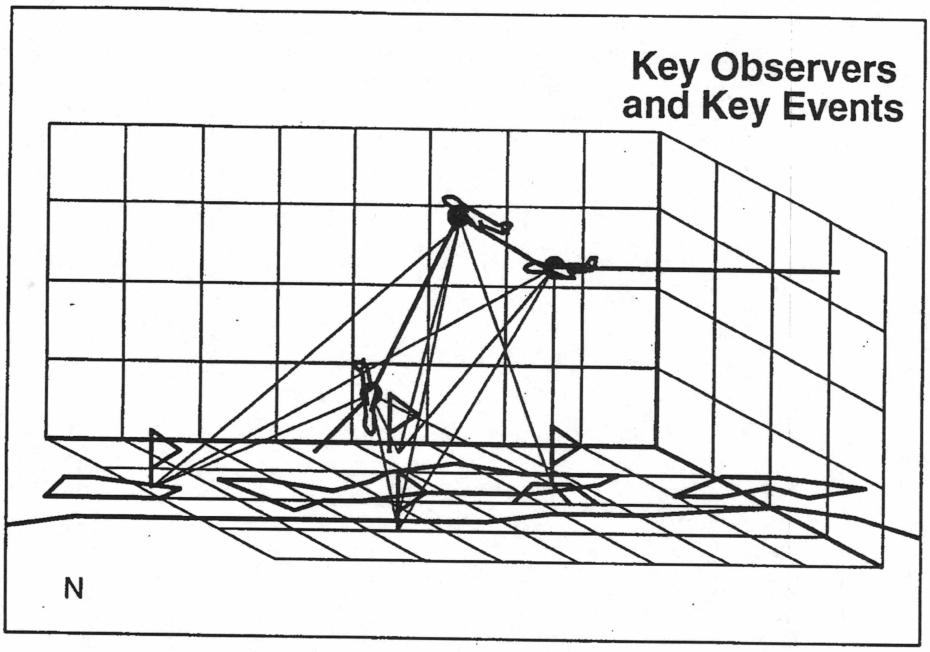
May include multiple animations highlighting individual observers.

Voice–over of narrator.

db_5Mar97

000525

C05784359 **ıe #:** _____ **Group:** SCI4



ACROPOLIS

Title: _____

Video:
- ☐ Still
- ☐ Video
- ☐ 2D Animation
- ☑ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

Description:

Animation showing different times of arrival for light vs. sound of each event.

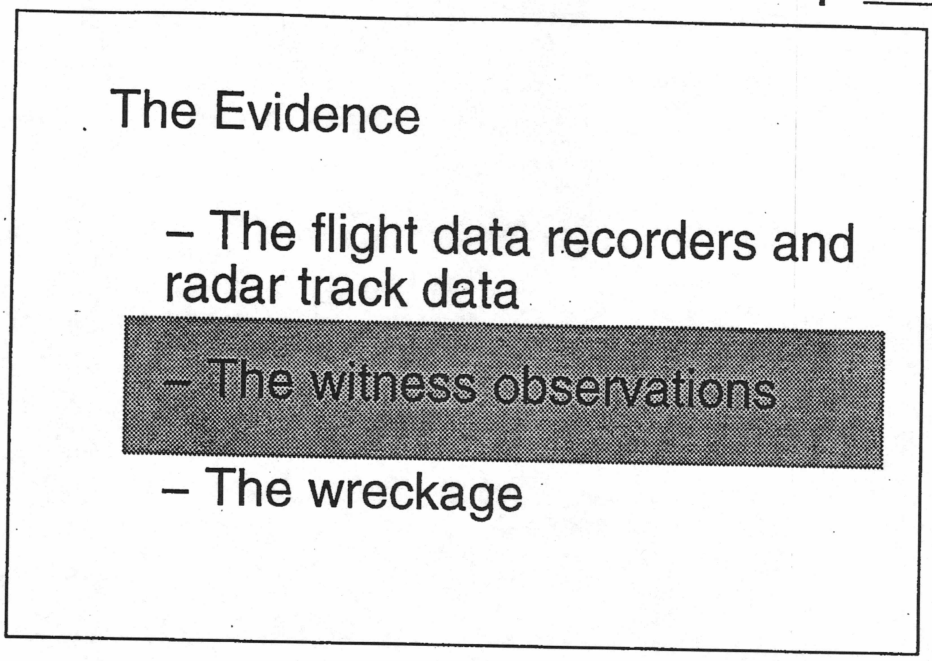
May include multiple animations highlighting individual observers.

Voice–over of narrator.

db_5Mar97

000526

C05784359 **ıe #:** _____ **Group:** HILIT3



Title: Was a missile seen text

Video:
- [x] Still
- [ ] Video
- [ ] 2D Animation
- [ ] 3D Animation

Audio:
- [ ] None
- [ ] Music
- [x] Narration
- [ ] Site Sound

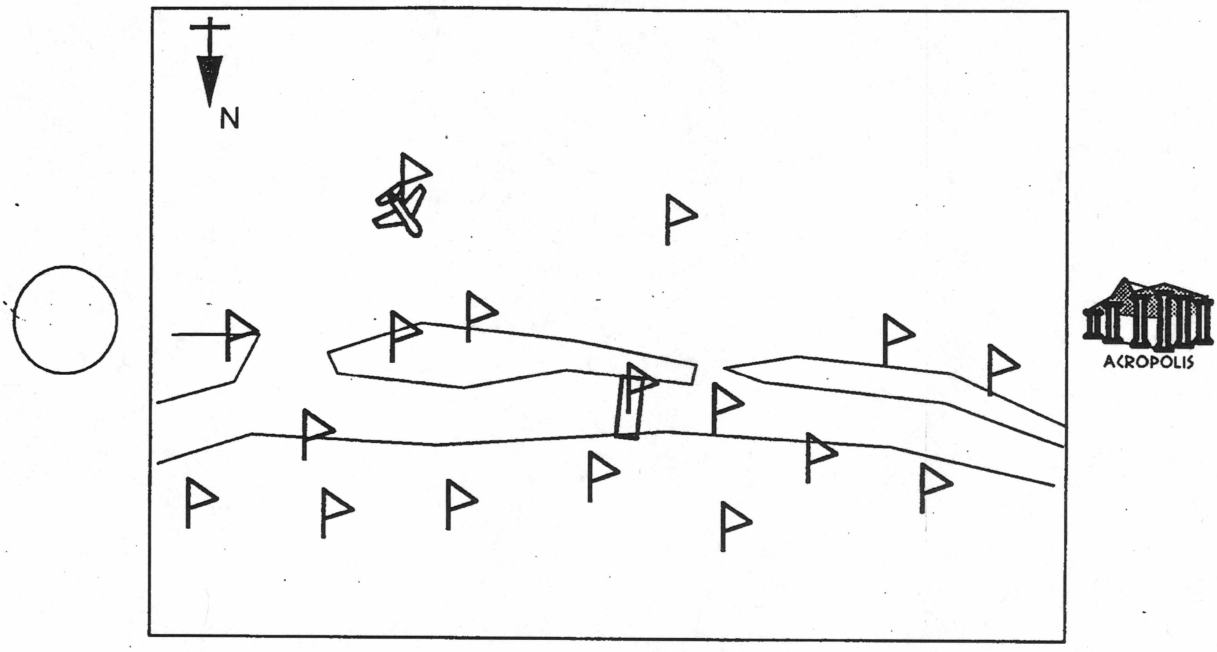
Description:

Voice–over of narrator.

db_5Mar97

000527

C05784359 **ne #:** _____ **Group:** SCI6



Title: Witness culling

Video:
- ☐ Still
- ☐ Video
- ☑ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

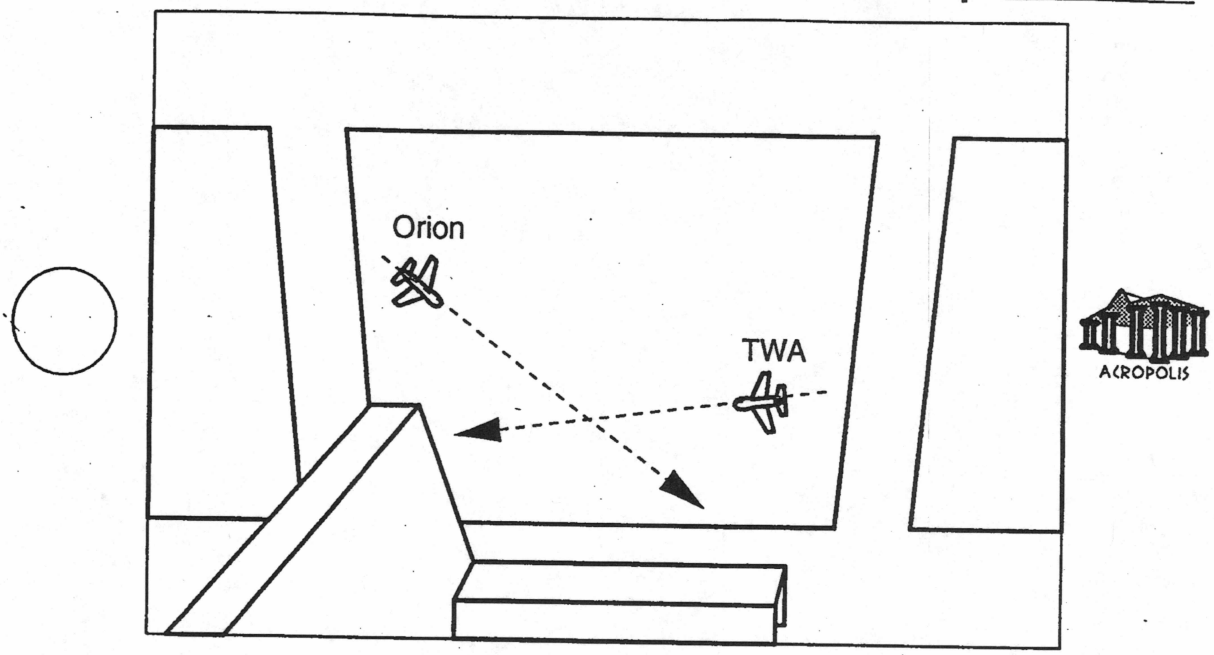
Description:

Animation showing lots of 'witness flags', and removing groups of them after the narrator provides a reason for them to be removed from consideration

db_5Mar97

000528

C05784359 **ne #:** _____ **Group:** OBSERV3



Title: Observer 3 (USAIR)

Video:
- ☐ Still
- ☐ Video
- ☐ 2D Animation
- ☑ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

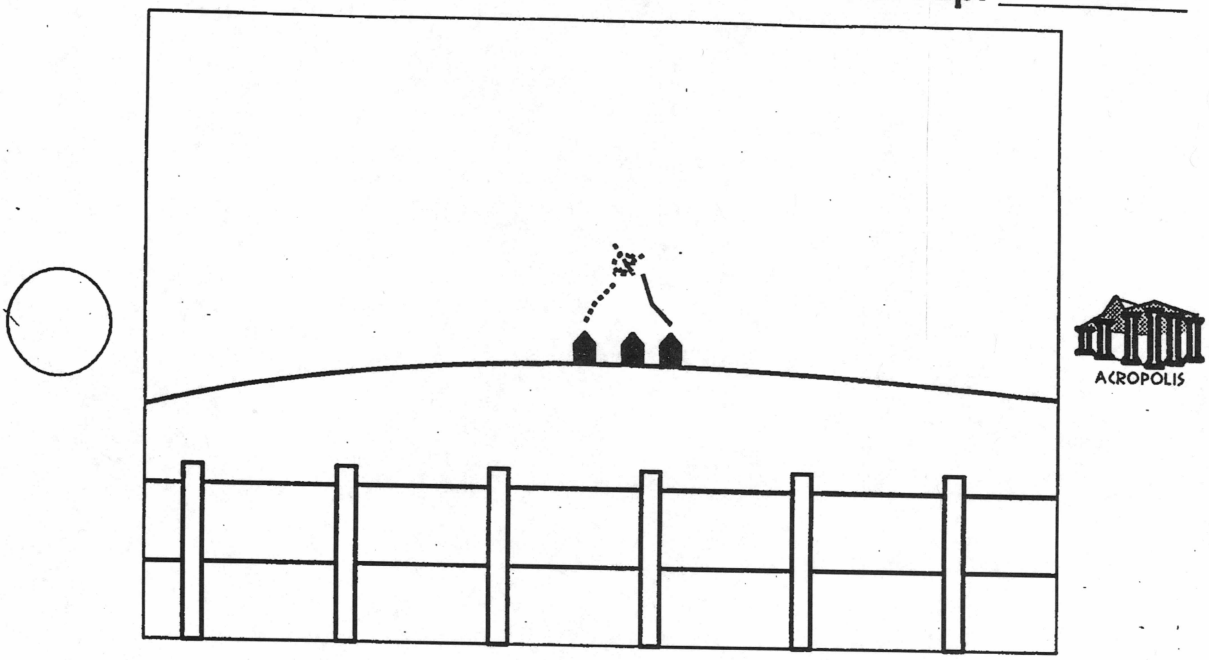
Description:

Animation showing observation of the Orion and TWA flights from the USAIR observer. Voice over of narrator.

db_5Mar97

000529

C05784359**ıe #:** _____ **Group:** Observ1



Title: Observer 1 (bridge)

Video:
- ☐ Still
- ☐ Video
- ☐ 2D Animation
- ☑ 3D Animation

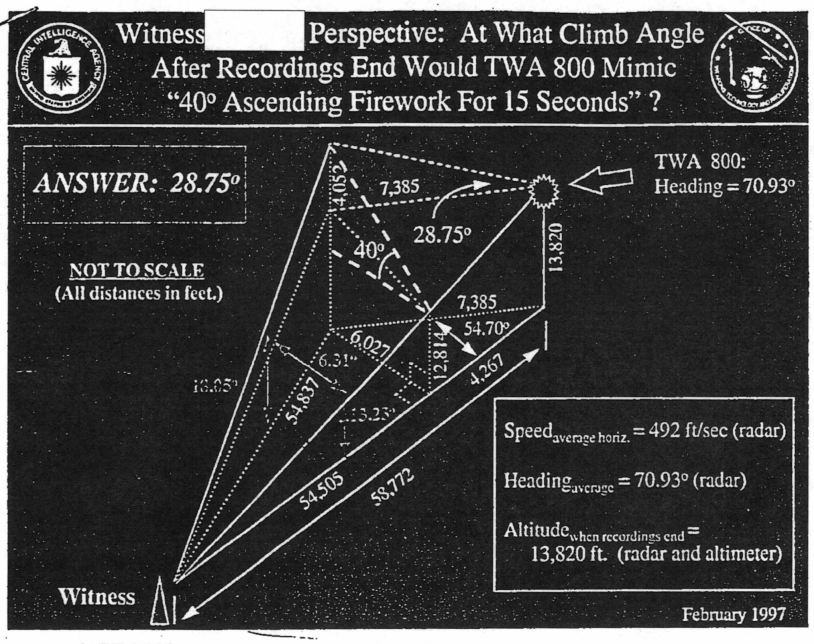
Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

Description:

db_5Mar97

000530

C05784359



ACROPOLIS

Title: Geometric Analysis of [redacted]

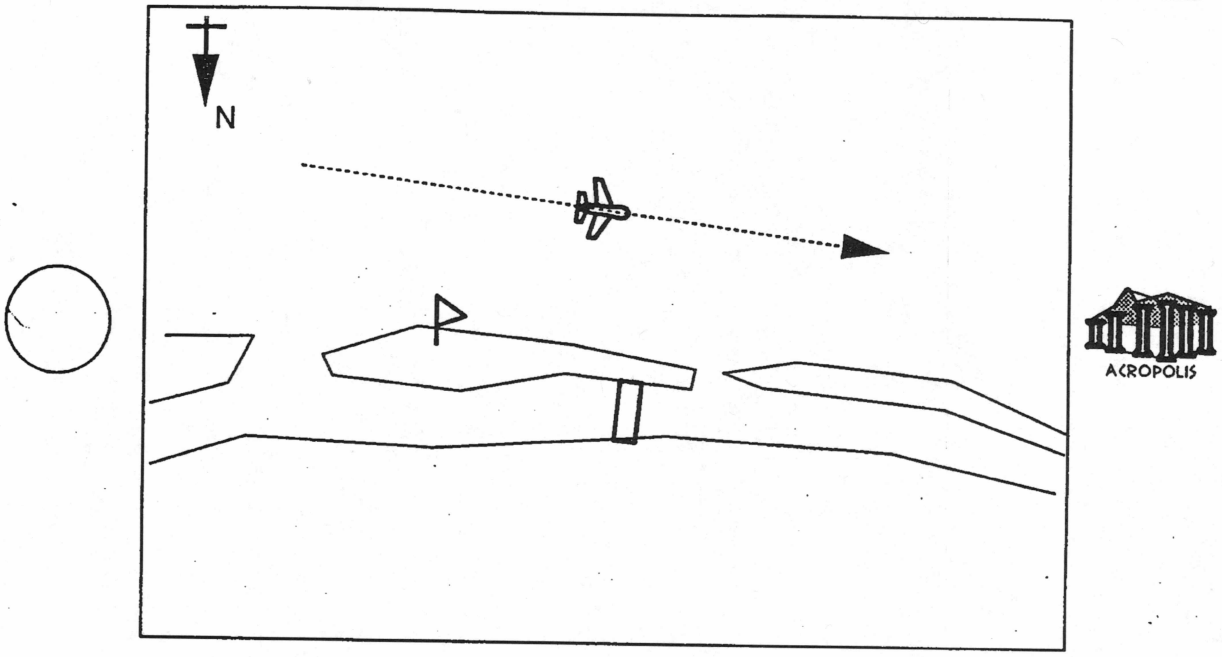
Video:
- [x] Still
- [ ] Video
- [ ] 2D Animation
- [ ] 3D Animation

Audio:
- [ ] None
- [ ] Music
- [x] Narration
- [ ] Site Sound

Description:

db_5Mar97

C05784359e #: _____ **Group:** OBSERV2



Title: Observer 2 (bad sighting)

Video:
- [x] Still
- [ ] Video
- [ ] 2D Animation
- [ ] 3D Animation

Audio:
- [ ] None
- [ ] Music
- [x] Narration
- [ ] Site Sound

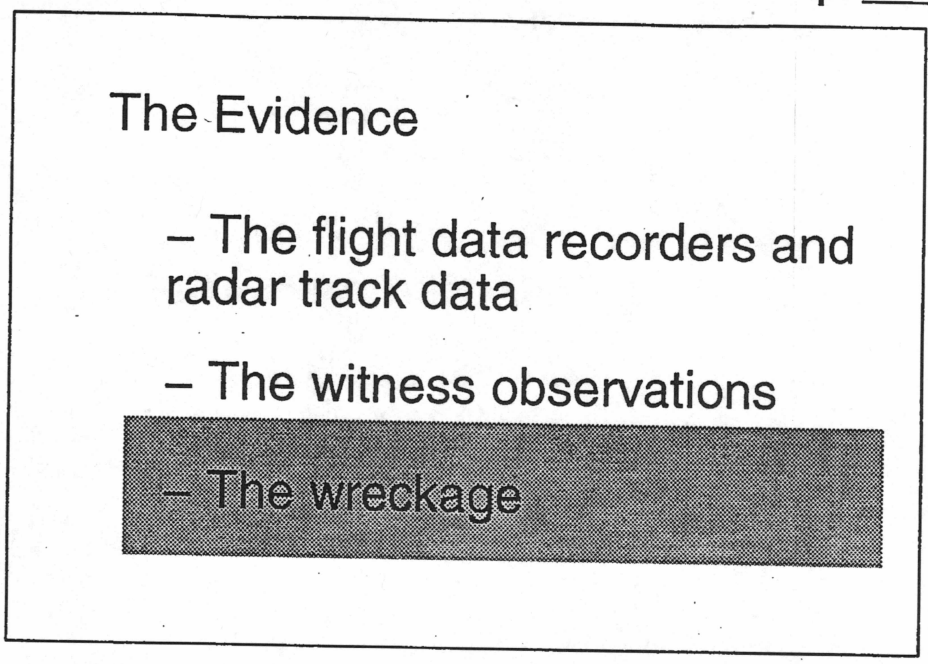
Description:

Witness who saw plane going west–to–east

db_5Mar97

000532

C05784359**le #:** _____ **Group:** HILIT4



ACROPOLIS

Title: Was a missile seen text

Video:
- [x] Still
- [ ] Video
- [ ] 2D Animation
- [ ] 3D Animation

Audio:
- [ ] None
- [ ] Music
- [x] Narration
- [ ] Site Sound

Description:

Voice–over of narrator.

db_5Mar97

000533

000534

Constraints

ACROPOLIS

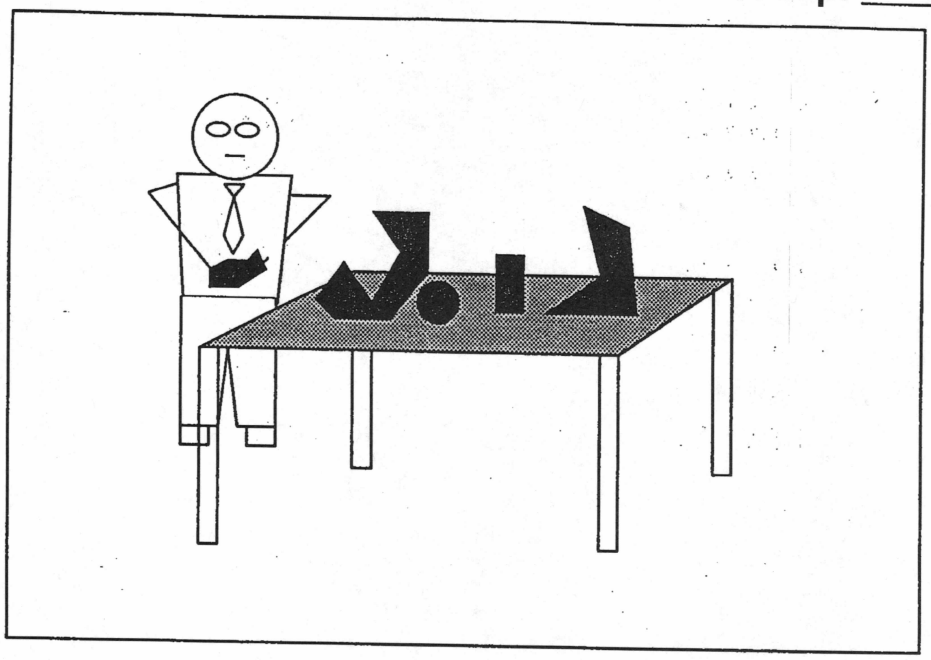
The key constraints on this production are as follows:

1. **Time to produce: approximately 16 weeks**
   - coordinate our work effectively
   - try to modularize our work to respond to changes
2. **Customer: The Director of the FBI**
   - anticipate interaction with the FBI
3. **Likely ultimate audience: The general public**
   - unclassified product
   - produce for the 'layman', not for the expert

db_5Mar97

C05784359

C05784359**ıe #:** _____ **Group:** WRECK1



ACROPOLIS

Title: Wreckage on table

Video:
- ☐ Still
- ☑ Video
- ☐ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

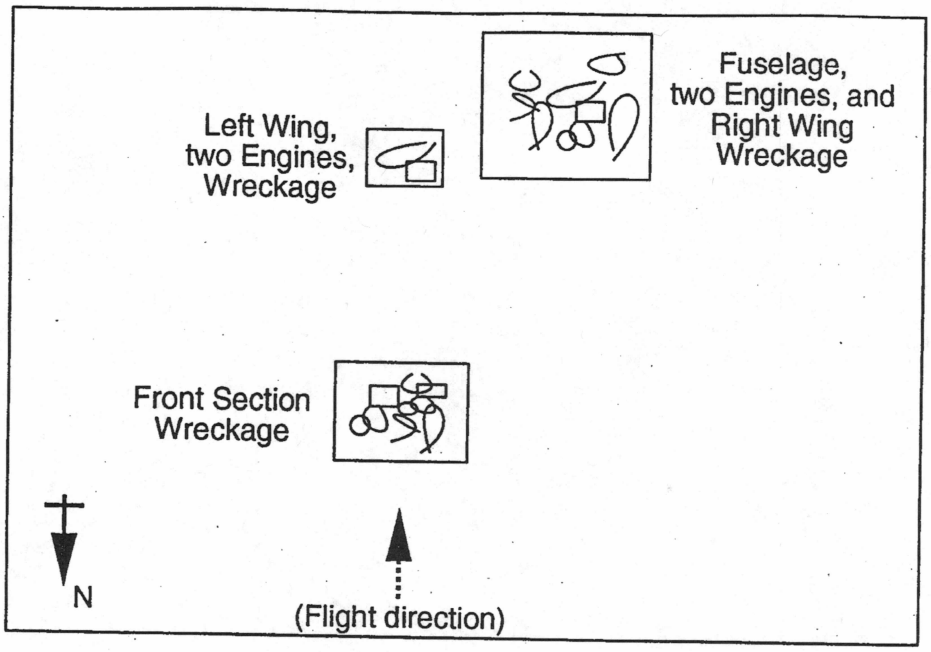
Description:

Medium shot of wreckage on table

db_5Mar97

000535

C05784359 File #: _____ Group: WRECK3



Title: Wreckage locations

Video:
- [x] Still
- [ ] Video
- [ ] 2D Animation
- [ ] 3D Animation

Audio:
- [ ] None
- [ ] Music
- [x] Narration
- [ ] Site Sound

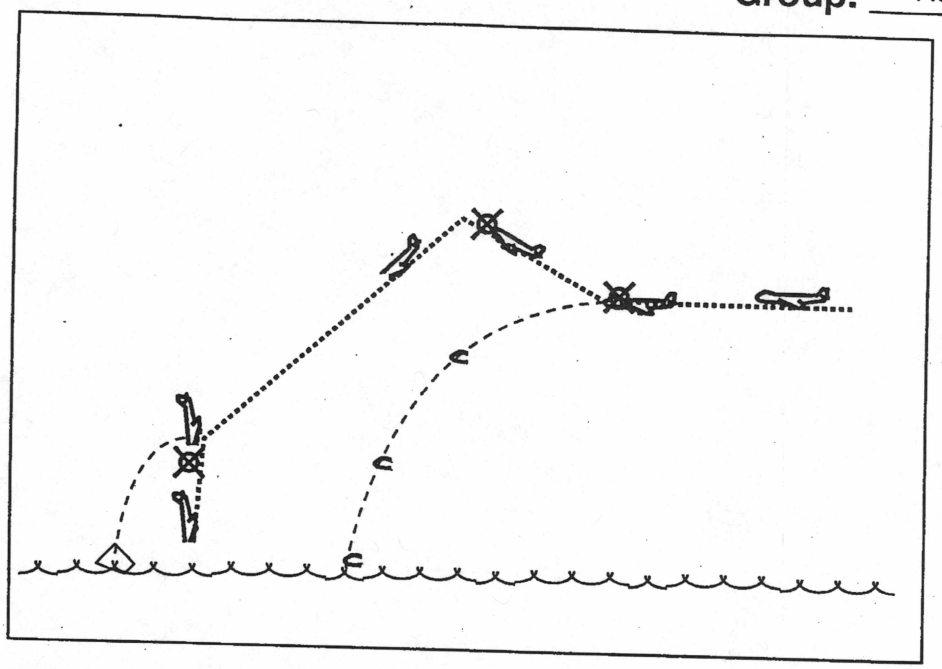
Description:

db_5Mar97

000536

C05784359 ne #: _____

Group: Reconst1



Title: Primary event reconstruction

Video:
- ☐ Still
- ☐ Video
- ☐ 2D Animation
- ☑ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

Description:

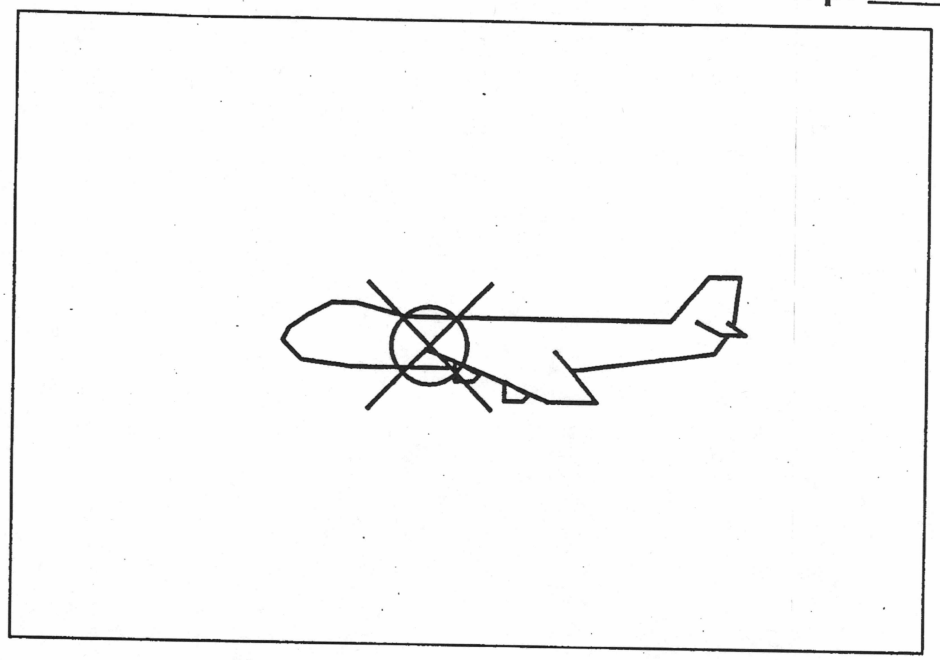
May include segmented shots with close–ups and slow–motion shots

May be repeated from different angles with different frame rates

May include a milestone bar, clock, altimiter, or other event guage

db_5Mar97

C05784359**le #:** _____ **Group:** Reconst2



Title: Reconstruction of first explosion

Video:
- ☐ Still
- ☐ Video
- ☐ 2D Animation
- ☑ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

Description:

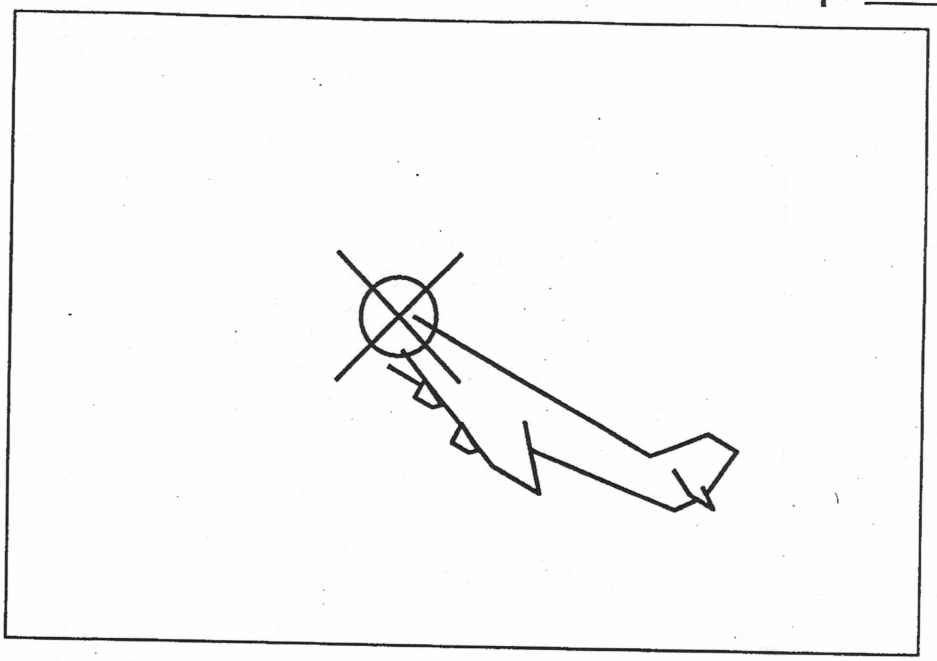
Will include break–away of front section

May be repeated from different angles with different frame rates

May include a milestone bar, clock, altimiter, or other event guage

db_5Mar97

C05784359 Title #: _____ Group: Reconst3



Title: Reconstruction of second explosion

Video:
- ☐ Still
- ☐ Video
- ☐ 2D Animation
- ☑ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

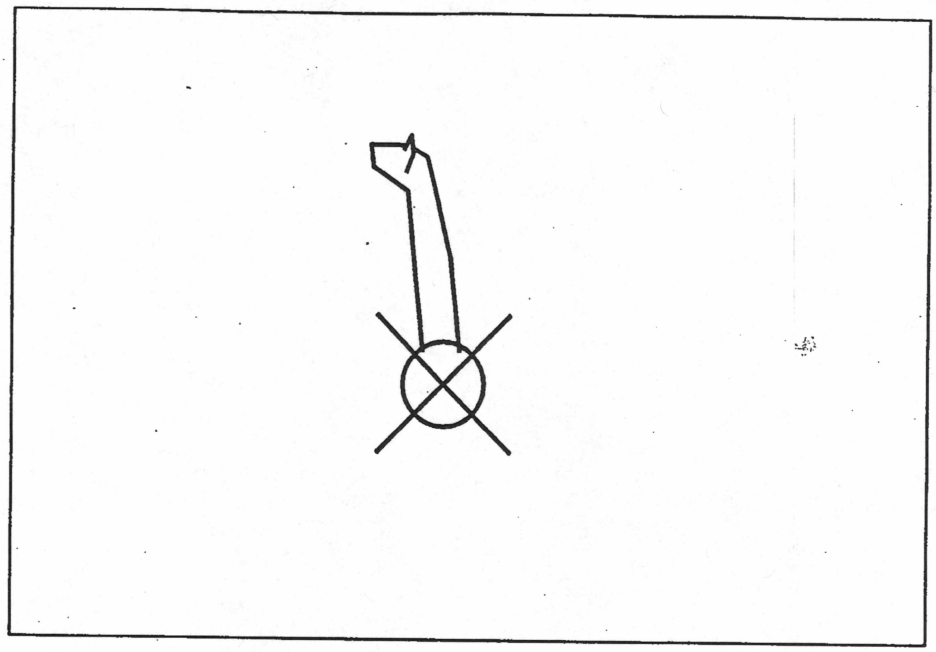
Description:

May be repeated from different angles with different frame rates

May include a milestone bar, clock, altimiter, or other event guage

db_5Mar97

C05784359**le #:** _____ **Group:** Reconst4



ACROPOLIS

Title: Reconstruction of 3rd explosion

Video:
- ☐ Still
- ☐ Video
- ☐ 2D Animation
- ☑ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

Description:

Will include wing separation

May be repeated from different angles with different frame rates

May include a milestone bar, clock, altimiter, or other event guage

db_5Mar97

000540

C05784359 IC #: _____ Group: _____

The organizations involved in this production wish to state their condolances to the families and friends of the victims of the TWA–800 crash:

Federal Bureau of Investigation
- Department of XXX

National Transportation Safety Board
- Department of XXX

Federal Aviation Administration
- Department of XXX

Central Intelligence Agency
- Office of Weapons Technology and Proliferation
- Office of XXX

ACROPOLIS

Title: Credits

Video:
- ☐ Still
- ☐ Video
- ☐ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☐ Narration
- ☐ Site Sound

Description:

db_5Mar97

C05784359 **e #:** _____ **Group:** INTRO8

The TWA–800 Crash

Understanding Witness Observations

ACROPOLIS

Title: Text Introduction

Video:
- [x] Still
- [ ] Video
- [ ] 2D Animation
- [ ] 3D Animation

Audio:
- [x] None
- [ ] Music
- [ ] Narration
- [ ] Site Sound

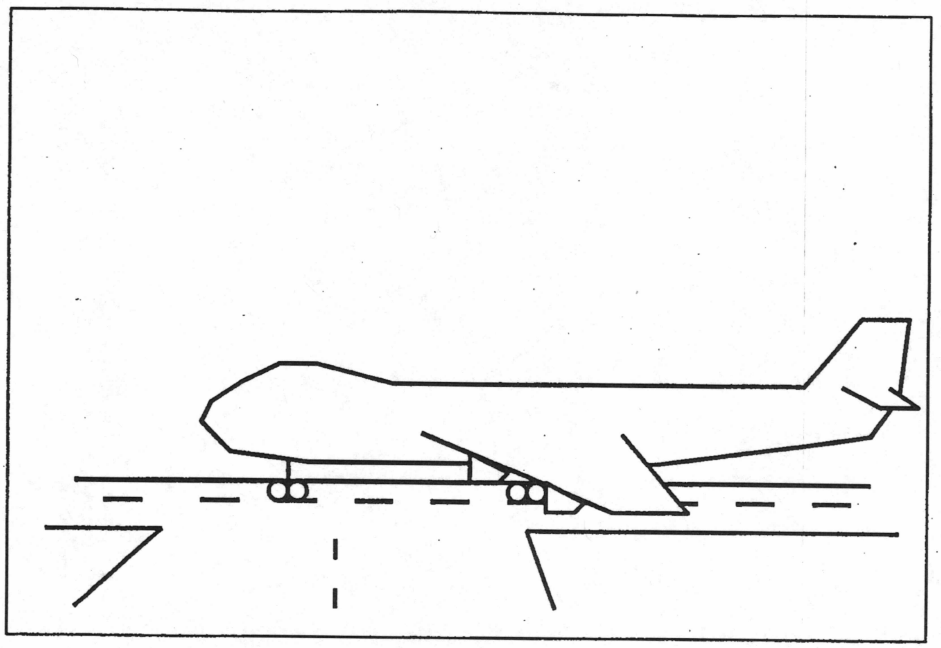
Description:

db_5Mar97

000542

C05784359

Scene #: _____ Group: INTRO1



ACROPOLIS

Title: 747 taxiing down runway

Video:
- ☐ Still
- ☑ Video
- ☐ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☑ Site Sound

Description:

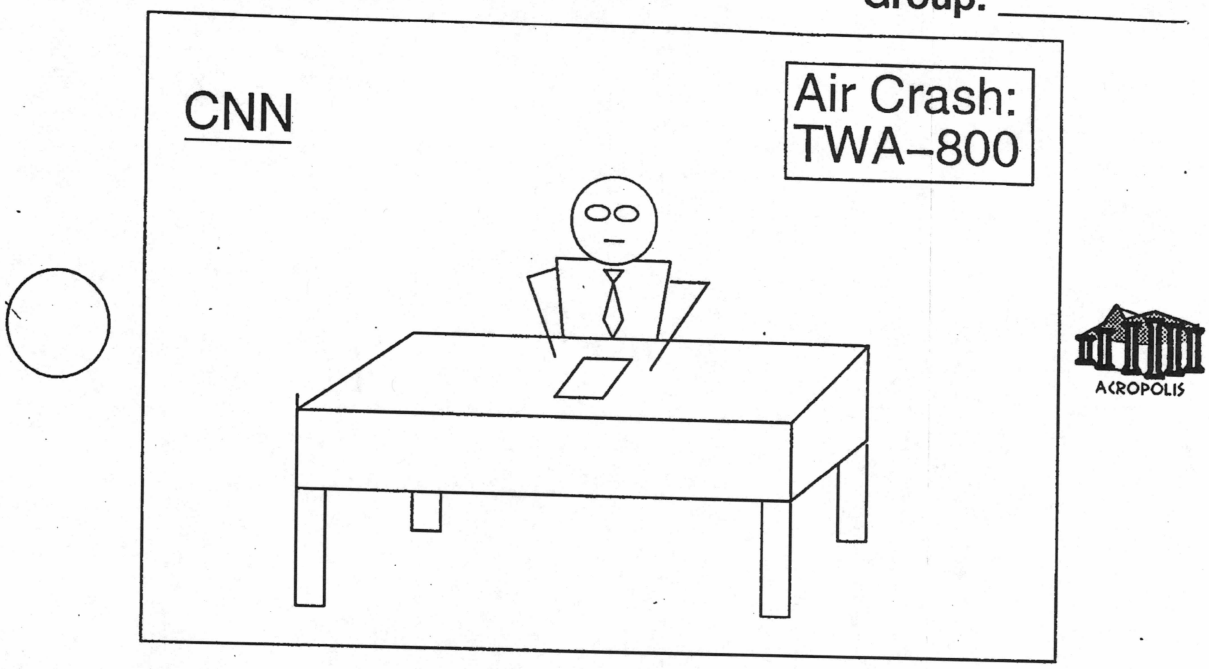
747 taxiing down the runway, getting ready to take off, sound of engines revving. Voice over of narrator.

Should be a TWA 747. Should be JFK airport.

db_5Mar97

000543

C05784359 **Scene #:** _____ **Group:** _____



Title: CNN announcement of TWA–800 crash

Video:
- ☐ Still
- ☑ Video
- ☐ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☑ Site Sound

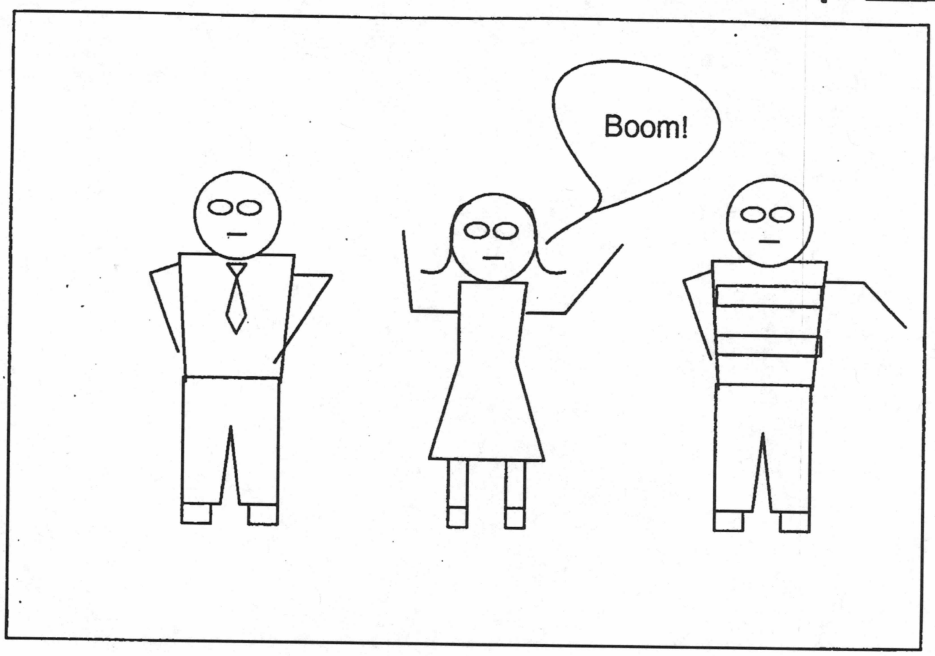
Description:

CNN announcement of TWA–800 crash. Voice–over of narration after announcement

db_5Mar97

000544

C05784359 **e #:** _____ **Group:** _____



ACROPOLIS

Title: Excited group

Video:
- ☐ Still
- ☑ Video
- ☐ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☑ Site Sound

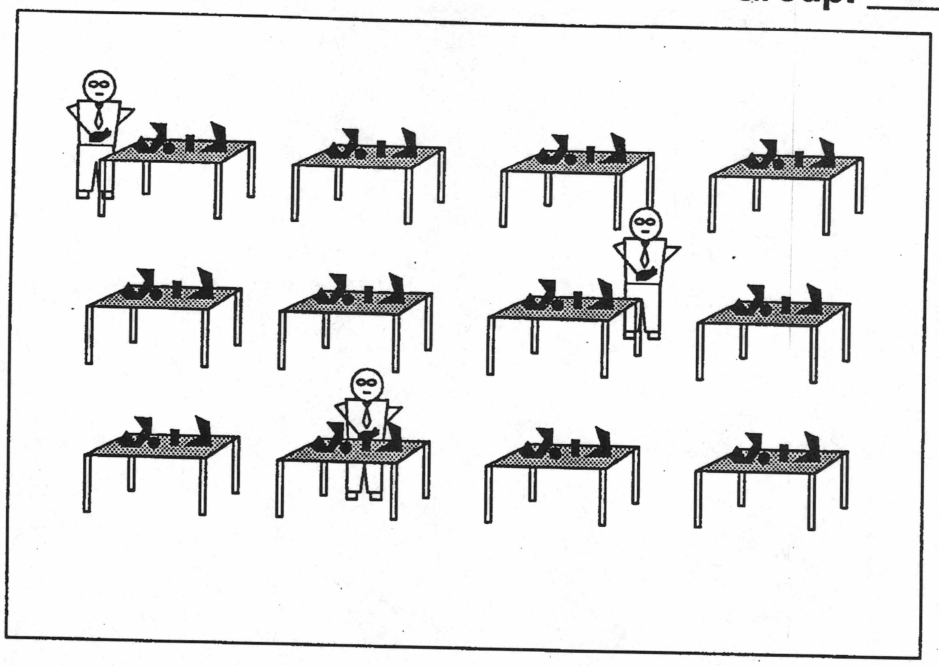
Description:

Excited group of people talking about the crash (perhaps outside the JFK TWA Check–in counter)

db_5Mar97

000545

C05784359**ne #:** _____ **Group:** WRECK2



ACROPOLIS

Title: Wreckage in warehouse

Video:
- ☐ Still
- ☑ Video
- ☐ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☐ Site Sound

Description:

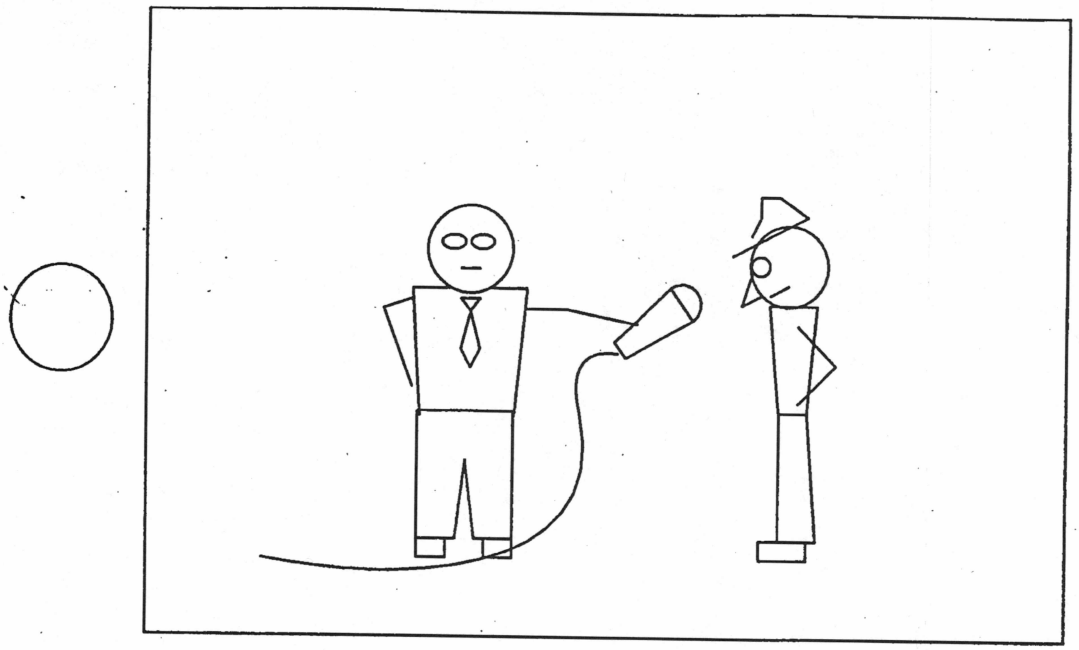
Long shot of wreckage in the warehouse

db_5Mar97

000546

C05784359

Scene #: _____ Group: INTERVW1



Title: 'If you can't explain...' interview

Video:
- ☐ Still
- ☑ Video
- ☐ 2D Animation
- ☐ 3D Animation

Audio:
- ☐ None
- ☐ Music
- ☑ Narration
- ☑ Site Sound

Description:

db_5Mar97

000547

e [1]
48:9
eyesight [1]
76:15
eyewitness [48]
2:22; 3:20; 9:15; 11:19; 13:9; 17:21; 18:13, 17, 20; 23:18; 25:1, 2, 11; 26:4, 9; 28:11; 29:15, 20; 37:18; 40:7, 12; 41:15; 42:14; 43:6, 7; 44:6; 46:19; 50:22; 51:1; 55:1, 20; 63:15, 17; 65:2, 8; 67:7, 13, 14; 68:2, 15; 70:9; 78:9, 14; 80:6, 8; 81:17; 82:7, 20
eyewitnesses [77]
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– F –

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39:7
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13:1; 26:19; 30:6; 47:5; 48:4; 56:14
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25:10
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32:22
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7:1; 79:7
federal [2]
3:12, 17
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16:6
feeling [2]
39:19; 62:7
feet [6]
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25:21; 35:21; 47:14, 15
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1:7
figured [1]
70:4
files [1]
75:8
final [2]
31:17; 64:10
find [4]
22:3; 62:9, 14; 78:8
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11:12
fine [3]
38:15; 40:20; 54:10
finish [1]
23:13
finished [1]
33:2
fire [14]
24:8, 12; 36:17, 19, 21; 37:6, 7, 9, 10; 39:8; 44:7; 47:5; 55:14; 69:14
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13:1, 4; 19:12; 23:7, 9, 19; 24:2, 9; 25:9, 20; 27:4; 29:2; 30:5, 22; 31:3, 6, 14; 38:6; 39:22; 46:8, 9, 13, 18; 47:1, 2, 4; 49:15; 55:9; 63:15; 78:14, 17
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75:16
firework [9]
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32:4
fireworks [3]
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flag [2]
51:17, 19
flame [1]
34:7
flames [1]
37:3
flare [1]
12:22
flare-like [1]
18:14
flies [1]
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C05782958

CLASSIFICATION

(b)(3)

EXECUTIVE CORRESPONDENCE ROUTING SHEET

1. CONTROL NUMBER: OWTP-018-97

2. SUSPENSE DATE:

3. SUBJECT: ACTION: Request for Signature re FBI query: "Was a Missile Used to Shoot Down TWA Flight 800?"

4. ORIGINATION OFFICE:

5. DATE: 21 March 97

6. PURPOSE: IMMEDIATE -- ADCI Signature is requested on the attached letter to the Director of the Federal Bureau of Investigation concerning CIA analysis of TWA Flight 800 "missile theory."

7. SUMMARY: CIA analysts, working closely with FBI special agents, have concluded that a missile was not used to shoot down TWA Flight 800. Letter and talking points are attached.

8. COORDINATION:

APPROVED FOR RELEASE DATE: 19-Mar-2012

9. RECOMMENDATION: We recommend that the ADCI sign and send the attached letter to FBI Director Louis J. Freeh. Because of the current press interest in this subject, the ADCI may as an alternative wish to telephone the FBI Director (talking points attached).

10. DATE IN	11. ROUTE TO	12. ACTION (Check a Box)	13. NONCONCUR REASON	14. DATE OUT
	TITLE C/ OWTP SIGNATURE	☐ SIGNATURE ☒ CONCUR ☐ FYI		
	TITLE D/OWTP SIGNATURE	☒ SIGNATURE ☐ CONCUR ☐ FYI		
	TITLE DDI SIGNATURE	☐ SIGNATURE ☒ CONCUR ☐ FYI		
	TITLE EXDIR SIGNATURE	☐ SIGNATURE ☒ CONCUR ☐ FYI		
	TITLE ADCI/MS SIGNATURE	☐ SIGNATURE ☒ CONCUR ☐ FYI		
	TITLE ADCI SIGNATURE	☒ SIGNATURE ☐ CONCUR ☐ FYI		
	TITLE SIGNATURE	☐ SIGNATURE ☐ CONCUR ☐ FYI		
	TITLE SIGNATURE	☐ SIGNATURE ☐ CONCUR ☐ FYI		

FORM 8/96 **4468**

CLASSIFICATION

CL BY:
CL REASON:
DECL ON:
DRV FRM:

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Second, many eyewitnesses described only things happening within about 10 seconds of the time that the left wing detached from the fuselage. This was a very well-defined event, resulting in two distinct fireballs falling to the ocean. The left wing is known to have detached about 42 seconds after the initial explosion.

And third, many eyewitnesses described only things happening within about 10 seconds of the time that they observed a large fire or "cascading" flames. These flames could only be from the burning fuel released and ignited after the left wing detached.

Using the above process of elimination, the majority of observations can be demonstrated to have occurred well after the initial explosion. Consequently, none of these observations can be of a missile which caused this explosion.

The remaining eyewitness accounts describe events fully consistent with observations expected if only the aircraft in various stages of crippled flight were being observed. There is nothing in this last category of eyewitness statements that provides any evidence that a missile was used to shoot down Flight 800.

Indeed, several eyewitnesses, confident that they had seen a missile destroy an aircraft, were puzzled that they hadn't actually seen the aircraft before the missile hit it. Only a few eyewitnesses described seeing the aircraft at all, even though it should have been illuminated by the setting sun and clearly visible to any observer witnessing a missile approach and destroy it. The fact that only a few eyewitnesses reported seeing the aircraft—which should have been readily visible—suggests that many eyewitnesses may have seen only the crippled aircraft without realizing it.

Conclusions

CIA analysts do not believe that a missile was used to shoot down TWA Flight 800. To date, there is absolutely no evidence, physical or otherwise, that a missile was employed.

Speculation that a missile was involved originally was put forward based totally on the testimony of eyewitnesses who were attempting to assist the Federal Bureau of Investigation and National Transportation Safety Board as these agencies probed into the possible causes of the tragedy. Without the assistance of these eyewitnesses, the accounting given here would not have been possible.

000550

Was a Missile Used to Shoot Down TWA Flight 800?

CIA missile analysts, working closely with FBI special agents, have concluded that a missile almost certainly was not used to shoot down TWA Flight 800.

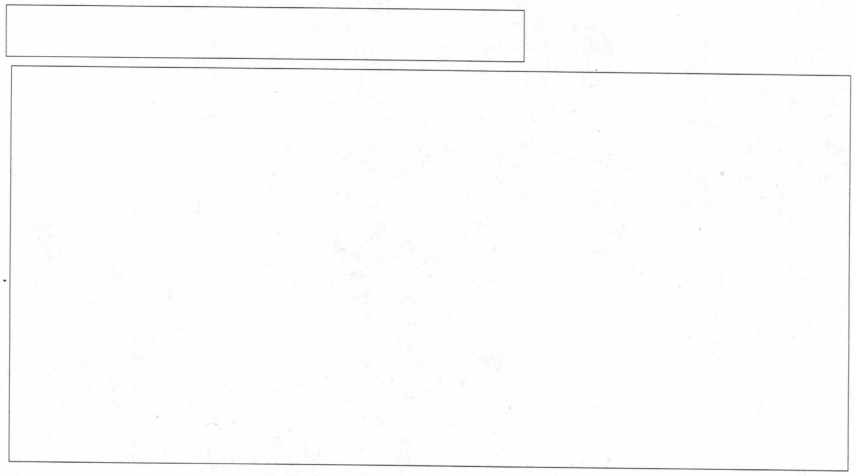
- This analysis was based on:
  - -- almost two hundred eyewitness reports
  - -- radar data
  - -- satellite infrared data
  - -- information provided by the National Transportation Safety Board from Flight 800's "cockpit voice recorder" and "flight data recorder"
  - -- sound propagation analysis

- To date, there is absolutely no evidence, physical or otherwise, that a missile was used. Speculation that a missile was involved originally was put forward based totally on the testimony of eyewitnesses who were attempting to assist the Federal Bureau of Investigation and National Transportation Safety Board as these agencies probed into the possible causes of the tragedy.

- We can demonstrate that the eyewitness sightings of greatest concern to us—the ones originally interpreted to be of a possible missile attack—took place after the first of several explosions aboard the aircraft. There is absolutely no evidence that any "missile" sighting occurred before Flight 800 exploded.

- CIA analysts are confident that what the eyewitnesses saw was in fact the aircraft itself in various stages of crippled flight, not a missile.

SUBJECT: Was a Missile Used to Shoot Down TWA Flight 800?



C05782958

OWTP-018-97

MEMORANDUM FOR: Acting Director of Central Intelligence

VIA: Associate Director of Central Intelligence for Military Support
Executive Director, CIA
Deputy Director for Intelligence

FROM: Christopher M. Holmes
Director of Weapons, Technology and Proliferation, DI

SUBJECT: Letter to Louis J. Freeh, Director of the Federal Bureau of Investigation

1. Action Requested: That you sign the attached letter to FBI Director Louis J. Freeh addressing CIA's conclusion that a missile was not used to shoot down TWA Flight 800. (Talking points are included should you decide that a telephone call to the FBI Director would be more expedient.)

2. Background: At the request of the FBI, missile analysts at the CIA have been working closely with special agents at the FBI during the past eight months to examine the hypothesis that a missile caused the TWA Flight 800 disaster on 17 July. The missile theory springs from an unusually large number of credible eyewitness accounts. Of particular concern to FBI investigators and CIA analysts, dozens of eyewitnesses reported seeing that evening an object—usually described as a "flare" or "firework"—ascend and culminate in an explosion. Many people have postulated that these eyewitnesses saw a missile destroy the aircraft. Our detailed technical analysis demonstrates that what these eyewitnesses almost certainly saw was, in fact, the crippled aircraft after the first of several onboard explosions...not a missile.

SUBJECT: Letter to Louis J. Freeh, Director of the Federal Bureau of Investigation

3. There is absolutely no evidence that any "missile" sighting occurred before Flight 800 exploded. This fact, combined with the complete lack of physical evidence of a missile attack, leads CIA analysts to conclude that no such attack occurred.

Christopher M. Holmes

Attachments:
As stated

000554

SUBJECT: Letter to Louis J. Freeh, Director of the Federal Bureau of Investigation

[redacted] (19 Mar 97)

[redacted]

C05782958

The Honorable Louis J. Freeh
Director
Federal Bureau of Investigation
950 Pennsylvania Avenue NW
Washington, DC 20535-0001

Dear Mr. Freeh:

As you are aware, missile analysts at the Central Intelligence Agency have been working closely with special agents at the Federal Bureau of Investigation during the past eight months in an attempt to examine the hypothesis that a missile caused the TWA Flight 800 disaster on 17 July. Of particular concern to FBI investigators and CIA analysts, dozens of eyewitnesses reported seeing on the evening of 17 July an object—usually described as a "flare" or "firework"—ascend and culminate in an explosion.

Our analysis demonstrates that the eyewitness sightings of greatest concern to us—the ones originally interpreted to be of a possible missile attack—took place after the first of several explosions aboard the aircraft. We conclude that almost certainly what these eyewitnesses saw was the crippled aircraft after the first explosion had already taken place.

Our analysis, combined with the total absence of physical evidence of a missile attack, leads CIA analysts to conclude that no such attack occurred.

We are willing to brief you on the details of our analysis at your convenience.

Sincerely,

George J. Tenet
Acting Director of Central Intelligence

Enclosure:
Background Material

000556

Letter to Mr. Louis J. Freeh

[redacted] (18 Mar 97)

[redacted]

Background:

Introduction

On 17 July 1996, Trans World Airlines Flight 800 departed from New York's John F. Kennedy Airport enroute to Paris. Twelve minutes into the flight, as the jumbo jet climbed to its cruising altitude, there was a catastrophic explosion and the Boeing 747 plunged into the Atlantic Ocean 9 miles off the coast of Long Island. All 230 people aboard perished, making it one of the most lethal disasters in commercial aviation history. Hundreds of eyewitnesses in the Long Island area witnessed portions of the event.

Since then, investigators have been working continuously seeking the cause of the explosion. They have focused on three possible causes...a bomb, a missile, or a mechanical failure. Of particular concern to FBI investigators and CIA analysts, dozens of eyewitnesses reported seeing on the evening of 17 July an object—usually described as a "flare" or "firework"—ascend and culminate in an explosion. Many people postulated that these eyewitnesses saw a missile destroy the aircraft.

At the request of the FBI, CIA weapons analysts were asked to look into this possibility. The CIA conclusion: A missile was not involved. The eyewitness sightings of greatest concern—the ones originally interpreted to be of a possible missile attack—took place after the first of several explosions aboard the aircraft. What these eyewitnesses saw was in fact the crippled aircraft after the first explosion had already taken place.

Analysis

A major complication in determining what happened to Flight 800 was the fact that the "flight data recorder" and "cockpit voice recorder" ceased operating just after the initial explosion aboard the aircraft. The data recorder registered no unusual activity prior to the end of its operation. But the voice recorder registered a fraction of a second of "loud noise" just before it ceased operating. National Transportation Safety Board analysts concluded that this was sound from the first explosion—the one that initiated the destruction of the aircraft.

Based on flight recorder data and airport radar tracking, the aircraft's location, altitude, speed and heading at the instant its recorders ceased operating are known. This information was used to determine the distance and direction of travel of the aircraft with respect to each eyewitness at the instant the aircraft exploded. This, in turn, made it possible

to calculate how long it took sound from the explosion to reach each eyewitness...and to associate what eyewitnesses heard with what they saw.

The concept used here is similar to a technique a person can use to determine how far away a lightning strike is...by estimating how long it takes to hear thunder after the lightning is seen. Because sound in air travels about 1,100 feet per second, an observer who hears thunder five seconds after seeing a lightning strike knows that the lightning is about 1 mile away.

On the evening of 17 July, many eyewitnesses reported hearing a loud "boom" as part of their observations, often followed at varying intervals by one or two smaller "booms." Knowing that the first of these sounds originated when the recorders ceased operating...831:07.5 PM...it was possible to synchronize many eyewitnesses' visual observations with activity aboard Flight 800 by calculating how long it took sound to travel from the known location of the aircraft when it exploded to each of these eyewitnesses.

We can be confident that no sound from the aircraft audible to eyewitnesses was produced before the sound heard at the end of the cockpit voice recording. The closest eyewitness hearing such sounds was more than 8 miles away. Any sound heard at this distance and produced near the aircraft before the recording ended would have been recorded.

Using the eyewitnesses' visual and sound observations—combined with tracking data from the radars and infrared data from an intelligence sensor—CIA analysts were able to reconstruct the approximate path of Flight 800 from the instant its recordings ended until it hit the water. The following postulated sequence of events is based on that analysis:

Just after the initial explosion at 831:07.5 PM, the aircraft pitched up abruptly and climbed several thousand feet from its cruise altitude of 13,800 feet to a maximum altitude of about 17,000 feet. This is consistent with information provided by National Transportation Safety Board and Boeing engineers indicating that the front third of the aircraft, including the cockpit, separated from the fuselage just two to four seconds after the initial explosion. This significant sudden loss of mass from the front of the aircraft caused the rapid pitch-up.

The initial explosion was not seen by any known eyewitness. But the subsequent fire trailing from the aircraft was clearly visible to many of the closest eyewitnesses on the land and sea, and some of the eyewitnesses in other aircraft. The rising, burning aircraft is consistent with

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what some eyewitnesses described as "an ascending, bright white light resembling a flare or firework."

Shortly after Flight 800 reached the apex of its ascent—about 15 seconds or so after the initial explosion—a second explosion on the aircraft occurred. This explosion was clearly visible to many eyewitnesses, and often was described as "a small fireball." It was not as loud as the initial explosion, but was clearly audible more than 10 miles away.

Following this second explosion, the aircraft went into a very steep and rapid descent, falling 2 miles and traveling horizontally almost 2 miles in less than 25 seconds. As the aircraft descended, it produced an increasingly visible fire trail. When it reached an altitude of about 1 mile—42 seconds after the initial onboard explosion—the aircraft's left wing separated from the fuselage, releasing the unburned fuel in the left wing's fuel tanks. The fuel's subsequent ignition and burning produced a dramatic fireball visible to eyewitnesses more than 40 miles away...and detected by an infrared sensor

About 50 seconds after the initial explosion—8 seconds after the left wing detached—the aircraft and detached wing hit the water.

Analysts developed the characterization above using technical data and accounts from the few eyewitnesses who were relatively close to the disaster, and who provided detailed descriptions of what they saw and heard. This portrayal was then evaluated against descriptions provided by almost 200 additional eyewitnesses.

Not surprisingly, most eyewitnesses saw only the most conspicuous segment of the disaster...the ignition of the fuel and resulting fireball in the 10 seconds or so just before the aircraft hit the water. There are three distinctive characteristics analysts used to conclude that these eyewitnesses saw only the end of the aircraft's descent...and not a missile.

First, sound from the initial explosion took from 42 to 102 seconds to reach each of the eyewitnesses claiming to have heard sounds associated with the disaster. Therefore, things eyewitnesses reported seeing at about the time when they heard the first sound are known to have taken place well after the first explosion occurred.

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APPROVED FOR
RELEASE DATE:
19-Mar-2012

Central Intelligence Agency

Washington, D.C. 20505

28 MAR 1997

Mr. James K. Kallstrom
Assistant Director in Charge
Federal Bureau of Investigation
26 Federal Plaza
New York, New York 10278

Dear Mr. Kallstrom:

As you are aware, missile analysts at the Central Intelligence Agency have been working closely with special agents at the Federal Bureau of Investigation during the past eight months in an attempt to examine the hypothesis that a missile caused the TWA Flight 800 disaster on 17 July. Of particular concern to FBI investigators and CIA analysts are accounts from dozens of eyewitnesses who reported seeing an object—usually described as a "flare" or "firework"—ascend and culminate in an explosion.

Our analysis demonstrates that the eyewitness sightings of greatest concern to us—the ones originally interpreted to be of a possible missile attack—took place after the first of several explosions aboard the aircraft. We conclude that almost certainly what these eyewitnesses saw was the crippled aircraft after the first explosion had already taken place.

Our analysis, combined with the total absence of physical evidence of a missile attack, leads CIA analysts to conclude that no such attack occurred.

We are willing to brief you on the details of our analysis at your convenience.

Sincerely,

/S/
John C. Gannon
Deputy Director for Intelligence

Enclosure:
Analytic Assessment

000562

Letter to Mr. James K. Kallstrom

[redacted] (18 Mar 97)

[redacted]

000563

Introduction

On 17 July 1996, Trans World Airlines Flight 800 departed from New York's John F. Kennedy Airport enroute to Paris. Twelve minutes into the flight, as the jumbo jet climbed to its cruising altitude, there was a catastrophic explosion and the Boeing 747 plunged into the Atlantic Ocean 9 miles off the coast of Long Island. All 230 people aboard perished, making it one of the most lethal disasters in commercial aviation history. Hundreds of eyewitnesses in the Long Island area witnessed portions of the event.

Since then, investigators have been working continuously seeking the cause of the explosion. They have focused on three possible causes—a bomb, a missile, or a mechanical failure. Of particular concern to FBI investigators and CIA analysts are accounts from dozens of eyewitnesses who reported seeing an object—usually described as a "flare" or "firework"—ascend and culminate in an explosion. Many people postulated that these eyewitnesses saw a missile destroy the aircraft.

At the request of the FBI, CIA weapons analysts were asked to look into this possibility. The CIA conclusion: A missile was not involved. The eyewitness sightings of greatest concern—the ones originally interpreted to be of a possible missile attack—took place after the first of several explosions aboard the aircraft. What these eyewitnesses saw was in fact the crippled aircraft after the first explosion had already taken place.

Analysis

A major complication in determining what happened to Flight 800 was the fact that the flight data recorder and cockpit voice recorder ceased operating just after the initial explosion aboard the aircraft. The data recorder registered no unusual activity prior to the end of its operation. But the voice recorder registered a fraction of a second of "loud noise" just before it ceased operating. National Transportation Safety Board analysts concluded that this was sound from the first explosion—the one that initiated the destruction of the aircraft.

Based on flight recorder data and airport radar tracking, the aircraft's location, altitude, speed and heading at the instant its recorders ceased operating are known. This information was used to determine the distance and direction of travel of the aircraft with respect to each eyewitness at the instant the aircraft exploded. This, in turn, made it possible

to calculate how long it took sound from the explosion to reach each eyewitness, and to associate what eyewitnesses heard with what they saw.

The concept used here is similar to a technique a person can use to determine how far away a lightning strike is—by estimating how long it takes to hear thunder after the lightning is seen. Because sound in air travels about 1,100 feet per second, an observer who hears thunder five seconds after seeing a lightning strike knows that the lightning is about 1 mile away.

On the evening of 17 July, many eyewitnesses reported hearing a loud "boom" as part of their observations, often followed at varying intervals by one or two smaller "booms." Knowing that the first of these sounds originated when the recorders ceased operating (831:07.5 PM), it was possible to synchronize many eyewitnesses' visual observations with activity aboard Flight 800 by calculating how long it took sound to travel from the known location of the aircraft when it exploded to each of these eyewitnesses.

We can be confident that no sound from the aircraft audible to eyewitnesses was produced before the sound heard at the end of the cockpit voice recording. The closest eyewitness hearing such sounds was more than 8 miles away. Any sound heard at this distance and produced near the aircraft before the recording ended would have been recorded.

Using the eyewitnesses' visual and sound observations—combined with tracking data from the radars and infrared data from an intelligence sensor—CIA analysts were able to reconstruct the approximate path of Flight 800 from the instant its recordings ended until it hit the water. The following postulated sequence of events is based on that analysis:

> Just after the initial explosion at 831:07.5 PM, the aircraft pitched up abruptly and climbed several thousand feet from its cruise altitude of 13,800 feet to a maximum altitude of about 17,000 feet. This is consistent with information provided by National Transportation Safety Board and Boeing engineers indicating that the front third of the aircraft, including the cockpit, separated from the fuselage just two to four seconds after the initial explosion. This significant sudden loss of mass from the front of the aircraft caused the rapid pitch-up.
>
> The initial explosion was not seen by any known eyewitness. But the subsequent fire trailing from the aircraft was clearly visible to many of the closest eyewitnesses on the land and sea, and some of the eyewitnesses in other aircraft. The rising, burning aircraft is consistent with what some eyewitnesses described as "an ascending, bright white light resembling a flare or firework."

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Shortly after Flight 800 reached the apex of its ascent—about 15 seconds or so after the initial explosion—a second explosion on the aircraft occurred. This explosion was clearly visible to many eyewitnesses, and often was described as "a small fireball." It was not as loud as the initial explosion, but was clearly audible more than 10 miles away.

Following this second explosion, the aircraft went into a very steep and rapid descent, falling 2 miles and traveling horizontally almost 2 miles in less than 25 seconds. As the aircraft descended, it produced an increasingly visible fire trail. When it reached an altitude of about 1 mile—42 seconds after the initial onboard explosion—the aircraft's left wing separated from the fuselage, releasing the unburned fuel in the left wing's fuel tanks. The fuel's subsequent ignition and burning produced a dramatic fireball visible to eyewitnesses more than 40 miles away, and detected by an infrared sensor

About 50 seconds after the initial explosion—eight seconds after the left wing detached—the aircraft and detached wing hit the water.

CIA analysts developed the characterization above using technical data and accounts from the few eyewitnesses who were relatively close to the disaster, and who provided detailed descriptions of what they saw and heard. This portrayal then was evaluated against descriptions provided by almost 200 additional eyewitnesses.

Not surprisingly, most eyewitnesses saw only the most conspicuous segment of the disaster—the ignition of the fuel and resulting fireball in the 10 seconds or so just before the aircraft hit the water. There are three distinctive characteristics analysts used to conclude that these eyewitnesses saw only the end of the aircraft's descent and not a missile.

First, sound from the initial explosion took from 42 to 102 seconds to reach each of the eyewitnesses claiming to have heard sounds associated with the disaster. Therefore, things eyewitnesses reported seeing at about the time when they heard the first sound are known to have taken place well after the first explosion occurred.

Second, many eyewitnesses described only things happening within about 10 seconds of the time that the left wing detached from the fuselage. This was a very well-defined event, resulting in two distinct fireballs falling to the ocean. The left wing is known to have detached about 42 seconds after the initial explosion.

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And third, many eyewitnesses described only things happening within about 10 seconds of the time that they observed a large fire or "cascading" flames. These flames could only be from the burning fuel released and ignited after the left wing detached.

Using the above process of elimination, the majority of observations can be demonstrated to have occurred well after the initial explosion. Consequently, none of these observations can be of a missile which caused this explosion.

The remaining eyewitness accounts describe events fully consistent with observations expected if only the aircraft in various stages of crippled flight were being observed. There is nothing in this last category of eyewitness statements that provides any evidence that a missile was used to shoot down Flight 800.

Indeed, several eyewitnesses, confident that they had seen a missile destroy an aircraft, were puzzled that they hadn't actually seen the aircraft before the missile hit it. Only a few eyewitnesses described seeing the aircraft at all, even though it should have been illuminated by the setting sun and clearly visible to any observer witnessing a missile approach and destroy it. The fact that only a few eyewitnesses reported seeing the aircraft—which should have been readily visible—suggests that many eyewitnesses may have seen only the crippled aircraft without realizing it.

Conclusions

CIA analysts do not believe that a missile was used to shoot down TWA Flight 800. To date, there is absolutely no evidence, physical or otherwise, that a missile was employed.

Speculation that a missile was involved originally was put forward based totally on the testimony of eyewitnesses who were attempting to assist the Federal Bureau of Investigation and National Transportation Safety Board as these agencies probed into the possible causes of the tragedy. Without the assistance of these eyewitnesses, the accounting given here would not have been possible.

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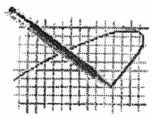

1 April 1997

To
cc
bcc
Subject TWA Flight 800

here is the method in a few sentences. If you would like a more in-depth one please let me know.

The TWA 800 Team determined that the eyewitnesses to the TWA Flight 800 disaster, could not have seen a missile hit the aircraft. By analyzing and correlating eyewitness observations (sight and sound), we were able to "reconstruct" the Boeing 747's flight path. By comparing each eyewitness report with the reconstructed TWA Flight 800 flight path, we were able to show that all the eyewitnesses' observations were *after* the initial explosion. Since the eyewitnesses did not observe things prior to the explosion which ultimately destroyed the aircraft, they could not have seen a missile strike the aircraft.

The TWA 800 Team has worked closely with the FBI Special Agents and out of the New York branch. The TWA 800 Team is also cooperating with Sandia Labs, who were brought in by the FBI Special Agents to review our results. Finally, the FAA continues to monitor the TWA Flight 800 investigation. (Left out is the NTSB who we don't really work with but who are kept informed by the FBI).

The unique contribution brought out by CIA analysts is to use the eyewitness observations as data to reconstruct the aircraft's flight profile. The eyewitness reports have been available for some time, but the investigating agencies did not believe there was sufficient data in them for any meaningful results (and have spent millions in producing new data from debris, structures, and aircraft tests). Instead, they interpreted the observations as missile attacks only (although the eyewitnesses do not say they see a missile attack). I think that the experience of CIA analysts in using all available information, identifying/correlating evidence from multiple sources, and tying it all together was instrumental in producing the final results.

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APPROVED FOR
RELEASE DATE:
19-Mar-2012

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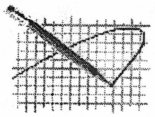
(b)(6)



04/10/1997 02:23 PM

To
cc
bcc

Subject TIF.PPT File TWA 800 Photo

..Could you please Lotus me a TIF.PPT file of the picture showed us yesterday (the TWA 800 eyewitness view from the bridge on Beach Lane) without the superimposed image of the aircraft? I'm going to print out several copies and Express Mail them to at the FBI. will ask the eyewitness to draw what he thinks he saw on top of this picture, and then we can incorporate the eyewitness drawing into the video. (I'm going to send several copies in case the eyewitness needs to make a few "practice" drawings.)

If this technique works, we may attempt to get still images from other eyewitness locations and repeat the procedure.

Also, please ask to make me a VHS videotape of the picture with the dynamic trajectory of the aircraft superimposed. We're going to use this in a briefing we'll be giving to the FBI folks next Tuesday. Also, if can make me a VHS videotape of his "sound propagation" animation, we'll use that in the briefing also.

Thanks again to you and your folks for all your help on this!!!.

P.S. --- I still can't get over how great this "animation" looks. I think our FBI "customers" are going to be quite pleased.

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[redacted] 04/10/1997 06:36 PM

To [redacted]
cc
bcc

Subject TWA 800 Eyewitness Lat/Longs

[redacted]..here are the numbers you requested for the eyewitness on the bridge on Beach Lane, Long Island.

Location of eyewitness (high confidence): N40 degrees, 48.037 minutes;
W72 degrees, 37.687 minutes.

Location of house to his right (west): N40 degrees, 47.946 minutes;
W72 degrees, 37.722 minutes.

Location of "middle" of house to his left (east): 19 degrees in azimuth east of the middle of the house to his right.

The initial aircraft explosion should be at an elevation angle of 13.23 degrees above the horizon (water) with respect to this eyewitness.

The azimuth to where the plane first exploded, from the perspective of this eyewitness, should be 196.23 degrees.

The azimuthal angle to where the plane was 14.5 seconds after the first explosion, from the perspective of this eyewitness, should be 190.75 degrees. (This reading, based on a radar point, should take place about 0.5 seconds before the second explosion, the one near the apex of the trajectory.)

The azimuth to where the plane hit the water, from the perspective of this eyewitness, should be 180.64 degrees.

The azimuthal angle between where the plane exploded and where it finally hit the water, from the perspective of this eyewitness, should be 196.23 - 180.64 = 15.59 degrees.

The total duration from when the plane first exploded to when it hit the water should be 50 seconds.

Hope this helps.

--- [redacted]

APPROVED FOR
RELEASE DATE:
19-Mar-2012

C05782660

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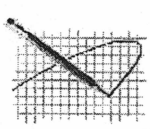

04/24/1997 12:07 AM

To

cc

bcc

Subject TWA 800 -Related Animation Geographic Coordinates

...I've finished calculating all the geographic coordinates (latitude, longitude, altitude and heading as a function of time) required to animate TWA Flight 800, USAir Flight 217, and the USAF P-3 from 25.3 seconds prior to the first explosion aboard TWA Flight 800 until Flight 800 hits the water. [As we discussed, I've intentionally omitted altitude estimates for TWA Flight 800 at the two radar points prior to water impact.] Let's get together when you get a chance and I'll give copies to whomever needs them.

APPROVED FOR
RELEASE DATE:
19-Mar-2012

Central Intelligence Agency

Washington, D.C. 20505

22 April 2014

Mr. John H. Clarke
2424 Pennsylvania Avenue, NW
Apartment 410
Washington, DC 20037

Reference: F-2013-02263

Dear Mr. Clarke:

This is a final response and acknowledges receipt of your 5 March 2014 letter, received in the office of the Information and Privacy Coordinator on 11 March 2014, providing your commitment to pay all applicable fees concerning your 8 November 2013 letter narrowing the scope of your request by limiting it for records that were not previously produced in Lahr v. National Transp. Safety Bd. Et al.

Please be advised that we have completed a thorough and diligent search on your behalf regarding the previous request as it pertains to the subject of your request above. Therefore, we are enclosing 68 documents, consisting of 1,133 pages, which we believe to be responsive to your request. These documents were located and released in connection with the earlier request. The cost associated with processing your request amounts to $113.30. This consists of reproduction of 1,133 pages at a rate of ten cents per page. You are responsible for the cost of processing your request for reproduction charges beyond the first 100 pages. Please send your check or money order in the amount of $103.30 payable to the **Treasurer of the United States** citing F-2013-02263 to ensure proper credit to your account.

Sincerely,

Michele Meeks
Information and Privacy Coordinator

Enclosures

C05784368

(b)(3)

~~ADMINISTRATIVE - INTERNAL USE ONLY~~

19 May 1997

MEMORANDUM FOR:

FROM:

APPROVED FOR RELEASE DATE: 30-Mar-2012

OFFICE: OSWR

SUBJECT: Re: Kallstrom Briefing on TWA 800

REFERENCE: see tasking...

19 May 1997

MEMORANDUM FOR:

FROM:

OFFICE: ODDI/FO

SUBJECT: Re: Kallstrom Briefing on TWA 800

REFERENCE: request for TPs

19 May 1997

MEMORANDUM FOR:

FROM:

OFFICE: ODDI/FO

~~ADMINISTRATIVE - INTERNAL USE ONLY~~

C05784368

~~ADMINISTRATIVE - INTERNAL USE ONLY~~

SUBJECT: Re: Kallstrom Briefing on TWA 800

REFERENCE:

Still attempting to move forward, could you pull together background para and some talking points that would be used by ADCI for calling Kallstrom... I thought EXDIR wanted to do, but as you can see she has kicked it up...

TO:
FROM: [redacted]
OFFICE: ODDI/FO
DATE: 05-19-97 09:46:12 AM
SUBJECT: Re: Kallstrom Briefing on TWA 800

[redacted]

Our folks in OTI would like someone on the seventh floor to call over to Kallstrom to push our briefing with him... John raised with Gen Gordan and he says to go ahead... [redacted] *Given the sensitivity in this case, does Nora want to make the call since he is de facto about number two in the FBI or should I get John to make the call to push the brief???*

The EXDIR says you should ask [redacted] to ask the ADCI about this, because before it was the ADCI who had wanted to make the call.

I gave [redacted] a heads-up that I would be sending you this note. She requests that you provide her some background for the ADCI's use should he decide to make the call himself--eg, basic thrust of briefing, how long the briefing will take, who from CIA will be there, etc.

CC: [redacted]

Sent on 19 May 1997 at 09:46:12 AM

CC:

Sent on 19 May 1997 at 10:39:32 AM

CC:

Sent on 19 May 1997 at 12:09:06 PM

~~ADMINISTRATIVE - INTERNAL USE ONLY~~

C05784368

~~ADMINISTRATIVE - INTERNAL USE ONLY~~

CC:

Sent on 19 May 1997 at 02:16:39 PM

~~ADMINISTRATIVE - INTERNAL USE ONLY~~

Our analysts have reviewed your request and are unable to determine what records you are seeking. For your information, the FOIA provides for public access to "reasonably described" records so that professional employees familiar with the subject matter can locate responsive information with a reasonable amount of effort. Commonly this equates to a requirement that the documents must be locatable through the indexing of our various systems. Extremely broad or vague requests or requests requiring research do not satisfy this requirement.

C05782960

~~FOR OFFICIAL USE ONLY~~

21 May 1997

(FOUO) Was a Missile Used to Shoot Down TWA Flight 800?

CIA missile analysts, working closely with FBI special agents, have concluded that a missile was not used to shoot down TWA Flight 800.

- This analysis was based on:
  - -- more than two hundred eyewitness reports
  - -- radar data
  - -- satellite infrared data
  - -- information provided by the National Transportation Safety Board from Flight 800's "cockpit voice recorder" and "flight data recorder"
  - -- sound propagation analysis
- To date, there is absolutely no evidence, physical or otherwise, that a missile was used. Initial speculation that a missile was involved was based totally on the testimony of eyewitnesses who were attempting to assist the Federal Bureau of Investigation and National Transportation Safety Board as these agencies probed into the possible causes of the tragedy.
- The eyewitness sightings of greatest concern to us—the ones originally interpreted to be of a possible missile attack—took place after the first of several explosions aboard the aircraft. There is absolutely no evidence that any "missile" sighting occurred before Flight 800 exploded.
- CIA analysts are confident that what the eyewitnesses saw was in fact the aircraft itself in various stages of crippled flight, not a missile.
- CIA analysts believe that a briefing of our results to the FBI Director in Charge, James K. Kallstrom, would facilitate the closure of the FBI's criminal investigation. The briefing would take about 45 minutes to an hour.

~~FOR OFFICIAL USE ONLY~~

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C05782960

~~FOR OFFICIAL USE ONLY~~

SUBJECT: (FOUO) Was a Missile Used to Shoot Down TWA Flight 800?

Prepared by: [redacted]

[redacted]

~~FOR OFFICIAL USE ONLY~~

BACKGROUND

Introduction

On 17 July 1996, Trans World Airlines Flight 800 departed from New York's John F. Kennedy Airport enroute to Paris. Twelve minutes into the flight, as the airliner climbed to its cruising altitude, there was a catastrophic explosion and the Boeing 747 plunged into the Atlantic Ocean 9 miles off the coast of Long Island. All 230 people aboard perished, making it one of the most lethal disasters in commercial aviation history. Hundreds of eyewitnesses in the Long Island area witnessed portions of the event.

Since then, investigators have been working continuously seeking the cause of the explosion. They have focused on three possible causes—a bomb, a missile, or a mechanical failure. Of particular concern to FBI investigators and CIA analysts are accounts from dozens of eyewitnesses who reported seeing an object—usually described as a "flare" or "firework"—ascend and culminate in an explosion. Many people postulated that these eyewitnesses saw a missile destroy the aircraft.

At the request of the FBI, CIA weapons analysts were asked to look into this possibility. The CIA's conclusion: A missile was not involved. The eyewitness sightings of greatest concern—the ones originally interpreted to be of a possible missile attack—took place after the first of several explosions aboard the aircraft. What these eyewitnesses almost certainly saw was the crippled aircraft after the first explosion had already taken place.

Analysis

A major complication in determining what happened to Flight 800 was the fact that the flight data recorder and cockpit voice recorder ceased operating just after the initial explosion aboard the aircraft. The data recorder registered no unusual activity prior to the end of its operation. But the voice recorder registered a fraction of a second of "loud noise" just before it ceased operating. National Transportation Safety Board analysts concluded that this was sound from the first explosion—the one that initiated the destruction of the aircraft.

Based on flight recorder data and airport radar tracking, the aircraft's location, altitude, speed and heading at the instant its recorders ceased operating are known. This information was used to determine the distance and direction of the aircraft with respect to each eyewitness at the instant the aircraft exploded. This, in turn, made it possible

to calculate how long it took sound from the explosion to reach each eyewitness, and to associate what eyewitnesses heard with what they saw.

The concept used here is similar to a technique a person can use to determine how far away a lightning strike is—by estimating how long it takes to hear thunder after the lightning is seen. Because sound in air travels about 1,100 feet per second, an observer who hears thunder five seconds after seeing a lightning strike knows that the lightning is about 1 mile away.

On the evening of 17 July, many eyewitnesses reported hearing a loud "boom" as part of their observations, often followed at varying intervals by several smaller "booms." Knowing that the first of these sounds originated when the recorders ceased operating (831:08 PM), it was possible to synchronize many eyewitnesses' visual observations with activity aboard Flight 800 by calculating how long it took sound to travel from the known location of the aircraft when it exploded to each of these eyewitnesses.

We can be confident that no sound from the aircraft audible to eyewitnesses was produced before the sound heard at the end of the cockpit voice recording. The closest of these eyewitnesses was more than 8 miles away. Any sound heard at that distance and produced near the aircraft before the recording ended would have been recorded.

Using the eyewitnesses' visual and sound observations—combined with tracking data from the radars and infrared data from a sensor aboard a US satellite—CIA analysts were able to reconstruct the approximate path of Flight 800 from the instant its recordings ended until it hit the water. The following postulated sequence of events is based on that analysis:

> Just after the initial explosion at 831:08 PM, the aircraft pitched up abruptly and climbed several thousand feet from its cruise altitude of 13,800 feet to a maximum altitude of about 17,000 feet. This is consistent with information provided by National Transportation Safety Board and Boeing engineers indicating that the front third of the aircraft, including the cockpit, separated from the fuselage just two to four seconds after the initial explosion. This significant, sudden loss of mass from the front of the aircraft caused the rapid pitch-up.
>
> The initial explosion was very loud but was not seen by any known eyewitness. However, the subsequent small fire trailing from the aircraft was visible to a few of the closest eyewitnesses on land, sea, and in other aircraft. The rising, burning aircraft is consistent with what some eyewitnesses described as "an ascending white light resembling a flare or firework." But it was difficult to see against the relatively light sky.

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Shortly after Flight 800 reached the peak of its ascent—about 15 seconds or so after the initial explosion—a second explosion on the aircraft occurred. This explosion was clearly visible to many eyewitnesses, who generally described it as "a small fireball." The second explosion was accompanied by a series of "booms" which were not as loud as the first one, but were clearly audible more than 10 miles away.

Following this second explosion, the aircraft went into a very steep and rapid descent, falling 2 miles and traveling horizontally almost 2 miles in less than 25 seconds. As the aircraft descended, it produced an increasingly visible fire trail. When it reached an altitude of about 1 mile—42 seconds after the initial onboard explosion—the aircraft's left wing separated from the fuselage, releasing into the air unburned fuel from the left wing's fuel tanks. The fuel's subsequent ignition and burning produced a dramatic cascade of flames visible to eyewitnesses more than 40 miles away, and detected by an infrared sensor

About 50 seconds after the initial explosion—eight seconds after the left wing detached—the aircraft and detached wing hit the water.

CIA analysts developed the characterization above using technical data and accounts from key eyewitnesses who were closest to the disaster, and who provided detailed descriptions of what they saw and heard. This portrayal then was evaluated against descriptions provided by more than 200 additional eyewitnesses.

Not surprisingly, most eyewitnesses saw only the most conspicuous segment of the disaster—the ignition of the fuel and resulting cascade of flames in the 10 seconds or so just before the aircraft hit the water. There were two distinctive characteristics analysts used to determine that these eyewitnesses saw only the end of the aircraft's descent, and not a missile.

First, sound from the initial explosion took from 42 to 102 seconds to reach each of the eyewitnesses claiming to have heard sounds associated with the disaster. Therefore, things eyewitnesses reported seeing at about the time when they heard the first sound are known to have taken place well after the first explosion occurred.

Second, many eyewitnesses described only things happening within about 10 seconds of the moment that the left wing detached from the fuselage. This was an extraordinary spectacle, as two distinct fireballs and a trailing cascade of flames, caused by

the burning fuel, fell to the ocean. Since the left wing is known to have detached about 42 seconds after the initial explosion, none of these observers saw events occurring near the time of the first explosion.

Using the above process of elimination, the majority of observations can be demonstrated to have occurred well after the initial explosion. Consequently, none of these observations can be of a missile which caused this explosion.

The remaining eyewitness accounts describe events fully consistent with observations expected if only the aircraft in various stages of crippled flight were being observed. There is nothing in this last category of eyewitness statements that provides any evidence that a missile was used to shoot down Flight 800.

Indeed, several eyewitnesses, confident that they had seen a missile destroy an aircraft, were puzzled that they hadn't actually seen the aircraft before the missile hit it. Only a few eyewitnesses claimed to have seen Flight 800 before it exploded, even though the airliner should have been visible to any observer witnessing a missile approach it. This suggests that many eyewitnesses saw only the crippled aircraft without realizing it.

Conclusions

CIA analysts do not believe that a missile was used to shoot down TWA Flight 800. To date, there is absolutely no evidence, physical or otherwise, that a missile was employed.

Initial speculation that a missile was involved was based totally on the testimony of eyewitnesses who were seeking to assist the Federal Bureau of Investigation and National Transportation Safety Board as these agencies probed into the possible causes of the tragedy. Without the assistance of these eyewitnesses, the accounting given here would not have been possible.

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WARNING: Classified output may follow

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APPROVED FOR RELEASE DATE: 19-Mar-2012

MEMORANDUM FOR: 13 June 1997

FROM:

OFFICE: OFFICE OF TRANSNATIONAL ISSUES

SUBJECT: Revised FAX: TWA Flight 800 Briefing to FBI, New York, 18 June 1997

REFERENCE: please FAX the following revised note, on OTI letterhead, to at the FBI's Manhattan office (unclassified Thanks.

NOTE FOR:
FROM:
OFFICE: Office of Transnational Issues
DATE: 06-13-97 02:05:10 PM
SUBJECT: TWA Flight 800 Briefing to FBI, New York, 18 June 1997

..here are some revised thoughts on a possible agenda for the presentations next Wednesday. Please modify these as you see fit. (Somehow, I think I'm gonna regret I said that.)

also is prepared to talk about the MANPADS threat to civilian airliners if time permits.

Wednesday, 18 June 1997

Was A Missile Used to Shoot Down TWA Flight 800? **[Revised 13 June 97, 6:30 PM]**

I. FBI: Introduction/Opening Remarks

A. Overall investigation
B. Investigation into the possibility of a missile engagement
C. Agencies involved

II. CIA Presentation

A. Introduction
-- Chris Holmes, Director/Office of Transnational Issues (OTI)

B. Technical analysis
--
--

~~UNCLASSIFIED~~

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~~UNCLASSIFIED~~

-- [redacted]

C. Video: "Was A Missile Used to Shoot Down TWA Flight 800?"
-- [redacted] (introduction)

D. Summary/conclusions

III. Open session: Questions & answers

IV. Way exotic dinner (Manhattan House 'o ChiliDogs or better) to be hosted by James Kallstrom [after 5 PM]

CC: [redacted]

Sent on 13 June 1997 at 06:48:34 PM

WARNING: Classified output may follow

ohallrn

Date: 3/28/2014 *Time:* 1:45:14 PM

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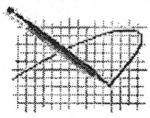

06/24/1997 04:35 PM

To

cc

bcc

Subject modifactions to TWA 800 animations

A meeting to discuss improvements to the TWA flt. 800 video was held on Tuesday, June 24, at 15:00 in office. In attendance were . The following itemizes the change requests pertaining only to animation clips.

clip	request
sound prop.	- remove glitch which causes a jerk in the motion
boat witness	- darken the smoke trail to make it more visible against the background. - add long firetails to body and wing as they emerge from the "wall of flame".
condo witness and smoke.	- add fire shooting back into the sky when plane hits the water - possibly an explosion - add long firetails to body and wing as they emerge from the "wall of flame".
737 witness	- smooth camera jerkiness, and jerky movement of the P3 Orion.
explosion 1	- make engine trails taper off into transparency.
explosion 2	- before second explosion, flames and smoke emanating from the fuselage should be bigger and brighter, with more smoke.
wing sep looking up	- make explosion and fireball last longer.
wing sep - side	- after wing separates, there is a smoke trail emanating from nothing - remove this, and add smoke coming from all engines.

- please verify the accurateness of these items. will go over these items and produce a totally inaccurate level of effort estimate.

APPROVED FOR
RELEASE DATE:
19-Mar-2012

(b)(3)

[redacted]
06/24/1997 04:44 PM

To
cc
bcc
Subject Re: modifactions to TWA 800 animations ([redacted] comments)

[redacted]...good list. **We'll also be working to finalize the eyewitness list, using only one color (yellow) for all eyewitnesses and using AVID to make appropriate annotations.** ---[redacted]

A meeting to discuss improvements to the TWA flt. 800 video was held on Tuesday, June 24, at 15:00 in [redacted] office. In attendance were [redacted]. The following itemizes the change requests pertaining only to animation clips.

clip	request
sound prop.	- remove glitch which causes a jerk in the motion
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[redacted] - please verify the accurateness of these items. [redacted] will go over these items and produce a totally inaccurate level of effort estimate.

APPROVED FOR
RELEASE DATE:
19-Mar-2012

C05782961

~~UNCLASSIFIED~~

(b)(3)

25 June 1997

MEMORANDUM FOR:

APPROVED FOR RELEASE DATE: 30-Mar-2012

FROM:

OFFICE: OWTP

SUBJECT: Re: modifacations to TWA 800 animations

REFERENCE:

TO:
FROM:
OFFICE: OTI
DATE: 06-25-97 02:14:23 PM
SUBJECT: Re: modifacations to TWA 800 animations

& Co. - I have given some thought to the effort to make these mods, and have decided that they are all pretty similar in difficulty. I estimate 2.5 days per mod. There are 8 mods, so if one person does all the work it will take 20 days. With two or three it can be reduced, but probably not to 1/3 the time - this is due to resource limitations. Please prioritize the requested mods - we will begin working on the most important ones first.

--- My recommendations are in blue. ..please add yours; then we can get together and merge our lists. [Also, I think the main thing we need to work on is the new set of eyewitness maps...but that's not an animation problem.] ---

- here are my recommendations in red...I will agree with for the sake of ease as well as the strange fact as they seem like good 1,2,3s for the start of work. ha! I will also note that and I will, as he mentioned, be working up the new positions for the maps (not a concern for you of course) and then get with . I would push for the shortest time possible to complete the video in a proffesional manner (and we like it) ...ie. 20 days seems too long to me, perhaps 2 weeks (open to suggestions). We would like to have the finished copy available for future briefings as soon as possible (regardless of final FBI delievery date yet to be determined)....thanks,

~~UNCLASSIFIED~~

C05782961

~~UNCLASSIFIED~~

A meeting to discuss improvements to the TWA flt. 800 video was held on Tuesday, June 24, at 15:00 in [redacted] office. In attendance were [redacted] The following itemizes the change requests pertaining only to animation clips.

clip	request
sound prop.	**[3]** - remove glitch which causes a jerk in the motion
boat witness	[5] - darken the smoke trail to make it more visible against the background. - add long firetails to body and wing as they emerge from the "wall of flame".
condo witness	[4] - add fire shooting back into the sky when plane hits the water - possibly an explosion and smoke. - add long firetails to body and wing as they emerge from the "wall of flame".
737 witness	[6] - smooth camera jerkiness, and jerky movement of the P3 Orion.
explosion 1	[8] - make engine trails taper off into transparency.
explosion 2	**[1]** - before second explosion, flames and smoke emanating from the fuselage should be bigger and brighter, with more smoke.
wing sep looking up	**[2]** - make explosion and fireball last longer.
wing sep - side	[7]- after wing separates, there is a smoke trail emanating from nothing - remove this, and add smoke coming from all engines.

[redacted] - please verify the accurateness of these items. [redacted] will go over these items and produce a totally inaccurate level of effort estimate.

CC: [redacted]

Sent on 25 June 1997 at 02:14:23 PM

CC:

Sent on 25 June 1997 at 03:25:54 PM

~~UNCLASSIFIED~~

C05782664
APPROVED FOR RELEASE DATE: 19-Mar-2012

(b)(3)

06/25/1997 02:25 PM

To
cc
bcc

Subject Re: modifacations to TWA 800 animations

- I have given some thought to the effort to make these mods, and have decided that they are all pretty similar in difficulty. I estimate 2.5 days per mod. There are 8 mods, so if one person does all the work it will take 20 days. With two or three it can be reduced, but probably not to 1/3 the time - this is due to resource limitations. Please prioritize the requested mods - we will begin working on the most important ones first.

--- **[Please ignore my earlier response...I accidentally hit send prematurely.]**

My recommendations are in blue. ..please add yours; then we can get together and merge our lists. [Also, I think the main thing we need to work on is the new set of eyewitness maps...but that's not an animation problem.] ---

A meeting to discuss improvements to the TWA flt. 800 video was held on Tuesday, June 24, at 15:00 in office. In attendance were . The following itemizes the change requests pertaining only to animation clips.

clip	request
sound prop.	**[3]** - remove glitch which causes a jerk in the motion
boat witness	**[7]** - darken the smoke trail to make it more visible against the background.
	[8] - add long firetails to body and wing as they emerge from the "wall of flame".
condo witness	**[4]** - add fire shooting back into the sky when plane hits the water - possibly an explosion and smoke.
	[5] - add long firetails to body and wing as they emerge from the "wall of flame".
737 witness	**[9]** - smooth camera jerkiness, and jerky movement of the P3 Orion.
explosion 1	**[10]** - make engine trails taper off into transparency.
explosion 2	**[1]** - before second explosion, flames and smoke emanating from the fuselage should be bigger and brighter, with more smoke.
wing sep looking up	**[2]** - make explosion and fireball last longer.
wing sep - side	**[6]** - after wing separates, there is a smoke trail emanating from nothing - remove this, and add smoke coming from all engines.

- please verify the accurateness of these items. will go over these items and produce a totally inaccurate level of effort estimate.

000594

C05782665

(b)(3)
(b)(6)
(b)(7)(c)

[redacted]
08/06/1997 03:40 PM

To [redacted]
cc
bcc

Subject Response to MSIC Concerns with TWA-800 Conclusions

Below is a Word attachment of the final response to MSIC comments/concerns regarding our TWA-800 briefing to the FBI some time ago. As the MSIC concerns were passed to us informally from the FBI for comment, we will in turn pass them informally back to the FBI as requested. We have taken some time to try and make sure every single point is accurately and adequately addressed. [redacted] and I were disappointed when first receiving the MSIC concerns due to the numerous out-of-context or simply incorrect statements regarding actual eyewitness reports and CIA analysis/conclusions. Bottom line is that we do not believe that any of the MSIC concerns warrant a change in CIA's final conclusion and all concerns are addressed in detail within the response. We agreed with some of the points raised and suggested by MSIC which are noted within, none of which effect CIA analysis or conclusions. We hope that this response will help the FBI or MSIC to more completely understand CIA analysis and conclusions.

The document is rather lengthy so I have bold faced several of the key issues in the CIA response to MSIC italicized concerns, should anyone be interested in an abbreviated version.

Thanks, [redacted]

- REPLMSIC.DOC

APPROVED FOR
RELEASE DATE:
30-Mar-2012

any observations of an aircraft in trouble. CIA therefore concludes that this eyewitness could not have seen a missile. In fact the description given for the flight path of the aircraft could be consistent with the CIA proposed trajectory if the observations were made of the aircraft as it was at its highest attained altitude and arching over for several seconds just prior to making its descent toward the ocean. This would also be more consistent with the lengthy time of observations made by the witness. The fireball observed near the tree line is probably the final fireball described so vividly by a majority of eyewitnesses. It is important to note that the fireball was described as "rising above the tree line" similar to so many other witnesses describing an ascending "firework" or "flare" just prior to or coincident with a large fireball and the aircraft's final moments before it hit the water.

[redacted] "...saw a plane and noticed an object spiraling toward the plane. The object, which she saw for about one second, had a glow at the end of it and a gray/white smoke trail. [redacted] stated she saw the object hit the plane and then the object headed down toward the ocean....she heard a loud noise and saw an explosion just as the object hit the plane. The plane dropped towards the water and appeared to split in two pieces. A few seconds later, she heard another explosion..."

The horizontal motion of the aircraft, described for about one second, is consistent with the CIA scenario. Sound from the first explosion would reach [redacted]—30.6 miles away from the initial explosion—149 seconds after the first explosion. She states that she saw the object strike the plane one second before this. These observations could not be of the aircraft in its demise if the timing described by the eyewitness for hearing sounds is accurate. If taken at face value, the eyewitnesses statement would suggest that she could not therefore have seen anything near the beginning of the aircraft's crippled flight. If taking the witnesses description of when she heard sounds with a grain of salt—that is assuming she was substantially off on when she heard sounds—and specifically addressing her visual observations, one must question the vivid details described from an eyewitness over 30 miles from the point of the initial explosion aboard flight 800. Nonetheless, the gist of her description, without coincident sound, is still generally consistent with the CIA proposed sequence of events near the end of TWA-800's flight path, in which it is known that something ascended toward the aircraft moments before it impacted the water.

4. Timing and locations of the aircraft during breakup:

To date, the proposed timing and locations of the aircraft and pieces during breakup still appear to be uncertain. Further effort should be expended, especially on analysis of all of the radar data, to determine when and where the breakup began and how the pieces fell. An accurate reconstruction is essential to allow for a complete understanding of the event.

CIA agrees that analysis of all radar data would go a long way toward a better understanding and more accurate reconstruction of the breakup of the aircraft and its crippled flight. CIA requests from the FBI all radar data available for additional analysis as well as any inputs from other sources of information which could shed additional insight into a better understanding of the event.

5. Other issues.

— Proposed flight path and sequence must be consistent with sequence of events determined from the aircraft wreckage.

To CIA's knowledge, the CIA postulated flight path of TWA-800 is consistent with the NTSB chaired sequencing report for how the aircraft came apart. The main pieces of the aircraft breakup (front fuselage, back fuselage, and left wing) do correlate with the CIA-postulated scenario. CIA requests specific examples of inconsistencies if they exist.

— Have the landing lights been recovered? Were they on at the time of the crash? What position were the landing light switches in? If on, they would have provided an excellent homing source for some MANPAD missiles. If not, the statements of witnesses such as [redacted] *who report seeing something like landing lights, should be examined further.*

CIA agrees that questions regarding the landing lights should be addressed. Was power to the landing lights cut just after the initial explosion? CIA however questions exactly how this effects CIA analysis or the CIA scenario.

[redacted] a passenger aboard USAIR 217, describes '...noticed this large aircraft had what he took to be landing lights on, and could observe cabin lights on the vessel...watched the aircraft for approximately thirty to forty seconds...the aircraft exploded and a large round orange fireball appeared which seemed to emanate from the front area of the plane. The fireball was approximately twice the size of the aircraft. The plane seemed to stop in mid air "like a bus running into a stone wall - no forward motion". Approximately one second after the first explosion it exploded again and an orange and yellow fireball appeared, the size of which was about fifty to seventy five percent larger than the first explosion. This second explosion occurred almost in the same location as the first explosion and flame from this second explosion seemed to shoot towards the front of the aircraft ahead of the path of the vessel...'

From radar data and the positions of USAIR 217 in relation to TWA-800 at the time of the explosion, [redacted] observations described above would have occurred after the initial explosion aboard the aircraft. These observations are likely of the crippled

aircraft on fire after the first explosion. Due to [redacted] position, above and behind TWA 800, it is doubtful he could have observed landing lights.

[redacted] describes "...what drew his attention to this aircraft was what he originally thought was the aircraft's nose light. The light was of an unusual intensity and was off color of the usual white light, being a brilliant yellow color...because of the brilliance and off color of the light, he believed that the oncoming aircraft may have an engine fire...observed the oncoming aircraft "inflight explosion", observed fire, and then two pieces of what he believes to be the oncoming aircraft going down, possibly the wings, parallel to the water..."

The unusual nature of the light [redacted] observed probably is indicative of the aircraft's condition sometime after the initial explosion and after the front third of the aircraft had separated from the fuselage. The description of the large explosion and two pieces going down is consistent with the fireball and descent near the end of the aircraft's descent to the water. CIA does not believe that [redacted] observed landing lights of the crippled aircraft.

— Currently, it is unclear to DIA whether the sequence given in the Sequencing Report is of high confidence. If not, a cause other than a wing center section overpressure event may have initiated the aircraft failure.

CIA had no part in this work and therefore cannot comment on its accuracy. However, the sequencing report, as it stands, is consistent with CIA analysis.

— Sound of initial event - there appear to be inconsistencies between the cockpit voice recorder, the lack of any visual signature of the "initial event", and the statements such as "it shook the bridge". Further study should also be conducted to determine if the explosions might have created a shock wave that traveled faster than Mach. These issues must be resolved before credibility is given to the CIA-postulated scenario.

One of MSIC's concerns here may be that the loud sound which shook the bridge—although certainly produced sometime on the aircraft during its crippled flight—may not be the initial sound recorded by the aircraft cockpit voice recorder. The following response assumes that this sound which numerous eyewitnesses heard was not made by some other event unrelated or far removed from the aircraft at the time of its demise. CIA believes that there is no other source that can generate such a sound that we know of—not a missile launch or an earlier event aboard the aircraft not recorded by the cockpit voice recorder.

CIA has several reasons for believing that the loud sound, if not the one recorded, occurred very soon (a fraction of a second) after the recorded sound. If the loud sound

occurred at a significantly later time, the aircraft would have continued its forward motion (at about 640 ft/sec), causing the loud sound to be created at a significantly different position than the one we used in our calculations. This, in turn, would have created anomalies as we compared the relative times at which the first sound arrived at various eyewitnesses.

CIA states in its briefing and video that the important point is that "no loud sound was created before the one at the end of the cockpit voice recording." If a loud sound was produced later, it would be even less likely that any eyewitness describing observations near hearing the first loud sound—that is near the end of the aircraft's crippled flight—could have seen a missile. This is because there would be even more time between the first explosion and when the aircraft hit the water—putting those eyewitness sightings of "an ascending streak" in conjunction with hearing a loud sound even further from the initial explosion.

Concerning the possibility of a shock wave that traveled faster than the speed of sound, CIA acknowledges that such phenomena do exist—from nuclear explosions, for instance. CIA does not believe that is what occurred here. First, CIA doubts that the explosion created enough energy to produce a sustained supersonic shock wave. Even thunder from a massive lightening strike only travels at the speed of sound. Second, if a sustained shock wave of this type had been created, eyewitnesses at varying distances from the initial explosion would have heard the sound at more closely spaced intervals than those we observed, and our calculations would have shown an inconsistency. Our calculations indicate that sound arrived at various eyewitnesses at about the appropriate relative time when we use a sound speed of 1,089 ft/sec. CIA remains comfortable with the postulated scenario as it stands.

— If a MANPAD missile was used against this aircraft, very few, if any, people would see the exhaust plume due to its small signature and its distance from the witnesses. Therefore, it is unwise to conclude that lack of witnesses means lack of missile.

The CIA position that a missile was not involved was based on several factors: 1) the fact that CIA believes no witnesses observed a missile fired (from CIA analysis), 2) the lack of physical evidence to date of a missile (no CIA involvement), 3) historical data of past portable SAM attacks on aircraft of this size which do not support a catastrophic loss of an aircraft like that of TWA-800 (CIA & FAA data), and 4) although shoulder-fired SAMs are kinematically capable of reaching the aircraft's altitude, TWA-800 was at the edge of the envelope of portable SAMs. **The CIA conclusion which has been given to the FBI is that no eyewitness observed a missile hitting the aircraft.**

CIA questions whether a portable SAM fired under the lighting conditions of July 17, 1996 would be visible to witnesses 10 miles away. Discussions with IR shoulder-fired SAM experts at China Lake as well as portable SAM operators at the Army Air Defense School in Ft. Bliss, El Paso, TX revealed mixed answers. CIA believes that some eyewitnesses could have seen a portable SAM burning propellant in the first 6 to 7 seconds of the missile's flight. CIA believes that it is unwise to immediately conclude that most, if not all, eyewitnesses could not see a portable SAM engage the aircraft at that distance.

Nonetheless, CIA proposes that identifying those few witnesses which may have potentially observed a missile and analyze each one in detail to look for similarities and/or differences in their observations with the majority of eyewitness reports. This type of independent analysis, similar to what CIA has done for several witnesses determined to be of highest concern, is required to build a case for a missile observation.

If a MANPAD missile was used against this aircraft, very few, if any people would see the exhaust plume due to its small signature and its distance from the witnesses. This is the fundamental problem in concluding that a lack of witnesses means lack of missile. In fact the reduction in number to a very small percentage of the overall witness reports is more consistent with a MANPADS theory than a large missile or any of the other proposed theories would be. It should be noted that a Boeing 747 falling out of a clear blue sky is an unusual event, and unusual testimony or witness accounts should not be discounted because they are initially unexplainable.

CIA does not conclude that lack of eyewitnesses means lack of a missile. **The CIA conclusion which has been given to the FBI is that no eyewitness observed a missile hitting the aircraft.** CIA agrees that it is unlikely that a majority of eyewitnesses would see a portable SAM engage TWA-800 under the conditions and distances of July 17, 1996. CIA is concerned that almost all eyewitness descriptions of 'ascending' objects are described as clearly visible, often with words like bright, brilliant, or intense. These are not words expected to be associated with something which is barely visible to the naked eye.

Nonetheless, CIA does not believe that a reduction in the number of possible witnesses which could have potentially seen a missile makes this theory any more valid than the bomb or mechanical theories. Due to the lack of physical evidence to support any of the three theories, a mechanical failure seems to be the most likely of any of the given theories (ie. more aircraft are lost from mechanical difficulties as opposed to bombs or missiles). In fact, **if the witness' observations of something ascending did not at first suggest that a potential missile was involved, the missile theory would likely not have been addressed at all. CIA analysis attempts to demonstrate that the witnesses**

did not see a missile. The FBI must evaluate CIA analysis in context with all other information available in order to determine whether or not a missile was involved.

5. Recommendations.

Until reliable evidence is found in support of any specific cause, the effort to find physical evidence should continue.

Continue re-interviewing the witnesses. Look for leads to new witnesses. Continue to try to relocate witnesses such as [redacted] who appeared to have some interesting comments.

MSIC will continue to evaluate witness statements for trends and connections in an attempt to further our understanding of what witnesses saw.

CIA agrees with the above recommendations, however cautions that, due to the length of time passed since initial observations in July of 1996, future interviews should not be given any more confidence that interviews of these individuals conducted just after the incident. CIA proposes that MSIC and/or other agencies construct alternative templates or postulated reconstruction of the aircraft's flight path which can then be evaluated with the witness reports as the CIA template has been.

OTI Response to MSIC Concerns with CIA TWA-800 Analysis

[MSIC concerns and comments are stated below in italics. CIA responses follow each question with important statements bolded.]

MSIC concurs with the CIA position that every witness saw the aircraft in distress.

The CIA position is that every witness describing an 'object' with ascending motion made their observations after the first explosion aboard TWA 800. **Only a handful of witnesses saw the aircraft shortly after the initial explosion when the crippled aircraft rose to a higher altitude. A majority of witnesses saw events close to the end of the aircraft's crippled flight.**

MSIC can not agree with the CIA conclusion that no witness saw the initial event. There are several witnesses that can not be lightly disregarded and possibly may have seen something other than the aircraft.

The CIA conclusion is that all witnesses made their observations after the first explosion. It is possible that a few may have witnessed the initial explosion. However, the CIA position is that all witnesses did not observe anything ascending before the aircraft's initial explosion. **CIA does not propose that all observations of 'ascending objects' are the aircraft and in fact believe that over 90 % of these observed something other than the aircraft ascending, possibly a fuel related event in the final seconds of the aircraft's descent toward the water. Nonetheless CIA believes it has shown that these observations occurred near the end of the aircraft's crippled flight where anything ascending would not be a missile.**

The following are MSIC concerns:

1. Witnesses who report Left to Right (East to West) motion.

There are several witnesses who state they saw an object in the sky moving from left to right (East to West) prior to observing any explosions. These witnesses cannot be explained as seeing any portion of the aircraft trajectory proposed by CIA or other sources. (Examples are

Of all witnesses analyzed by the CIA, 39 clearly describe either left to right or right to left motion for anything described as ascending. Of these, 24 describe right to left motion (generally consistent with the path of TWA-800) and 15 describe left to right motion (opposite the path of the aircraft). However, CIA assesses that all but two of these 15 witnesses describing an ascending 'flare' or 'firework' in a left to right motion made observations limited to the end of the aircraft's crippled flight (This point makes logical sense since the most visible explosions and fireball occurred in the last 15-20

seconds of the approximately 50 second crippled flight). The other two eyewitnesses made observations of longer duration but nonetheless were made after the first explosion on the aircraft. More importantly CIA does not believe this ascending object which a majority of eyewitnesses describe is the aircraft. The specific cause of this left to right ascending motion near the end, if accurately described by some eyewitnesses, has not been determined, however, it is likely related to fuel burning. **CIA believes that since the eyewitnesses' observations are at the end, they could not have witnessed a missile approaching the aircraft, an event which would have had to have occurred over 40 seconds earlier.**

2. Sight and sound contradictions to the CIA-postulated sequence.

Many witnesses' reports of sound, in relation to visible explosions, do not fit with the sequence proposed by the CIA. For example, [redacted] *approximately 13-14 miles away, was cued by sounds, looked up and then saw something arc up and then down. Others are* [redacted]

Sound from the first explosion takes 42 seconds to reach the closest witness. **If sounds (related to the TWA-800 incident) were heard by any witness close to or at the time of their observations, they could not possibly have witnessed anything surrounding TWA-800 before the initial explosion.**

The main question regarding the sound analysis is what produced the loud sound that shook houses and a 70 ton bridge. Four possibilities exist. First, that the center fuel tank explosion on the aircraft produced it (CIA's position). Second, a MANPAD warhead caused the explosion. However, the small size of MANPAD warheads makes this unlikely. In addition, the sound analysis would not change, if a warhead detonation and the fuel tank explosion occurred simultaneously. Third, the launching of a MANPAD missile produced it. This would have to occur within 15 seconds prior to the center fuel tank explosion. Fourth, that the shock wave formed off the missile produced the sound. CIA believes that these last two situations could <u>not</u> produce the required sound. Therefore, CIA believes that only the first possibly source of the sound is realistic—the sound must have been produced when the center fuel tank exploded. This finding correlates with most, if not all, eyewitnesses.

From 302s available to CIA:

[Read below entry as Name/distance from initial explosion/time for sound to reach eyewitness for initial explosion/for second explosion/wing separation.]

[CIA comments to paraphrased eyewitness statements are underlined.]

[redacted]/71898 m/67.2sec/62.6 sec/54.8 sec - attention was drawn south by two claps of thunder. He then observed an orange/white glow diminishing in size as it moved away from him (thought it was flare or firework). He then heard more thunder and an orange ball of flames dropping toward the ocean.

For this eyewitness reporting to be true, the aircraft would have had to stay airborne for well over 67 seconds, which does not correlate with other corroborated analysis based on radar tracking and sound propagation. Therefore, CIA concludes that the observations of this eyewitness occurred after the aircraft was already in the water, and highlights the fact that the fuel burning on the water produced some phenomenon observed by eyewitnesses

[redacted]53400 m/50.7sec/48.3 sec/42.9 sec - eyewitness heard loud explosion, and then one to one and a half minutes later, saw a large red globe of fire fall very slowly from the sky (30 seconds).

For this eyewitness reporting to be true, the aircraft would have had to stay airborne for at least 140 seconds (50+60+30). This does not match other eyewitness accountings. Therefore, CIA concludes that the observations of this eyewitness occurred after the aircraft was already in the water, and highlights the fact that the fuel burning on the water produced some phenomenon observed by eyewitnesses.

[redacted]161704 m/149.0 sec/152.3 sec/161.9 sec - stated she saw a plane and something spiraling toward the plane. The object, which she saw for about one second, had a glow at the end of it and a gray/white smoke trail. She saw the object hit the plane, but it could have been the side or near the back. She then heard a loud noise and saw an explosion. The plane dropped towards the water and appeared to split into two pieces. A few seconds later she heard another explosion.

This eyewitness, over 161 km away from the explosion, could not have seen a missile in the air, nor is it likely she heard a loud sound. For a sound to be produced in TWA800's location to reach her, it would have had to be produced almost 100 seconds before the center fuel tank explosion. Therefore, either her location in the 302 is in error, or the eyewitness did not hear a sound. The eyewitness description does fit the final sequence in the aircraft's destruction, with the separation of the left wing. It is also likely that this event was the only one visible to eyewitnesses over 160 km away.

[redacted]49692 m/47.4 sec/46.0 sec/42.1 sec - first noticed a red/orange glow in the sky, as it traveled easterly and grew in size. After two to three seconds, he heard the first of two explosions. A small fireball arched over and then, a second or two later, the second explosion occurred. This explosion caused a bigger, bright fireball. After the second explosion the large fireball fell down toward the horizon in two pieces.

From the description, CIA concludes that the eyewitness is observing events close to the left wing separation. The eyewitness claims he heard the first explosion one or two seconds prior to the fuel fire caused by the left wing separation. This puts the wing separation event at approximately 49 seconds (compared to CIA's estimate of 42 seconds). Although not corresponding exactly to CIA's estimate, if this number were correct, it would not substantially change the final conclusion.

[redacted]/57380 m/54.2 sec/51.0 sec/44.7 sec - observed a tiny, extremely bright orange glow at approximately 10,000 ft high and 7 to 8 miles to the west. The glow descended from west to east. When the glow reached 5000 ft, it increased in size and generated a trail of flames. At 1000 ft, it glow and flame became very large. About 30 seconds after the crash, he heard a "firecracker" type explosion and then an enormous explosion that rocked the house.

For the eyewitness description to be true, the sound producing event would have been produced approximately 35 seconds (54+30-49) prior to the center fuel tank explosion. Therefore, his sound observations cannot be related or must be incorrect.

[redacted]/47034 m/45.0 sec/45.3 sec/44/1 sec - she noticed an aircraft climbing in the sky traveling from her right to her left. She noticed the aircraft appeared to level off. While keeping her eye on the aircraft, she observed a "red streak" moving up from the ground at an 45 degree angle. The red streak was leaving a light gray colored smoke trail. At the instant the smoke trail ended at the aircraft's right wing, she heard a loud sharp noise that sounded like a firecracker. She then observed a fire at the aircraft followed by on or two secondary explosions which had a deeper sound.

It would take sound from the first explosion approximately 45 seconds to reach [redacted] The sounds which [redacted] heard had to have occurred at least 45 seconds earlier, long before the observation described of an ascending red streak. CIA believes [redacted] observations were of the end event similar to the large majority of eyewitness statements analyzed by CIA.

3. Aircraft flight path discrepancies.

A number of witnesses ([redacted]) who state that they watched the aircraft for some time before it exploded, describe its trajectory as horizontal before the explosion, then descending at a noticeable angle to the point of the large fireball. This clearly contradicts the CIA-postulated flight path, and needs to be explained.

In CIA analysis, the aircraft flew a large portion of the flight in what is more horizontal than vertical motion—illustrated in the video produced. Therefore, it is not surprising that a few eyewitnesses described horizontal motion.

From 302s available to CIA:

[redacted] "...while keeping her eyes on the aircraft, [redacted] observed a "red streak" moving up from the ground toward the aircraft at an approximately 45 degree angle. The red streak was leaving a light gray colored smoke trail. The red streak went past the right side and above the aircraft before arching back toward the aircraft's right wing... [redacted] heard a loud sharp noise which sounded like a firecracker had just exploded at her feet. [redacted] then observed a fire at the aircraft followed by one or two secondary explosions which had a deeper sound..."

[redacted] described only a few seconds of horizontal motion before describing the above. [redacted]—8.9 miles away from the initial explosion—described an ascending "red streak" with end game performance beyond the capability of any shoulder fired missile. In addition, it would take sound from the first explosion approximately 45 seconds to reach [redacted] The sounds which [redacted] heard had to have occurred at least 45 seconds earlier, long before the observation described of an ascending red streak. CIA believes [redacted] observations were of the end event similar to the large majority of eyewitness statements analyzed by CIA.

[redacted]: "...heard the sounds of an aircraft...observed a large commercial aircraft flying west to east and south of his location, probably over water. The aircraft had an unusual amount of black smoke spewing from the wing area...a second later, he glanced again and saw what he described as a "red glow" or "red dot" on the aircraft...see the airplane nosing at an angle towards the ground...disappeared behind trees in the horizon...heard a blast and saw a red flash through the trees and extending upwards..."

[redacted] described an already crippled aircraft with some horizontal motion just prior to a large explosion and descent. This is consistent with the CIA scenario. [redacted]—14.8 miles away from the initial explosion—indicates no ascending motion and that the aircraft observed was in trouble from first observations, spewing black smoke. No missile could therefore have been observed required to have occurred before these observations. The red glow or dot observed was very likely the final fireball close to the end of the crippled aircraft's descent.

[redacted]: "...attention was drawn to an unusual movement in the sky...it moved more quickly than any plane from north to south, low above the horizon at an almost flat trajectory, but was traveling slightly up. It was shiny and silver like a dime, but at times had a blue gray shadow like a plane...followed the object for approximately 2

or 3 seconds when she then noticed a large commercial airliner which appeared to be traveling at the same altitude, "just stop" and begin to disintegrate..."

observation of a somewhat flat trajectory for only a few seconds could be consistent with the CIA scenario. —16.9 miles away from the initial explosion—described an object on a trajectory, although slightly up, which is generally not consistent with enough vertical motion expected of a missile attacking flight 800 at 13,800 feet. In addition, not shown in the above extraction from the eyewitness statement, but clearly evident in the statement's entirety, is an extraordinary amount of detail of the event, which as well as being generally inconsistent with other eyewitness descriptions, was not possible at 16.9 miles from the initial event. did not see a missile.

"...watched the aircraft for approximately thirty to forty seconds...the aircraft exploded and a large round orange fireball appeared which seemed to emanate from the front area of the plane. The fireball was approximately twice the size of the aircraft. The plane seemed to stop in mid air "like a bus running into a stone wall - no forward motion". Approximately one second after the first explosion it exploded again and an orange and yellow fireball appeared, the size of which was about fifty to seventy five percent larger than the first explosion. This second explosion occurred almost in the same location as the first explosion and flame from this second explosion seemed to shoot towards the front of the aircraft ahead of the path of the vessel..."

From description, the inference if toward horizontal motion which is consistent with the CIA scenario. From the magnitude of the large explosions and fireball described by as well as the position of the aircraft he was a passenger on relative to flight 800 when it exploded, CIA believed —2.3 miles away from the first explosion—witnessed the aircraft sometime before the large explosion at the end. Absolutely nothing in his description would suggest he saw a missile hit the aircraft.

From first interviews of 7/23/96: "...a white spark (meteor) that went up and arched across the sky. A short time later (seconds) observed an orange fireball in the sky to the south of the bridge. The fireball fell out of the sky. The firework that had previously observed was traveling in the direction at the fireball. Seconds after observing the fireball, heard and felt one explosion..."

From second interview of 7/29/96: "...white light traveling skyward at approximately a 40 degree angle. described the white light as a light that sparkled and thought it was some type of fireworks. stated the white light "zig zagged" as it traveled upward and at the apex of its travel, the white light "arched over" and disappeared from view. estimated the white light was in view for approximately 15 seconds and its speed was consistent with the speed that normal

fireworks might travel...two or three seconds after the white light disappeared, he saw an orange light that appeared to be a fireball in the sky...the fireball descended at approximately a 30 degree angle and left a fire trail burning behind it...after the fireball disappeared behind the house, he heard the first of four explosions..."

From [redacted] third interview of 2/10/97: "...when his attention was first drawn to the sky, the object that he saw was approximately twenty five feet above the fourth house on Dune Road...He described the object as resembling a fireworks rocket, but it did not appear to be trailing smoke. He stated that it appeared to be "sparkling"...the object which he observed rise in the sky did so almost vertically, but appeared to arch subtly from his left (East) to his right (West)... [redacted] stated that his observations occurred in the following sequence: first he saw the object ascend, next this object seemed to disappear for a split-second then he saw a red fireball which then descended to horizon and behind house number two..."

[redacted] describes no horizontal motion with perhaps the exception of the arch over portion of the trajectory which is consistent with the CIA scenario. With the exception of [redacted] third interview where he describes a slight left to right motion and almost completely vertical ascent for the object, [redacted] description could match the CIA projected flight path. However, it is absolutely necessary to have total observation time for [redacted]—11.1 miles away from the initial explosion—to know when exactly these observations were made. It is worth noting that [redacted] third interview is contrary to his second in terms of the angle of ascent.

[redacted] "...observed a white ball shooting across the sky...it looked like a shooting star...the white ball traveled on an arc from right to left (approximately west to east). The arc traveled on a decline from its initial sighting...the ball exploded into a large whitish gray ball of smoke. Then a wide orange/reddish flame traveled upward to the smoke ball. Shortly after the wide flame disappeared, two strong earthquake type rumblings were felt and heard. [redacted] advised that the entire incident occurred in ten seconds or less..."

[redacted]—11.5 miles away from the initial explosion—did not indicate that he observed any horizontal motion. It is important to note that he saw something ascending well after he first observed something streaking across the sky in a downward motion (most likely the crippled aircraft). This observation is consistent with a majority of eyewitnesses describing something ascending skyward near the end of the aircraft's crippled flight (the last 10-20 seconds of crippled flight) in terms of what was observed and the timing of these observations. [redacted] clearly states that he saw something ascend but it could not have been a missile.

[redacted] "...a shooting star, moving in a downward, forty-five (45) degree sloping arc...it had rolled over onto it's left side, and seemed to be hooking northward and

downward. Immediately, the entire right wing separated from the fuselage, and peeled back, alongside the fuselage.. [redacted] stated that at the instant the wing separated, a large "fire trail" erupted, which he described as a roaring, rushing sound, and added that he immediately felt a concussion on his chest when this happened..."

[redacted]—8 miles away from the initial explosion—the closest eyewitness on the water to the incident, mentions no horizontal or ascending motion. He did not observe a missile. His descriptions are entirely consistent of the CIA proposed trajectory of flight 800 as far as timing and aircraft orientation during the last 30 seconds or so. [redacted] statement establish the approximate time of the large explosion and fireball aboard the aircraft by the time it takes sound from the initial explosion to reach him.

[redacted] "...The flare traveled in a west to east direction for what he estimated was approximately 20 seconds, at which time it started to descend in a curved descent and the same speed. [redacted] estimated that this curved descent lasted about 10 seconds when the flare then opened up in a bottle or cup shape that was red in color. A second or so later, this shape expanded outward on both sides in two pieces..."

[redacted]—20.8 miles away from the initial explosion—observing no ascending motion, could not have observed a missile. However, his description of the motion of the crippled aircraft could challenge the CIA proposed trajectory if his timing for the horizontal time of crippled flight is accurate. However, this portion of his description is not consistent with so many other witnesses which describe a flight path consistent with the CIA template, both in general flight path and in timing. The descending portion of [redacted] description, 'about 10 seconds', before the large fireball described above in which the wing separated from the fuselage, would be described by the CIA proposed trajectory as taking about 25 seconds or so from the aircraft's horizontal motion at its highest attained altitude. CIA is comfortable that very many more witnesses are consistent with this trajectory and timing than not, but acknowledge this discrepancy in [redacted] statement. Nonetheless, CIA stressed again that [redacted], describing no ascending motion, could not have seen a missile.

[redacted]: "...noticed a red light on the object and though 15-20 miles out, assumed it to be a plane. Suddenly the plane took an unusual, 45 degree dive with no visible flames or smoke. Below the tree top line, a large reddish, flaming fireball immediately rose above the tree line, where the plane had descended. The entire observation was approximately 90 seconds in duration. No observation of any object or projectile from the ground to the plane was witnessed..."

Accurate timing of [redacted] observations are necessary for the horizontal and descending portions of the observations made. [redacted] description—21.8 miles away from the initial explosion—never mentions anything ascending toward the aircraft before

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to FBI (8 Aug 97 ≈ 3:30 PM)

OTI Response to MSIC Concerns with CIA TWA-800 Analysis

(b)(6)
(b)(7)(c)

[MSIC concerns and comments, complete and in their entirety, are stated below in italics. CIA responses follow each question with important statements bolded.]

MSIC concurs with the CIA position that every witness saw the aircraft in distress. MSIC can not agree with the CIA conclusion that no witness saw the initial event. There are several witnesses that cannot be lightly disregarded and possibly may have seen something other than the aircraft.

The CIA position is that every witness describing an 'object' with ascending motion made their observations after the first explosion aboard TWA 800. No eyewitness saw the initial explosion. **And only a handful of witnesses saw the aircraft shortly after the initial explosion when the crippled aircraft rose to a higher altitude. A majority of witnesses saw events close to the end of the aircraft's crippled flight.**

CIA does not propose that all observations of 'ascending objects' are the aircraft and in fact believe that over 90 % of these observed something other than the aircraft ascending, possibly a fuel related event in the final seconds of the aircraft's descent toward the water. Nonetheless CIA believes it has shown that these observations occurred near the end of the aircraft's crippled flight where anything ascending would not be a missile.

The following are MSIC concerns:

1. Witnesses who report Left to Right (East to West) motion.

There are several witnesses who state they saw an object in the sky moving from left to right (East to West) prior to observing any explosions. These witnesses cannot be explained as seeing any portion of the aircraft trajectory proposed by CIA or other sources. (Examples are [redacted])

Of all witnesses analyzed by the CIA, 39 clearly describe either left to right or right to left motion for anything described as ascending. Of these, 24 describe right to left motion (generally consistent with the path of TWA-800) and 15 describe left to right motion (opposite the path of the aircraft). However, CIA assesses that all but two of these 15 witnesses describing an ascending 'flare' or 'firework' in a left to right motion made observations limited to the end of the aircraft's crippled flight (This point makes logical sense since the most visible explosions and fireball occurred in the last 15-20 seconds of the approximately 50 second crippled flight). The other two eyewitnesses made observations of longer duration but nonetheless were made after the first explosion on the aircraft. More importantly CIA does not believe this ascending object which a majority of eyewitnesses describe is the aircraft. The specific cause of this left to right

To CIA's knowledge, the CIA postulated flight path of TWA-800 is consistent with the NTSB chaired sequencing report for how the aircraft came apart. The main pieces of the aircraft breakup (front fuselage, back fuselage, and left wing) do correlate with the CIA-postulated scenario. CIA requests specific examples of inconsistencies if they exist.

— Have the landing lights been recovered? Were they on at the time of the crash? What position were the landing light switches in? If on, they would have provided an excellent homing source for some MANPAD missiles. If not, the statements of witnesses such as [redacted] who report seeing something like landing lights, should be examined further.

CIA agrees that questions regarding the landing lights should be addressed. Was power to the landing lights cut just after the initial explosion? CIA however questions exactly how this effects CIA analysis or the CIA scenario.

[redacted] a passenger aboard USAIR 217, describes '...noticed this large aircraft had what he took to be landing lights on, and could observe cabin lights on the vessel...watched the aircraft for approximately thirty to forty seconds...the aircraft exploded and a large round orange fireball appeared which seemed to emanate from the front area of the plane. The fireball was approximately twice the size of the aircraft. The plane seemed to stop in mid air "like a bus running into a stone wall - no forward motion". Approximately one second after the first explosion it exploded again and an orange and yellow fireball appeared, the size of which was about fifty to seventy five percent larger than the first explosion. This second explosion occurred almost in the same location as the first explosion and flame from this second explosion seemed to shoot towards the front of the aircraft ahead of the path of the vessel...'

From radar data and the positions of USAIR 217 in relation to TWA-800 at the time of the explosion, [redacted] observations described above would have occurred after the initial explosion aboard the aircraft. These observations are likely of the crippled aircraft on fire after the first explosion. Due to [redacted] position, above and behind TWA 800, it is doubtful he could have observed landing lights.

[redacted] describes "...what drew his attention to this aircraft was what he originally thought was the aircraft's nose light. The light was of an unusual intensity and was off color of the usual white light, being a brilliant yellow color...because of the brilliance and off color of the light, he believed that the oncoming aircraft may have an engine fire...observed the oncoming aircraft "inflight explosion", observed fire, and then two pieces of what he believes to be the oncoming aircraft going down, possibly the wings, parallel to the water..."

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The unusual nature of the light [redacted] observed probably is indicative of the aircraft's condition sometime after the initial explosion and after the front third of the aircraft had separated from the fuselage. The description of the large explosion and two pieces going down is consistent with the fireball and descent near the end of the aircraft's descent to the water. CIA does not believe that [redacted] observed landing lights of the crippled aircraft.

— Currently, it is unclear to DIA whether the sequence given in the Sequencing Report is of high confidence. If not, a cause other than a wing center section overpressure event may have initiated the aircraft failure.

CIA had no part in this work and therefore cannot comment on its accuracy. However, the sequencing report, as it stands, is consistent with CIA analysis.

— Sound of initial event - there appear to be inconsistencies between the cockpit voice recorder, the lack of any visual signature of the "initial event", and the statements such as "it shook the bridge". Further study should also be conducted to determine if the explosions might have created a shock wave that traveled faster than Mach. These issues must be resolved before credibility is given to the CIA-postulated scenario.

One of MSIC's concerns here may be that the loud sound which shook the bridge—although certainly produced sometime on the aircraft during its crippled flight—may not be the initial sound recorded by the aircraft cockpit voice recorder. The following response assumes that this sound which numerous eyewitnesses heard was not made by some other event unrelated or far removed from the aircraft at the time of its demise. CIA believes that there is no other source that can generate such a sound that we know of—not a missile launch or an earlier event aboard the aircraft not recorded by the cockpit voice recorder.

CIA has several reasons for believing that the loud sound, if not the one recorded, occurred very soon (a fraction of a second) after the recorded sound. If the loud sound occurred at a significantly later time, the aircraft would have continued its forward motion (at about 640 ft/sec), causing the loud sound to be created at a significantly different position than the one we used in our calculations. This, in turn, would have created anomalies as we compared the relative times at which the first sound arrived at various eyewitnesses.

CIA states in its briefing and video that the important point is that "no loud sound was created before the one at the end of the cockpit voice recording." If a loud sound was produced later, it would be even less likely that any eyewitness describing observations near hearing the first loud sound—that is near the end of the aircraft's crippled flight—could have seen a missile. This is because there would be even more time between the first explosion and when the aircraft hit the water—putting those

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eyewitness sightings of "an ascending streak" in conjunction with hearing a loud sound even further from the initial explosion.

Concerning the possibility of a shock wave that traveled faster than the speed of sound, CIA acknowledges that such phenomena do exist—from nuclear explosions, for instance. CIA does not believe that is what occurred here. First, CIA doubts that the explosion created enough energy to produce a sustained supersonic shock wave. Even thunder from a massive lightening strike only travels at the speed of sound. Second, if a sustained shock wave of this type had been created, eyewitnesses at varying distances from the initial explosion would have heard the sound at more closely spaced intervals than those we observed, and our calculations would have shown an inconsistency. Our calculations indicate that sound arrived at various eyewitnesses at about the appropriate relative time when we use a sound speed of 1,089 ft/sec. CIA remains comfortable with the postulated scenario as it stands.

— If a MANPAD missile was used against this aircraft, very few, if any, people would see the exhaust plume due to its small signature and its distance from the witnesses. Therefore, it is unwise to conclude that lack of witnesses means lack of missile.

The CIA position that a missile was not involved was based on several factors: 1) the fact that CIA believes no witnesses observed a missile fired (from CIA analysis), 2) the lack of physical evidence to date of a missile (no CIA involvement), 3) historical data of past portable SAM attacks on aircraft of this size which do not support a catastrophic loss of an aircraft like that of TWA-800 (CIA & FAA data), and 4) although shoulder-fired SAMs are kinematically capable of reaching the aircraft's altitude, TWA-800 was at the edge of the envelope of portable SAMs. **The CIA conclusion which has been given to the FBI is that no eyewitness observed a missile hitting the aircraft.**

CIA questions whether a portable SAM fired under the lighting conditions of July 17, 1996 would be visible to witnesses 10 miles away. Discussions with IR shoulder-fired SAM experts at China Lake as well as portable SAM operators at the Army Air Defense School in Ft. Bliss, El Paso, TX revealed mixed answers. CIA believes that some eyewitnesses could have seen a portable SAM burning propellant in the first 6 to 7 seconds of the missile's flight. CIA believes that it is unwise to immediately conclude that most, if not all, eyewitnesses could not see a portable SAM engage the aircraft at that distance.

Nonetheless, CIA proposes that identifying those few witnesses which may have potentially observed a missile and analyze each one in detail to look for similarities and/or differences in their observations with the majority of eyewitness reports. This type of independent analysis, similar to what CIA has done for several witnesses determined to be of highest concern, is required to build a case for a missile observation.

If a MANPAD missile was used against this aircraft, very few, if any people would see the exhaust plume due to its small signature and its distance from the witnesses. This is the fundamental problem in concluding that a lack of witnesses means lack of missile. In fact the reduction in number to a very small percentage of the overall witness reports is more consistent with a MANPADS theory than a large missile or any of the other proposed theories would be. It should be noted that a Boeing 747 falling out of a clear blue sky is an unusual event, and unusual testimony or witness accounts should not be discounted because they are initially unexplainable.

CIA does not conclude that lack of eyewitnesses means lack of a missile. **The CIA conclusion which has been given to the FBI is that no eyewitness observed a missile hitting the aircraft.** CIA agrees that it is unlikely that a majority of eyewitnesses would see a portable SAM engage TWA-800 under the conditions and distances of July 17, 1996. CIA is concerned that almost all eyewitness descriptions of 'ascending' objects are described as clearly visible, often with words like bright, brilliant, or intense. These are not words expected to be associated with something which is barely visible to the naked eye.

Nonetheless, CIA does not believe that a reduction in the number of possible witnesses which could have potentially seen a missile makes this theory any more valid than the bomb or mechanical theories. Due to the lack of physical evidence to support any of the three theories, a mechanical failure seems to be the most likely of any of the given theories (ie. more aircraft are lost from mechanical difficulties as opposed to bombs or missiles). In fact, **if the witness' observations of something ascending did not at first suggest that a potential missile was involved, the missile theory would likely not have been addressed at all. CIA analysis attempts to demonstrate that the witnesses did not see a missile.** The FBI must evaluate CIA analysis in context with all other information available in order to determine whether or not a missile was involved.

5. Recommendations.

Until reliable evidence is found in support of any specific cause, the effort to find physical evidence should continue.

Continue re-interviewing the witnesses. Look for leads to new witnesses. Continue to try to relocate witnesses such as [redacted] who appeared to have some interesting comments.

MSIC will continue to evaluate witness statements for trends and connections in an attempt to further our understanding of what witnesses saw.

CIA agrees with the above recommendations, however cautions that, due to the length of time passed since initial observations in July of 1996, future interviews should not be given any more confidence that interviews of these individuals conducted just after the incident. CIA proposes that MSIC and/or other agencies

construct alternative templates or postulated reconstruction of the aircraft's flight path which can then be evaluated with the witness reports as the CIA template has been.

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ascending motion near the end, if accurately described by some eyewitnesses, has not been determined, however, it is likely related to fuel burning. **CIA believes that since the eyewitnesses' observations are at the end, they could not have witnessed a missile approaching the aircraft, an event which would have had to have occurred over 40 seconds earlier.**

2. Sight and sound contradictions to the CIA-postulated sequence.

Many witnesses' reports of sound, in relation to visible explosions, do not fit with the sequence proposed by the CIA. For example, [redacted] *approximately 13-14 miles away, was cued by sounds, looked up and then saw something arc up and then down. Others are* [redacted]

Sound from the first explosion takes 42 seconds to reach the closest witness. **If sounds (related to the TWA-800 incident) were heard by any witness close to or at the time of their observations, they could not possibly have witnessed anything surrounding TWA-800 before the initial explosion.**

The main question regarding the sound analysis is what produced the loud sound that shook houses and a 70 ton bridge. Four possibilities exist. First, that the center fuel tank explosion on the aircraft produced it (CIA's position). Second, a MANPAD warhead caused the explosion. However, the small size of MANPAD warheads makes this unlikely. In addition, the sound analysis would not change, if a warhead detonation and the fuel tank explosion occurred simultaneously. Third, the launching of a MANPAD missile produced it. This would have to occur within 15 seconds prior to the center fuel tank explosion. Fourth, that the shock wave formed off the missile produced the sound. CIA believes that these last two situations could not produce the required sound. Therefore, CIA believes that only the first possibly source of the sound is realistic—the sound must have been produced when the center fuel tank exploded. This finding correlates with most, if not all, eyewitnesses.

From 302s available to CIA:

[Read below entry as Name/distance from initial explosion/time for sound to reach eyewitness for initial explosion/for second explosion/wing separation.]

[CIA comments to paraphrased eyewitness statements are underlined.]

[redacted]/71898 m/67.2sec/62.6 sec/54.8 sec - attention was drawn south by two claps of thunder. He then observed an orange/white glow diminishing in size as it moved away from him (thought it was flare or firework). He then heard more thunder and an orange ball of flames dropping toward the ocean.

For this eyewitness reporting to be true, the aircraft would have had to stay airborne for well over 67 seconds, which does not correlate with other corroborated analysis based on radar tracking and sound propagation. Therefore, CIA concludes that the observations of this eyewitness occurred after the aircraft was already in the water, and highlights the fact that the fuel burning on the water produced some phenomenon observed by eyewitnesses

[redacted]/53400 m/50.7sec/48.3 sec/42.9 sec - eyewitness heard loud explosion, and then one to one and a half minutes later, saw a large red globe of fire fall very slowly from the sky (30 seconds).

For this eyewitness reporting to be true, the aircraft would have had to stay airborne for at least 140 seconds (50+60+30). This does not match other eyewitness accountings. Therefore, CIA concludes that the observations of this eyewitness occurred after the aircraft was already in the water, and highlights the fact that the fuel burning on the water produced some phenomenon observed by eyewitnesses.

[redacted]/161704 m/149.0 sec/152.3 sec/161.9 sec - stated she saw a plane and something spiraling toward the plane. The object, which she saw for about one second, had a glow at the end of it and a gray/white smoke trail. She saw the object hit the plane, but it could have been the side or near the back. She then heard a loud noise and saw an explosion. The plane dropped towards the water and appeared to split into two pieces. A few seconds later she heard another explosion.

This eyewitness, over 161 km away from the explosion, could not have seen a missile in the air, nor is it likely she heard a loud sound. For a sound to be produced in TWA800's location to reach her, it would have had to be produced almost 100 seconds before the center fuel tank explosion. Therefore, either her location in the 302 is in error, or the eyewitness did not hear a sound. The eyewitness description does fit the final sequence in the aircraft's destruction, with the separation of the left wing. It is also likely that this event was the only one visible to eyewitnesses over 160 km away.

[redacted]/49692 m/47.4 sec/46.0 sec/42.1 sec - first noticed a red/orange glow in the sky, as it traveled easterly and grew in size. After two to three seconds, he heard the first of two explosions. A small fireball arched over and then, a second or two later, the second explosion occurred. This explosion caused a bigger, bright fireball. After the second explosion the large fireball fell down toward the horizon in two pieces.

From the description, CIA concludes that the eyewitness is observing events close to the left wing separation. The eyewitness claims he heard the first explosion one or two seconds prior to the fuel fire caused by the left wing separation. This puts the wing separation event at approximately 49 seconds (compared to CIA's estimate of 42

seconds). Although not corresponding exactly to CIA's estimate, if this number were correct, it would not substantially change the final conclusion.

[redacted]/57380 m/54.2 sec/51.0 sec/44.7 sec - observed a tiny, extremely bright orange glow at approximately 10,000 ft high and 7 to 8 miles to the west. The glow descended from west to east. When the glow reached 5000 ft, it increased in size and generated a trail of flames. At 1000 ft, it glow and flame became very large. About 30 seconds after the crash, he heard a "firecracker" type explosion and then an enormous explosion that rocked the house.

For the eyewitness description to be true, the sound producing event would have been produced approximately 35 seconds (54+30-49) prior to the center fuel tank explosion. Therefore, his sound observations cannot be related or must be incorrect.

[redacted]47034 m/45.0 sec/45.3 sec/44/1 sec - she noticed an aircraft climbing in the sky traveling from her right to her left. She noticed the aircraft appeared to level off. While keeping her eye on the aircraft, she observed a "red streak" moving up from the ground at an 45 degree angle. The red streak was leaving a light gray colored smoke trail. At the instant the smoke trail ended at the aircraft's right wing, she heard a loud sharp noise that sounded like a firecracker. She then observed a fire at the aircraft followed by on or two secondary explosions which had a deeper sound.

It would take sound from the first explosion approximately 45 seconds to reach [redacted]. The sounds which [redacted] heard had to have occurred at least 45 seconds earlier, long before the observation described of an ascending red streak. CIA believes [redacted] observations were of the end event similar to the large majority of eyewitness statements analyzed by CIA.

3. Aircraft flight path discrepancies.

A number of witnesses ([redacted]) who state that they watched the aircraft for some time before it exploded, describe its trajectory as horizontal before the explosion, then descending at a noticeable angle to the point of the large fireball. This clearly contradicts the CIA-postulated flight path, and needs to be explained.

In CIA analysis, the aircraft flew a large portion of the flight in what is more horizontal than vertical motion—illustrated in the video. Therefore, it is not surprising that a few eyewitnesses described horizontal motion. Of the ten eyewitnesses indicated above, only five actually describe horizontal motion before an explosion.

From 302s available to CIA:

[redacted] "...while keeping her eyes on the aircraft, [redacted] observed a "red streak" moving up from the ground toward the aircraft at an approximately 45 degree angle. The red streak was leaving a light gray colored smoke trail. The red streak went past the right side and above the aircraft before arching back toward the aircraft's right wing... [redacted] heard a loud sharp noise which sounded like a firecracker had just exploded at her feet. [redacted] then observed a fire at the aircraft followed by one or two secondary explosions which had a deeper sound..."

[redacted] described only a few seconds of horizontal motion before describing the above. [redacted]—8.9 miles away from the initial explosion—described an ascending "red streak" with end game performance beyond the capability of any shoulder fired missile. In addition, it would take sound from the first explosion approximately 45 seconds to reach [redacted]. The sounds which [redacted] heard had to have occurred at least 45 seconds earlier, long before the observation described of an ascending red streak. CIA believes [redacted] observations were of the end event similar to the large majority of eyewitness statements analyzed by CIA.

[redacted]: "...heard the sounds of an aircraft...observed a large commercial aircraft flying west to east and south of his location, probably over water. The aircraft had an unusual amount of black smoke spewing from the wing area...a second later, he glanced again and saw what he described as a "red glow" or "red dot" on the aircraft...see the airplane nosing at an angle towards the ground...disappeared behind trees in the horizon...heard a blast and saw a red flash through the trees and extending upwards..."

[redacted] described an already crippled aircraft with some horizontal motion just prior to a large explosion and descent. This is consistent with the CIA scenario. [redacted]—14.8 miles away from the initial explosion—indicates no ascending motion and that the aircraft observed was in trouble from first observations, spewing black smoke. No missile could therefore have been observed required to have occurred before these observations. The red glow or dot observed was very likely the final fireball close to the end of the crippled aircraft's descent.

[redacted]: "...attention was drawn to an unusual movement in the sky...it moved more quickly than any plane from north to south, low above the horizon at an almost flat trajectory, but was traveling slightly up. It was shiny and silver like a dime, but at times had a blue gray shadow like a plane...followed the object for approximately 2 or 3 seconds when she then noticed a large commercial airliner which appeared to be traveling at the same altitude, "just stop" and begin to disintegrate..."

[redacted] observation of a somewhat flat trajectory for only a few seconds could be consistent with the CIA scenario. [redacted]—16.9 miles away from the initial explosion—described an object on a trajectory, although slightly up, which is generally not consistent with enough vertical motion expected of a missile attacking flight

800 at 13,800 feet. In addition, not shown in the above extraction from the eyewitness statement, but clearly evident in the statement's entirety, is an extraordinary amount of detail of the event, which as well as being generally inconsistent with other eyewitness descriptions, was not possible at 16.9 miles from the initial event. [redacted] did not see a missile.

[redacted]: "...watched the aircraft for approximately thirty to forty seconds...the aircraft exploded and a large round orange fireball appeared which seemed to emanate from the front area of the plane. The fireball was approximately twice the size of the aircraft. The plane seemed to stop in mid air "like a bus running into a stone wall - no forward motion". Approximately one second after the first explosion it exploded again and an orange and yellow fireball appeared, the size of which was about fifty to seventy five percent larger than the first explosion. This second explosion occurred almost in the same location as the first explosion and flame from this second explosion seemed to shoot towards the front of the aircraft ahead of the path of the vessel..."

From [redacted] description, the inference is toward horizontal motion which is consistent with the CIA scenario. From the magnitude of the large explosions and fireball described by [redacted] as well as the position of the aircraft he was a passenger on relative to flight 800 when it exploded, CIA believed [redacted]—2.3 miles away from the first explosion—witnessed the aircraft sometime before the large explosion at the end. Absolutely nothing in his description would suggest he saw a missile hit the aircraft.

[redacted] From [redacted] first interviews of 7/23/96: "...a white spark (meteor) that went up and arched across the sky. A short time later (seconds) [redacted] observed an orange fireball in the sky to the south of the bridge. The fireball fell out of the sky. The firework that [redacted] had previously observed was traveling in the direction at the fireball. Seconds after observing the fireball, [redacted] heard and felt one explosion..."

From [redacted] second interview of 7/29/96: "...white light traveling skyward at approximately a 40 degree angle. [redacted] described the white light as a light that sparkled and thought it was some type of fireworks. [redacted] stated the white light "zig zagged" as it traveled upward and at the apex of its travel, the white light "arched over" and disappeared from [redacted] view. [redacted] estimated the white light was in view for approximately 15 seconds and its speed was consistent with the speed that normal fireworks might travel...two or three seconds after the white light disappeared, he saw an orange light that appeared to be a fireball in the sky...the fireball descended at approximately a 30 degree angle and left a fire trail burning behind it...after the fireball disappeared behind the house, he heard the first of four explosions..."

From [redacted] third interview of 2/10/97: "...when his attention was first drawn to the sky, the object that he saw was approximately twenty five feet above the fourth house on Dune Road...He described the object as resembling a fireworks rocket, but it did not

appear to be trailing smoke. He stated that it appeared to be "sparkling"...the object which he observed rise in the sky did so almost vertically, but appeared to arch subtly from his left (East) to his right (West)... stated that his observations occurred in the following sequence: first he saw the object ascend, next this object seemed to disappear for a split-second then he saw a red fireball which then descended to horizon and behind house number two..."

describes no horizontal motion with perhaps the exception of the arch over portion of the trajectory which is consistent with the CIA scenario. With the exception of third interview where he describes a slight left to right motion and almost completely vertical ascent for the object, description could match the CIA projected flight path. However, it is absolutely necessary to have total observation time for — 11.1 miles away from the initial explosion—to know when exactly these observations were made. It is worth noting that third interview is contrary to his second in terms of the angle of ascent.

: "...observed a white ball shooting across the sky...it looked like a shooting star...the white ball traveled on an arc from right to left (approximately west to east). The arc traveled on a decline from its initial sighting...the ball exploded into a large whitish gray ball of smoke. Then a wide orange/reddish flame traveled upward to the smoke ball. Shortly after the wide flame disappeared, two strong earthquake type rumblings were felt and heard. advised that the entire incident occurred in ten seconds or less..."

—11.5 miles away from the initial explosion—did not indicate that he observed any horizontal motion. It is important to note that he saw something ascending well after he first observed something streaking across the sky in a downward motion (most likely the crippled aircraft). This observation is consistent with a majority of eyewitnesses describing something ascending skyward near the end of the aircraft's crippled flight (the last 10-20 seconds of crippled flight) in terms of what was observed and the timing of these observations. clearly states that he saw something ascend but it could not have been a missile.

: "...a shooting star, moving in a downward, forty-five (45) degree sloping arc...it had rolled over onto it's left side, and seemed to be hooking northward and downward. Immediately, the entire right wing separated from the fuselage, and peeled back, alongside the fuselage.. stated that at the instant the wing separated, a large "fire trail" erupted, which he described as a roaring, rushing sound, and added that he immediately felt a concussion on his chest when this happened..."

—8 miles away from the initial explosion—the closest eyewitness on the water to the incident, mentions no horizontal or ascending motion. He did not observe a missile. His descriptions are entirely consistent of the CIA proposed trajectory of flight 800 as far as timing and aircraft orientation during the last 30 seconds or so.

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statement establish the approximate time of the large explosion and fireball aboard the aircraft by the time it takes sound from the initial explosion to reach him.

[redacted] "...The flare traveled in a west to east direction for what he estimated was approximately 20 seconds, at which time it started to descend in a curved descent and the same speed. [redacted] estimated that this curved descent lasted about 10 seconds when the flare then opened up in a bottle or cup shape that was red in color. A second or so later, this shape expanded outward on both sides in two pieces..."

[redacted]—20.8 miles away from the initial explosion—observing no ascending motion, could not have observed a missile. However, his description of the motion of the crippled aircraft could challenge the CIA proposed trajectory if his timing for the horizontal time of crippled flight is accurate. However, this portion of his description is not consistent with so many other witnesses which describe a flight path consistent with the CIA template, both in general flight path and in timing. The descending portion of [redacted] description, 'about 10 seconds', before the large fireball described above in which the wing separated from the fuselage, would be described by the CIA proposed trajectory as taking about 25 seconds or so from the aircraft's horizontal motion at its highest attained altitude. CIA is comfortable that very many more witnesses are consistent with this trajectory and timing than not, but acknowledge this discrepancy in [redacted] statement. Nonetheless, CIA stressed again that [redacted], describing no ascending motion, could not have seen a missile.

[redacted]: "...noticed a red light on the object and though 15-20 miles out, assumed it to be a plane. Suddenly the plane took an unusual, 45 degree dive with no visible flames or smoke. Below the tree top line, a large reddish, flaming fireball immediately rose above the tree line, where the plane had descended. The entire observation was approximately 90 seconds in duration. No observation of any object or projectile from the ground to the plane was witnessed..."

Accurate timing of [redacted] observations are necessary for the horizontal and descending portions of the observations made. [redacted] description—21.8 miles away from the initial explosion—never mentions anything ascending toward the aircraft before any observations of an aircraft in trouble. CIA therefore concludes that this eyewitness could not have seen a missile. In fact the description given for the flight path of the aircraft could be consistent with the CIA proposed trajectory if the observations were made of the aircraft as it was at its highest attained altitude and arching over for several seconds just prior to making its descent toward the ocean. This would also be more consistent with the lengthy time of observations made by the witness. The fireball observed near the tree line is probably the final fireball described so vividly by a majority of eyewitnesses. It is important to note that the fireball was described as "rising above the tree line" similar to so many other witnesses describing an ascending "firework" or "flare"

just prior to or coincident with a large fireball and the aircraft's final moments before it hit the water.

[redacted]: "...saw a plane and noticed an object spiraling toward the plane. The object, which she saw for about one second, had a glow at the end of it and a gray/white smoke trail. [redacted] stated she saw the object hit the plane and then the object headed down toward the ocean....she heard a loud noise and saw an explosion just as the object hit the plane. The plane dropped towards the water and appeared to split in two pieces. A few seconds later, she heard another explosion..."

The horizontal motion of the aircraft, described for about one second, is consistent with the CIA scenario. Sound from the first explosion would reach [redacted]—30.6 miles away from the initial explosion—149 seconds after the first explosion. She states that she saw the object strike the plane one second before this. These observations could not be of the aircraft in its demise if the timing described by the eyewitness for hearing sounds is accurate. If taken at face value, the eyewitnesses statement would suggest that she could not therefore have seen anything near the beginning of the aircraft's crippled flight. If taking the witnesses description of when she heard sounds with a grain of salt—that is assuming she was substantially off on when she heard sounds—and specifically addressing her visual observations, one must question the vivid details described from an eyewitness over 30 miles from the point of the initial explosion aboard flight 800. Nonetheless, the gist of her description, without coincident sound, is still generally consistent with the CIA proposed sequence of events near the end of TWA-800's flight path, in which it is known that something ascended toward the aircraft moments before it impacted the water.

4. Timing and locations of the aircraft during breakup:

To date, the proposed timing and locations of the aircraft and pieces during breakup still appear to be uncertain. Further effort should be expended, especially on analysis of all of the radar data, to determine when and where the breakup began and how the pieces fell. An accurate reconstruction is essential to allow for a complete understanding of the event.

CIA agrees that analysis of all radar data would go a long way toward a better understanding and more accurate reconstruction of the breakup of the aircraft and its crippled flight. CIA requests from the FBI all radar data available for additional analysis as well as any inputs from other sources of information which could shed additional insight into a better understanding of the event.

5. Other issues.

— Proposed flight path and sequence must be consistent with sequence of events determined from the aircraft wreckage.

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APPROVED FOR RELEASE DATE: 30-Mar-2012

MEMORANDUM FOR: [redacted] 23 September 1997

FROM: [redacted]

OFFICE: OTI

SUBJECT: TWA Flight 800 Narrative for DCI

REFERENCE: [redacted] ..Per your request. --- [redacted]

The paragraphs which follow can be used as a response to media questions regarding CIA's involvement with the FBI in the criminal investigation of the crash of TWA Flight 800 ---

At the request of the FBI, missile analysts at the CIA have been working closely with FBI special agents during the past 14 months to examine the hypothesis that a missile was used to shoot down TWA Flight 800. Terrorism angle. The possibility existed that this was an act of foreign terrorism.

Of particular concern to FBI investigators were reports from dozens of eyewitnesses who, on the evening of 17 July 1996, recalled seeing an object --- usually described as a "flare" or "firework" --- ascend and culminate in an explosion. Many people have postulated that these eyewitnesses saw a missile destroy the aircraft.

CIA's detailed technical analysis concludes that what these eyewitnesses saw was, in fact, only the burning Boeing 747 in various stages of crippled flight --- not a missile. Based on "sound propagation" analysis using 244 eyewitness reports, radar data, infrared data, and cockpit recorder information, CIA analysts have determined that the eyewitness sightings thought to be of a missile actually took place after the first of several explosions on the aircraft.

FYI DCI **In addition to the technical support provided by CIA to the FBI during the past year, the CIA is just completing a 16-minute video (*"TWA Flight 800: What Did the Eyewitnesses See?"*) which explains how this conclusion was reached. And within the next 60 days, a detailed written report will be delivered to the FBI.**

While neither the information used in CIA's analysis nor the analytical methodologies applied are classified, CIA has treated its involvement in this work as sensitive. Last week, in letters to several congressmen, and at a press conference, the FBI credited CIA with working on the investigation. In this week's issue of Aviation Week, CIA's assistance to the FBI is the focus of a full-page article. (Article attached)

We anticipate that public questions about CIA's involvement will soon begin. Public hearings on the investigation are scheduled to take place in December.

Christopher M. Holmes

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