



Memorandum

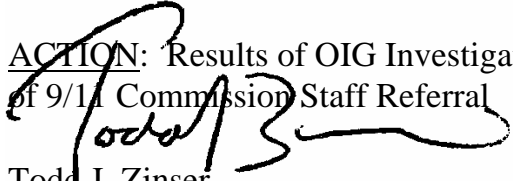
U.S. Department of
Transportation

Office of the Secretary
of Transportation

Office of Inspector General

Subject: ACTION: Results of OIG Investigation
of 9/11 Commission Staff Referral

Date: August 31, 2006

From: 
Todd J. Zinser
Acting Inspector General

Reply to
Attn of:

To: The Acting Secretary
Federal Aviation Administrator

Introduction

By letter dated July 29, 2004, the General Counsel for the *National Commission on Terrorist Attacks Upon the United States*, on behalf of the Commission staff, referred to the Department of Defense (DOD) and Department of Transportation (DOT) Inspectors General information concerning several inaccurate statements made by DOD and Federal Aviation Administration (FAA) officials regarding FAA notifications to DOD about the airplane hijackings on September 11, 2001. The letter noted that the Commission, which would “sunset” on August 26, 2004, did not investigate whether the inaccurate statements were knowingly false; thus, the Commission staff’s referral noted that this information was being provided to the Inspectors General for appropriate action.

Based on the Commission staff’s referral, our office investigated whether FAA officials knowingly made any false statements. We also investigated whether FAA officials intentionally omitted accurate information from any statement or failed to correct an inaccurate statement after becoming aware of it. Separately, but in coordination with our office, the DOD Office of Inspector General (OIG) undertook a similar review with regard to the actions of DOD officials, namely North American Aerospace Defense Command (NORAD) officials.

In addition to conferring with Commission staff, our investigation included interviews of 34 current and former FAA and other DOT officials, government contractors, and other private citizens, and we examined voluminous records. Specifically, we reviewed the Commission’s Final Report, Commission Staff Statements, transcripts of

Commission hearings, written statements presented to the Commission, and memoranda and transcripts of numerous interviews conducted by the Commission. Additionally, we reviewed documents chronicling the events of September 11, as well as over 1,000 other documents, including air traffic control transcripts and FAA and DOD event logs, emails, faxes, memoranda, and correspondence. We also assigned an investigator to assist DOD/OIG in its review.

Results in Brief

1. We did not find evidence to conclude that FAA officials knowingly made false statements, purposely omitted accurate information from any statement, or intentionally failed to correct any inaccurate statement after becoming aware of it, regarding FAA notifications to DOD about the September 11 hijackings.
2. Our investigation disclosed that FAA inaccurately reported on its public website in 2002 that FAA notified DOD of the suspected hijacking of American Flight 77 at 9:24 a.m. on September 11. (In fact, no such notification was made.) FAA officials promptly corrected this error—which we attribute to FAA’s reliance on an erroneous timeline entry—after we brought it to their attention in Fall 2004.
3. We found that in its response to a May 22, 2003, Commission Question for the Record (QFR), FAA again inaccurately reported that it had notified DOD about American Flight 77. This, too, we attribute to FAA’s reliance on an erroneous timeline entry.
4. While investigating FAA’s QFR response, we found that it also inaccurately reported that the Air Force Liaison to FAA had joined an FAA headquarters phone-bridge and established contact with NORAD “immediately” following the crash of the first aircraft (American Flight 11) into the World Trade Center at 8:46 a.m. In fact, the Liaison did not join the phone-bridge until after the third hijacked aircraft (American Flight 77) struck the Pentagon at 9:37 a.m.

We further found that three FAA executives (two current and one now-retired) learned of this inaccuracy from the Liaison shortly following FAA’s submission of the QFR response. The two current FAA executives told us they thought the Liaison, when interviewed by Commission staff, would correct the inaccuracy. However, the Liaison told us that no one at FAA spoke to her about making a correction and she did not address this issue when interviewed by Commission staff. As a result, this inaccuracy was not corrected with the Commission.

5. During our investigation, we also reviewed FAA's post-September 11 capability to notify federal agencies about a hijacked or suspicious aircraft, as well as FAA's capability to investigate its handling of a hijacked or suspicious aircraft. We found that FAA acted to improve these capabilities, including:

- Establishing the Domestic Events Network (DEN), a nationwide, continuously open telephone line managed by FAA, designed to allow federal agencies with jurisdiction over the security of U.S. airspace to communicate information in real-time.
- Instituting new procedures for air traffic controllers on communicating information about a hijacked or suspicious aircraft over the DEN.
- Installing equipment to record most FAA Washington Operations Center Complex (WOCC) telephone lines. (Prior to September 11, FAA did not record any WOCC telephone lines.)

Based on our findings detailed below, we are making recommendations to the FAA Administrator for enhancing FAA's capability to respond to and report on hijacked or suspicious aircraft. We are also recommending that FAA correct its response to the Commission's QFR and consider appropriate administrative action for the two current executives who did not act to correct the record with the Commission. As a mitigating factor, and to provide some context, we note that at the time, the FAA, including these executives, produced over 6,000 documents and materials to the Commission.

Details

Background on Commission Staff Referral

As part of its statutory mandate to investigate the "facts and circumstances relating to the terrorist attacks of September 11, 2001," the Commission examined the interaction between FAA and DOD. The Commission's findings included the specific hours and minutes when FAA notified DOD about the four hijacked aircraft. The summary chronology for each of the hijacked flights from the Commission's Final Report is attached as Appendix 1.¹

¹ The Commission's summary chronology did not list a notification time for United Flight 175; however, included in the body of the Commission's Final Report is the statement that at 9:03 a.m., at approximately the same time United Flight 175 struck the World Trade Center, FAA advised DOD that the aircraft might have been hijacked.

The Commission staff's July 29, 2004, correspondence identified the following inaccurate statements made by FAA and NORAD officials regarding the times at which FAA notified NORAD that United Flight 93 and American Flight 77 had been hijacked:

1. During the Commission's May 23, 2003, hearing, a retired NORAD Colonel inaccurately testified that FAA notified DOD at 9:24 a.m. that American Flight 77 had been hijacked. The Commission found that FAA never notified DOD that American Flight 77 had been hijacked. Instead, it found that, at 9:34 a.m., three minutes before American Flight 77 crashed into the Pentagon, FAA advised NEADS that American 77 was "missing."²
2. FAA officials, despite having documents containing an accurate time within their possession, omitted from FAA's September 17, 2001, "Summary of Air Traffic Hijack Events," the time at which FAA notified the NORAD's Northeast Air Defense Sector (NEADS) that United Flight 93 had been hijacked. The Commission found that FAA notified NEADS at 10:07 a.m. that United Flight 93 had been hijacked.
3. NORAD's September 18, 2001, press release inaccurately stated that the time of FAA's notification to DOD that United Flight 93 had been hijacked was "N/A," i.e., "not applicable." The Commission found the accurate time was 10:07 a.m. (NORAD's press release, captioned "NORAD's Response Times" is attached as Appendix 2.)
4. During the Commission's May 23, 2003, hearing, the same retired NORAD Colonel inaccurately testified that FAA notified DOD at 9:16 a.m. that United Flight 93 had been hijacked. The Commission found the accurate time was 10:07 a.m.

The Commission staff concluded that FAA officials had accurate information concerning the above four statements. Thus, the Commission staff referred to us the questions of whether FAA officials knew the above four statements were inaccurate and, if so, why they failed to correct them. We investigated these questions and also whether FAA officials intentionally omitted accurate information from any statement or failed to correct an inaccurate statement after becoming aware of it.

² The Commission staff also identified two other inaccurate statements made by the NORAD Colonel at the May 23, 2003, hearing. Because those statements involved actions by DOD officials, not FAA officials, they were investigated by DOD/OIG.

Investigative Findings

- 1. We did not find evidence to conclude that FAA officials knowingly made false statements, purposely omitted accurate information from any statement, or intentionally failed to correct any inaccurate statement after becoming aware of it, regarding FAA notifications to DOD about the September 11 hijackings.**

- a. FAA's September 17 and 18 documents chronicling the events of September 11

We found that shortly following September 11, 2001, an FAA executive (now retired), his subordinate manager (now an executive), and their staff created two documents chronicling the events of September 11. The first document, dated September 17, 2001, was entitled "Summary of Air Traffic Hijack Events." FAA officials told us this document was prepared for, and circulated to, FAA, DOT, and other government agencies. The second document, untitled and dated September 18, 2001, was prepared for FAA internal use. These two documents (attached at Appendices 3 and 4) served as the principal sources for other FAA documents chronicling the events of September 11.

In preparing the September 17 and 18 documents, the FAA executive cited the Air Force's NEADS log and also had available a transcript from FAA's Cleveland Air Route Traffic Control Center. Both of these documents correctly recorded FAA's notification to DOD about the hijacking of United Flight 93 as having occurred at 10:07 a.m. Despite the availability of this accurate information, FAA's September 17 "Summary of Air Traffic Hijack Events" is silent as to the time of FAA's notification to DOD for United Flight 93.

Similarly, FAA's September 17 "Summary" is silent as to FAA's notification to DOD about American Flight 77. The Commission found that FAA never notified DOD that American Flight 77 had been hijacked. Instead, the Commission found that at 9:34 a.m., three minutes before American Flight 77 crashed into the Pentagon, FAA advised NEADS that American Flight 77 was "missing."

FAA's September 18 chronology document erroneously listed FAA's notification time to DOD about American Flight 77 as 9:24 a.m. The FAA executive, who was responsible for preparing the document, told us that he cited the NEADS log as the source for the 9:24 a.m. entry. We found, however, that he failed to cross-check the tail number listed for the American Airlines aircraft in the 9:24 a.m. entry. Had he done so, he would have discovered that the aircraft identified was American Flight 11,

not Flight 77.³ Therefore, we concluded that, because of the executive's lack of attention to the details in the NEADS log, he mistakenly believed that FAA had notified DOD of the hijacking of American Flight 77 at 9:24 a.m.

Further, the September 18 document inaccurately reported that the notification time for United Flight 93 was "N/A," i.e., "not applicable," when, in fact, the NEADS log and the Cleveland Center transcript both accurately show that FAA notified DOD of the hijacking of United Flight 93 at 10:07 a.m., four minutes after the aircraft crashed in Pennsylvania.⁴

We interviewed the FAA executive and manager separately and each told us that at the time they prepared the September 17 and 18 chronology documents, they did not believe they had an accurate notification time for United Flight 93, and for that reason they listed "N/A," meaning "not applicable." (We note that they took no further action to establish an accurate notification time.) We also interviewed other members of their staff, who did not contradict the rationale of the executive and manager for the lack of a notification time. We do not find this explanation to be reasonable because the NEADS log—which the executive and manager cited was the source of the notification times for the three other hijacked aircraft—and the transcript from FAA's Cleveland Center (which was also available to them) show the correct notification time for United Flight 93. However, while we could not determine whether these officials omitted the correct notification time for United Flight 93 for any reason other than what they told us, we considered two alternative possibilities:

First, we considered whether the FAA executive and manager may have adopted the "N/A" entry from NORAD's September 18, 2001, press release, a September 17 draft of which FAA's Office of Public Affairs had obtained. It is possible, for example, that the "N/A" entry in NORAD's press release created uncertainty on the part of the FAA executive and manager about the United Flight 93 notification time as they were preparing FAA's September 18 chronology document. Thus, they may have deferred to the NORAD release. However, despite the coincidence of the "N/A" entry in both NORAD's press release and FAA's September 18 document, when we addressed this possibility during our interviews, the FAA executive did not recall, and the manager denied, having seen any draft of NORAD's press release. We investigated the extent to which FAA and DOD collaborated on their chronologies of events of September 11. However, neither DOD/OIG's investigation nor our investigation

³ This entry in the NEADS log was based on an erroneous report that American Flight 11 was headed toward Washington, DC.

⁴ These two documents, along with multiple other drafts and versions of FAA's September 11 chronology, were obtained by the Commission pursuant to its mandate. Nonetheless, the Commission was able to produce an accurate chronology that is the definitive record of the events of September 11.

established any direct coordination between DOD and FAA officials regarding the chronologies.

Second, we considered whether the FAA executive and manager may have purposely omitted the notification time to avoid disclosing that FAA did not notify DOD until approximately four minutes after United Flight 93 had crashed. We asked them about this and they denied it. Further, we discounted this possibility because both the September 17 and 18 documents they produced reported that FAA had not notified DOD of the hijacking of United Flight 175 until approximately two minutes after it crashed into the World Trade Center. We found no evidence to explain why the executive and manager would have purposely omitted one after-the-fact notification and not the other.

Based on our investigation and factoring in the potential for human error under the circumstances that existed during the week following September 11, and the limitations of their recollections, we did not find evidence to conclude that the FAA executive and manager omitted the correct notification times for American Flight 77 and United Flight 93 for any reason other than what they told us.

b. NORAD press release dated September 18, 2001

The Commission staff questioned why FAA officials did not correct NORAD's September 18, 2001, press release, which inaccurately stated that the time NORAD was notified by FAA that United Flight 93 had been hijacked was "N/A," i.e., "not applicable." As addressed above, the FAA executive and manager maintained that they did not believe they had an accurate notification time for United Flight 93.

c. Retired NORAD Colonel's testimony of May 23, 2003

The Commission staff also questioned why FAA officials did not correct the retired NORAD Colonel's May 23, 2003, testimony in which he stated, erroneously, that FAA notified DOD at 9:16 a.m. on September 11 that United Flight 93 had been hijacked. During our interviews, only an FAA executive who attended the hearing acknowledged being aware of the Colonel's testimony. This FAA executive initially recalled having been "upset" about the timeline in the Colonel's testimony, and, immediately following the hearing, unsuccessfully attempted to speak with a NORAD official about inaccurate notification times in that timeline. However, following our interview and after reviewing the Colonel's testimony at our request, the FAA executive advised us that her recollection was it was not the timeline about which she attempted to talk to the NORAD official. Rather, she advised, she tried to tell the NORAD official that the Colonel did not include in his testimony information about

the phone-bridge that was established between FAA headquarters and DOD on September 11.

Finally, the Commission staff questioned why FAA officials did not correct the NORAD Colonel's May 23, 2003, testimony, in which he inaccurately stated that FAA notified DOD at 9:24 a.m. that American Flight 77 had been hijacked. As addressed above, we found that because of the executive's lack of attention to the details on the NEADS log, he mistakenly believed that FAA had notified DOD of the hijacking of American Flight 77 at 9:24 a.m. Thus, we concluded that it would have been reasonable for any FAA official aware of the Colonel's testimony about FAA's notification time for American Flight 77 to have believed it was accurate because his testimony was consistent with FAA's erroneous chronology.

2. Our investigation disclosed that FAA inaccurately reported on its public website that FAA notified DOD of the suspected hijacking of American Flight 77 at 9:24 a.m. (In fact, no such notification was made.) FAA officials promptly corrected this error, which we attribute to an erroneous timeline entry, after we brought it to their attention in Fall 2004.

We found that FAA posted its September 11 chronology in two documents on its public website. The first document, undated, was entitled *FAA Responds*.⁵ The second document, dated August 12, 2002, was an FAA "fact-sheet" entitled *Chronology of Events on September 11, 2001*.⁶ Both erroneously stated:

0924. The FAA notifies NORAD's Northeast Air Defense Sector about the suspected hijacking of American Flight 77.

In fact, as previously addressed in this report, FAA never made such a notification. After we brought this inaccuracy to FAA's attention (in September 2004 on the first document and October 2004 on the second), the agency deleted it from each document. We found no evidence to indicate that anyone at FAA posted these documents knowing they were inaccurate. Instead, we found that FAA's Office of Public Affairs, which was responsible for preparing the documents posted on the website, relied upon inaccurate documents chronicling the events of September 11.

⁵ See www.faa.gov/Sept11portraits/chronology.cfm

⁶ See www.faa.gov/newsroom/factsheets/2002/factsheets_020812.htm

- 3. We found that in its response to a May 22, 2003, Commission Question for the Record (QFR), FAA again inaccurately reported that it had notified DOD about American Flight 77. This, too, we attribute to FAA's reliance on an erroneous timeline entry.**

On May 22, 2003, former FAA Administrator Jane Garvey testified before the Commission. During the hearing, she was asked the time at which FAA notified DOD about American Flight 77. Because Administrator Garvey did not have this information at hand, she told the Commission she would provide a response for the record that evening. FAA's response to the Commission's QFR, captioned "FAA Communications with NORAD on September 11, 2001," which was submitted on the night of May 22, 2003, and read into the Commission hearing record on May 23, 2003, inaccurately reported that FAA notified DOD about American Flight 77 at 9:24 a.m. (FAA's response to the Commission's QFR is attached as Appendix 5.)

We determined that FAA's QFR response was prepared by a now-retired FAA executive and two current executives. We found that because these three executives had relied upon inaccurate FAA documents chronicling the events of September 11, they believed FAA notified DOD of the hijacking of American Flight 77 at 9:24 a.m. We did not find evidence that these three executives knew that FAA never notified DOD that American Flight 77 had been hijacked.

- 4. We also found the QFR response to be inaccurate regarding the time at which the Air Force Liaison to the FAA joined an FAA headquarters phone-bridge about the hijackings. We determined that three FAA executives learned of this inaccuracy shortly following FAA's submission of the QFR response, but did not act to correct the record with the Commission; consequently, it was never corrected.**

We found that the QFR response incorrectly related that the Air Force Liaison to FAA joined the FAA phone-bridge on the hijackings and established contact with NORAD "immediately" following the crash of the first aircraft (American Flight 11) into the World Trade Center at 8:46 a.m. In fact, the Liaison did not join the phone-bridge until after the third hijacked aircraft (American Flight 77) struck the Pentagon at 9:37 a.m. The Air Force Liaison told us:

I was enroute to the [FAA headquarters] building when the first plane hit the World Trade Center. ... [S]o probably five, ten minutes after that, I got to the building. ... I went to my office. Everybody was there around the TV. We watched the events unfold. At first, we were kind of hanging back and saying, you know, there's something awful going on with the air traffic system[.] ... But at a certain point, not too long after that, it became

obvious that, you know, something really strange is going on and so ... I relocated. I went upstairs to the 10th floor. ... It was right after the airplane hit the Pentagon.

The now-retired FAA executive told us she learned during a conversation with the Air Force Liaison, which she told us may have occurred on the same day that FAA's QFR response was read into the record, that the response was inaccurate regarding when the Liaison joined the phone-bridge. The other two FAA executives also told us that they learned from speaking with the Liaison that the QFR response was inaccurate. One executive told us that she spoke with the Liaison within a few weeks of the submission of the QFR response, the other executive told us she spoke to the Liaison by the end of the summer. None of these executives, however, informed the Commission of the inaccuracy.

The now-retired executive told us she knew the other two executives were aware of the inaccuracy and assumed they would correct it. The two current executives told us they thought that the Air Force Liaison, when interviewed by Commission staff, would tell the staff that she did not immediately join the phone-bridge on September 11. The Air Force Liaison told us that no one at the FAA spoke to her about correcting FAA's QFR response during her Commission staff interview and she did not address the response when interviewed. Therefore, no one corrected this inaccuracy.

In our view, these FAA executives had an affirmative obligation to correct FAA's May 2003 response to the Commission's QFR directly with the Commission, as opposed to relying on the Air Force Liaison to do so. Part of the Commission's mandate was to examine, and accurately report on, the interaction between FAA and DOD on September 11. The time at which the Air Force Liaison joined the FAA headquarters phone-bridge and established contact with NORAD was relevant to the Commission's mandate.

5. After September 11, FAA improved its capability to notify federal agencies about, and investigate its handling of, hijacked or suspicious aircraft.

While investigating statements about FAA's notifications to DOD about the hijackings on September 11, we also reviewed FAA's post-September 11 capability to notify federal agencies about a hijacked or suspicious aircraft, as well as FAA's capability to investigate its handling of a hijacked or suspicious aircraft. We found that FAA acted to improve these capabilities.

a. FAA established the Domestic Events Network (DEN).

The DEN is a nationwide, open telephone line that allows federal agencies with jurisdiction over the security of U.S. airspace to share, in real-time, information about a hijacked or suspicious aircraft. It is managed by FAA in its Washington Operations Center Complex (WOCC). Some of the agencies and organizations that continuously monitor the DEN include: DOD (NORAD and NEADS), FAA air traffic field facilities, and the Department of Homeland Security.

b. FAA now records Washington Operations Center Complex telephone lines.

Prior to September 11, FAA did not have the capability to record telephone lines in the WOCC. FAA now records most WOCC telephone lines, including the DEN. Though there is no FAA policy on retention of the recordings from those lines, they are kept for six months as a matter of practice. Priority telephone lines used by the Secretary, the Administrator, and Deputy Administrator, and the lines used for classified voice and video communications, remain unrecorded.

c. FAA instituted new procedures for air traffic controllers on communicating information about a hijacked or suspicious aircraft over the DEN.

On September 11, three FAA divisions—Air Traffic, Civil Aviation Security, and the Office of the Deputy Administrator—were responsible for FAA’s response to a hijacked or suspicious aircraft. We discovered five procedures or protocols, three for Air Traffic and two for the Deputy Administrator and Civil Aviation Security staffs, regarding how information was to be provided to DOD about a hijacked or suspicious aircraft. We found that these pre-September 11 procedures provided indirect lines of communication from air traffic controller to DOD about a hijacked or suspicious aircraft. As the Commission concluded in its final report, in this regard, FAA’s “existing protocol was unsuited in every respect.”

Following September 11, FAA issued a new policy, “Aircraft Hijack and Suspicious Inflight Activities—Response and Notification Procedures,” that requires air traffic control facilities to directly report a hijacked or suspicious aircraft to the DEN.⁷ However, four of the five pre-September 11 procedures also remain in effect. In order to avoid confusion about which FAA procedures govern FAA’s response to a hijacked or suspicious aircraft, we are recommending that FAA review its procedures and eliminate those that are inconsistent or duplicative.

⁷ FAA Notice 7110.422, dated 11/14/05, is the most recent version of these procedures. It is considered “Sensitive Security Information” and its release is governed by 49 CFR § 1520.

To evaluate the effectiveness of FAA's post-September 11 communication procedures, we reviewed reports by FAA and the House Subcommittee on Aviation regarding the June 9, 2004, flight carrying the Governor of Kentucky to Washington Ronald Reagan National Airport to attend President Reagan's funeral—an incident that resulted in the evacuation of the Capitol.

The Subcommittee's July 2004 report concluded that a number of "key" errors contributed to the decision to evacuate the Capitol. First, FAA allowed the aircraft (bearing tail number N24SP) to enter the Washington, DC Area Defense Identification Zone (ADIZ) with an inoperative transponder.⁸ Second, FAA incorrectly broadcast over the DEN that N24SP had a transponder signal, but that its altitude read-out was not functioning. And, third, FAA failed to identify an aircraft radar return, which did not contain transponder data, as N24SP.

In response to these errors, we found FAA made several changes, including requiring every aircraft entering the Washington ADIZ to have an operative transponder with an automatic altitude readout. FAA also mandated refresher training for all air traffic controllers on, among other things, communicating over the DEN. FAA informed us that there have been no such similar incidents attributable to errors on the part of FAA.

Recommendations

1. FAA should correct its response to the Commission's May 22, 2003, Question for the Record.
2. FAA should consider appropriate administrative action for the two current executives who did not act to correct the record with the Commission. In our view, they had an affirmative obligation to do so in light of the Commission's mandate that included examining, and accurately reporting on, the interaction between FAA and DOD on September 11. The time at which the Air Force Liaison joined the FAA headquarters phone-bridge and established contact with NORAD was relevant to the Commission's mandate.

As a mitigating factor, and to provide some context, we note that at the time, the FAA, including these executives, produced over 6,000 documents and materials to the Commission.

⁸ The ADIZ is defined as the airspace less than 18,000 feet in an approximate 30-mile radius around Washington, DC.

3. FAA should institute a formal policy for the preservation of telephone recordings following notification of hijacked or suspicious aircraft.
4. In order to avoid confusion about which FAA procedures govern FAA's response to hijacked or suspicious aircraft, we are recommending that FAA review its procedures and eliminate those that are inconsistent or duplicative.

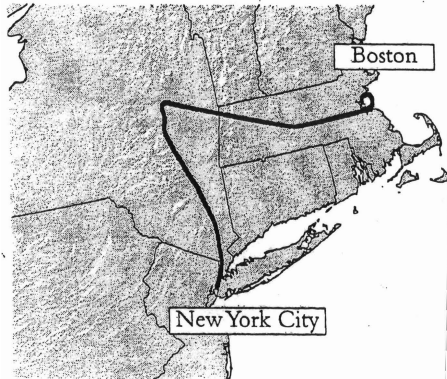
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Appendices

1. Chronology for each of the hijacked flights from the Commission's Final Report. [1 page]
2. NORAD's September 18, 2001, press release, captioned "NORAD's Response Times." [1 page]
3. FAA's September 17, 2001, "Summary of Air Traffic Hijack Events." [13 pages]
4. FAA's September 18, 2001, untitled chronology. [1 page]
5. FAA's response to the Commission's May 22, 2003, Question for the Record. [1 page]

American Airlines Flight 11 (AA 11)

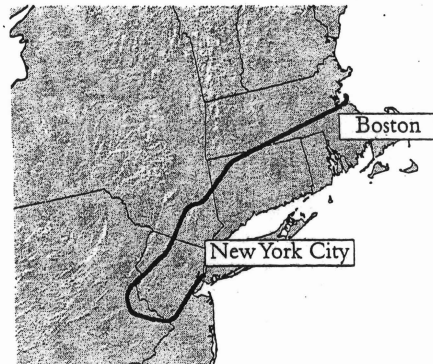
Boston to Los Angeles



7:59	Takeoff
8:14	Last routine radio communication; likely takeover
8:19	Flight attendant notifies AA of hijacking
8:21	Transponder is turned off
8:23	AA attempts to contact the cockpit
8:25	Boston Center aware of hijacking
8:38	Boston Center notifies NEADS of hijacking
8:46	NEADS scrambles Otis fighter jets in search of AA 11
8:46:40	AA 11 crashes into 1 WTC (North Tower)
8:53	Otis fighter jets airborne
9:16	AA headquarters aware that Flight 11 has crashed into WTC
9:21	Boston Center advises NEADS that AA 11 is airborne heading for Washington
9:24	NEADS scrambles Langley fighter jets in search of AA 11

United Airlines Flight 175 (UA 175)

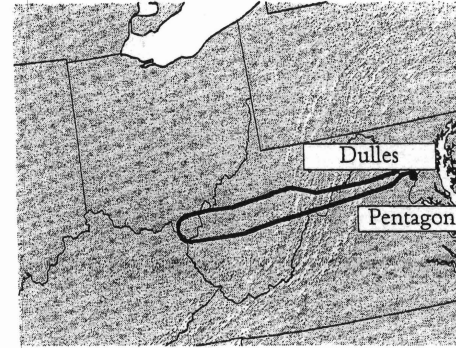
Boston to Los Angeles



8:14	Takeoff
8:42	Last radio communication
8:42-8:46	Likely takeover
8:47	Transponder code changes
8:52	Flight attendant notifies UA of hijacking
8:54	UA attempts to contact the cockpit
8:55	New York Center suspects hijacking
9:03:11	Flight 175 crashes into 2 WTC (South Tower)
9:15	New York Center advises NEADS that UA 175 was the second aircraft crashed into WTC
9:20	UA headquarters aware that Flight 175 had crashed into WTC

American Airlines Flight 77 (AA 77)

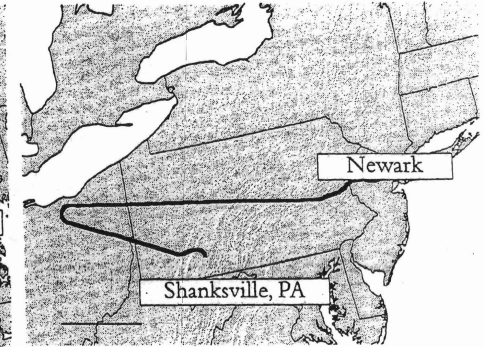
Washington, D.C., to Los Angeles



8:20	Takeoff
8:51	Last routine radio communication
8:51-8:54	Likely takeover
8:54	Flight 77 makes unauthorized turn to south
8:56	Transponder is turned off
9:05	AA headquarters aware that Flight 77 is hijacked
9:25	Herndon Command Center orders nationwide ground stop
9:32	Dulles tower observes radar of fast-moving aircraft (later identified as AA 77)
9:34	FAA advises NEADS that AA 77 is missing
9:37:46	AA 77 crashes into the Pentagon
10:30	AA headquarters confirms Flight 77 crash into Pentagon

United Airlines Flight 93 (UA 93)

Newark to San Francisco



8:42	Takeoff
9:24	Flight 93 receives warning from UA about possible cockpit intrusion
9:27	Last routine radio communication
9:28	Likely takeover
9:34	Herndon Command Center advises FAA headquarters that UA 93 is hijacked
9:36	Flight attendant notifies UA of hijacking; UA attempts to contact the cockpit
9:41	Transponder is turned off
9:57	Passenger revolt begins
10:03:11	Flight 93 crashes in field in Shanksville, PA
10:07	Cleveland Center advises NEADS of UA 93 hijacking
10:15	UA headquarters aware that Flight 93 has crashed in PA; Washington Center advises NEADS that Flight 93 has crashed in PA



NORTH AMERICAN AEROSPACE DEFENSE COMMAND

Directorate of Public Affairs, Headquarters, North American Aerospace Defense Command & US Space Command,
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NORAD and US Space Command website address: <http://www.peterson.af.mil/norad> or <http://www.spacecom.af.mil/uspace>

18 September, 2001

Contact: (719) 554-6889

NORAD'S Response Times

PETERSON AFB, Colo. --The following timelines show NORAD's response to the airliner highjackings on September 11, 2001.

* All times are Eastern Daylight Time; NEADS = North East Air Defense Sector, NORAD

** Scramble = Order to get an aircraft airborne as soon as possible

*** Estimated = loss of radar contact

**** Flight times are calculated at 9 miles per minute or .9 Mach

***** The FAA and NEADS established a line of open communication discussing AA Flt 77 and UA Flt 93

American Airlines Flight 11 – Boston enroute to Los Angeles

FAA Notification to NEADS	0840*
Fighter Scramble Order (<i>Otis Air National Guard Base, Falmouth, Mass. Two F-15s</i>)	0846**
Fighters Airborne	0852
Airline Impact Time (World Trade Center 1)	0846 (estimated)***
Fighter Time/Distance from Airline Impact Location	Aircraft not airborne/153 miles

United Airlines Flight 175 – Boston enroute to Los Angeles

FAA Notification to NEADS	0843
Fighter Scramble Order (<i>Otis ANGB, Falmouth, Mass. Same 2 F-15s as Flight 11</i>)	0846
Fighters Airborne	0852
Airline Impact Time (World Trade Center 2)	0902 (estimated)
Fighter Time/Distance from Airline Impact Location	approx 8 min****:71 miles

American Flight 77 –Dulles enroute to Los Angeles

FAA Notification to NEADS	0924
Fighter Scramble Order (<i>Langley AFB, Hampton, Va. 2 F-16s</i>)	0924
Fighters Airborne	0930
Airline Impact Time (Pentagon)	0937 (estimated)
Fighter Time/Distance from Airline Impact Location	approx 12 min/105 miles

United Flight 93 – Newark to San Francisco

FAA Notification to NEADS	N/A *****
Fighter Scramble Order (<i>Langley F-16s already airborne for AA Flt 77</i>)	
Fighters Airborne (<i>Langley F-16 CAP remains in place to protect DC</i>)	
Airline Impact Time (Pennsylvania)	1003 (estimated)
Fighter Time/Distance from Airline Impact Location	approx 11 min/100 miles (from DC F-16 CAP)



Summary of Air Traffic Hijack Events

September 11, 2001

American Airlines Flight 11 (AAL11)

Boston – Los Angeles

All times indicated are Eastern Daylight Savings Time

- 0756:27 Boston Airport Traffic Control Tower (BOS) issued taxi instructions to AAL11.
- 0800:00 AAL11 began takeoff roll, runway 4 Right, Boston Logan International Airport. All communications with BOS and with Boston Departure Control were routine and normal.
- 0809:17 AAL11 established radio contact with Boston Air Route Traffic Control Center (ZBW). “Boston Center, good morning, American Eleven with you passing through one-nine-zero (nineteen thousand feet) for two-three-zero (twenty-three thousand feet).”**
- 0809:22 ZBW acknowledged AAL11. From this time until 0813:31 all communications appear routine and normal. The sector was responsible for six aircraft including AAL11. The flight was instructed to climb to twenty-eight thousand feet, subsequently to twenty-nine thousand feet, and issued a twenty degree turn for traffic.
- 0813:47 **ZBW instructed AAL11 “ American Eleven, now, climb and maintain flight level three-five-zero (thirty-five thousand feet).” There was no acknowledgement to this transmission.** ZBW made two subsequent transmissions to AAL11, neither of which were acknowledged. Between 0813:47 and 0824:53, ZBW made several radio transmissions attempting to contact AAL11. None of the attempts were acknowledged.
- 0814:45 ZBW during intra-facility coordination recognized that AAL11 appeared to be turning right** but had not acknowledged the climb clearance to thirty-five thousand feet and did not acknowledge any further radio transmissions.
- 0817:59 A brief unknown sound (possibly a scream) from an unknown origin was heard over the ZBW radio.
- 0820:48 Secondary radar return (transponder) indicating aircraft speed, altitude, and flight information was lost on ZBW radar displays. The aircraft was then observed as a primary radar target only.**
- 0824:38 A radio transmission partially unintelligible stated, “we have some planes just stay quiet and you’ll be ok we are returning to the airport” from an unknown origin was heard over the ZBW radio.

0824:57 A second radio transmission partially unintelligible stated “nobody move everything will be ok if you try to make any moves you’ll endanger yourself and the airplane just stay quiet” – from an unknown origin was heard over the ZBW radio.

0825:00 ZBW began notification based on radio transmissions that a suspected hijack was in progress. The New England Regional Operations Center (ROC), the Air Traffic Control System Command Center (ATCSCC), and the ZBW facility manager were notified. Additionally, controllers began inter-facility coordination with New York Air Route Traffic Control Center (ZNY) of the possible hijacking. Coordination describes the last known altitude as twenty-nine thousand feet.

0826:00 AAL11 began southbound turn over Albany, New York. The last known altitude was twenty-nine thousand feet.

0833:59 A third radio transmission partially unintelligible stated “nobody move please we are going back to the airport don’t try to make any stupid moves” – from an unknown origin was heard over the ZBW radio. AAL11 primary radar track was still southbound, and the last known altitude was twenty-nine thousand feet.

0834:00 ZBW contacted Cape Terminal Radar Approach Control (located on OTIS Air Force Base) and requested they notify the Military of the events regarding AAL11.

0835:00 New England Regional Operations Center advised Washington Operations Center (WOC) of the suspected hijack of AAL11.

0836:00 WOC notified Civil Aviation Security Intelligence (ACI), and conferenced New England Regional Operations Center and the Air Traffic Control Systems Command Center (ATCSCC).

0838:00 ZBW notified New York Air Route Traffic Control Center (ZNY) of possible hijacking of AAL11.

0840:00 North East Air Defense Sector (NEADS) logs indicate they were notified by the Federal Aviation Administration of the events concerning AAL11.

0841:00 Military Command (VACAPES) issued scramble order on AAL11.

0844:00 ZNY facility manager notified New York Terminal Radar Approach Control (N90) of possible hijacking of AAL11. N90 began internal coordination of the aircraft’s last known altitude (twenty-nine thousand feet) and southbound course.

0846:31 Primary radar tracking of AAL11 was lost.

0846:35 Impact at World Trade Center.

0850:00 Washington Operations Center activated a Tactical Net at the request of Civil Aviation Security Intelligence (ACI).

0850:00 Newark Airport Traffic Control Tower (EWR) advised N90 of possible aircraft crash into the World Trade Center.

AAT-20
September 17, 2001
6:30 AM

United Airlines Flight 175 (UAL175)
Boston – Los Angeles
All times indicated are Eastern Daylight Savings Time

- 0804:55 Boston Airport Traffic Control Tower (BOS) issued taxi instruction to UAL175.
- 0814:00 UAL175 began takeoff roll, runway 9, Boston Logan International Airport. All communications with BOS and with Boston Departure Control were routine and normal.
- 0823:01 UAL175 established radio contact with Boston Air Route Traffic Control Center (ZBW). “Boston, morning, United one-seven-five out of one-nine (nineteen thousand feet) for two-three-zero (twenty-three thousand feet).”**
- 0823:06 ZBW acknowledged UAL175. At this point the controller was busy due to the events surrounding AAL11. The sector was responsible for six aircraft including UAL175. All communications between ZBW and UAL175 appear routine and normal. The flight was subsequently instructed to climb to flight level 310 (thirty-one thousand feet) and after radar handoff, was issued a frequency change to contact the New York Air Route Traffic Control Center (ZNY).
- 0840:32 UAL175 established radio contact with ZNY. “United one-seventy-five at flight level three-one-zero.”
- 0840:37 ZNY acknowledged UAL 175. “United one-seventy-five, New York Center, roger.”
- 0841:32 UAL175 transmitted to ZNY, “We figured we’d wait to go to your center, we heard a suspicious transmission on our departure out of Boston. Someone keyed the mike (initiated radio communications) and said everyone stay in your seats.”
- 0841:51 ZNY replied, “okay, I’ll pass that along.” (The controller ensured UAL175’s comments were forwarded to the Operations Manager.)
- 0844:05 US Air Flight 83 transmitted to ZNY “I just picked up an ELT (emergency locator transmitter) on 121.5 (emergency VHF frequency). It was brief, but it went off.”
- 0844:09 ZNY acknowledged US Air Flight 83.

- 0846:48 UAL175's assigned transponder code of 1470 changed, first indicating 3020, then changing again to 3321. ZNY air traffic computers do not correlate either of these codes with UAL175. Consequently, the secondary radar return (transponder) indicating aircraft speed, altitude, and flight information began to coast and was no longer associated with the primary radar return. *Note: The controller communicating with UAL175 was also monitoring the flight track of AAL11. Based on coordination received from ZBW indicating a possible hijack, most of the controller's attention was focused on AAL11.*
- 0851:43 ZNY transmitted to UAL175, "UAL175, recycle transponder, squawk code one four seven zero." No response was received from UAL175. The controller made several attempts, repeatedly trying to contact UAL175 for the next four minutes. During this time, the aircraft was also observed making a left turn and descending.
- 0853:24 ZNY controller coordinated internally, asking other controllers if they saw UAL175, or if they knew who the unidentified radar target is on transponder code 3321. None of the other controllers replied in the affirmative. *Note: The unknown aircraft in this and all following times was later confirmed to be UAL175.*
- 0855:00 ZNY controller was busy trying to turn other aircraft away from the aircraft believed to be UAL175. The flight track of this aircraft had changed and was now headed southeast bound.
- 0855:00 *This time is approximate based on personnel statements from ZNY.* A controller-in-charge (CIC) advised the Operations Manager (OM) that she believed UAL175 was also hijacked. The OM advised the CIC that an aircraft had hit the World Trade Center. The CIC began coordinating with the controllers working position and one of the controllers stated that UAL175 appeared to heading "right towards the city." The CIC returned to the OM position and heard a request for military aircraft to scramble. UAL175 was observed in a rapid descent
- 0855:00 *This time is approximate based on personnel statements from ZNY.* A controller working a different position within ZNY reported that two aircraft, a Delta Airlines flight was given instructions to avoid an unknown aircraft. At about the same time a US Airways flight reported taking evasive action from an unknown aircraft. The controller reported that the unknown aircraft was now headed towards New York City. This controller, along with other controllers speculated that the unknown aircraft was an emergency and was heading for an airport to land.

- 0900:00 ***This time is approximate based on personnel statements from New York Terminal Radar Approach Control (N90). N90 controller stated “at approximately 9:00, I observed an unknown aircraft south of the Newark, New Jersey Airport, northeast bound and descending out of twelve thousand nine hundred feet in a rapid rate of descent, the radar target terminated at the World Trade Center.”***
- 0903:14 Second Impact at World Trade Center.
- 0905:00 North East Air Defense Sector (NEADS) logs indicate they were notified by the Federal Aviation Administration of the events concerning UAL175.
- 0905:00 N90 received notification from the Newark Airport Traffic Control Tower of a second aircraft striking the World Trade Center.

United Airlines Flight 93 (UAL93)

Newark – San Francisco

All times indicated are Eastern Daylight Savings Time

- 0809:18 Newark Airport Traffic Control Tower (EWR) issued taxi instructions to UAL93.
- 0842:00 UAL93 began takeoff roll, runway 4 left, Newark New Jersey International Airport. All communications with EWR, with New York Departure Control, and with New York Air Route Traffic Control Center (ZNY) were routine and normal.**
- 0924:30 UAL93 established radio contact with Cleveland Air Route Traffic Control Center (ZOB), “Good morning Cleveland, United ninety-three, three-five-oh (thirty-five thousand feet), intermittent light chop.” The controller was busy, the sector was responsible for sixteen aircraft. Of these, several aircraft were being issued new routes based on the events occurring on the east coast. The controller did not reply to this initial transmission.
- 0925:14 UAL93 again reported on ZOB frequency, “United ninety-three checking three-five-oh (thirty-five thousand feet).” The controller replied, “United ninety-three, Cleveland, roger.” *Note: This was the third radar sector within ZOB to communicate with UAL93. The communications with the previous sectors were routine and normal.*
- 0928:19 A radio transmission of unintelligible sounds of possible screaming or a struggle from an unknown origin was heard over the ZOB radio.
- 0928:54 A second radio transmission, mostly unintelligible, again with sounds of possible screaming or a struggle and a statement, “get out of here, get out of here” from an unknown origin was heard over the ZOB radio. At about this same time, the ZOB controller observed that UAL93 had descended, altitude indicated thirty-four thousand, three hundred feet.
- 0929:29 ZOB controller asked UAL93, “United ninety-three, verify three-five-zero (thirty-five thousand feet).” There was no reply. The ZOB controller made several attempts to contact UAL93 without receiving any acknowledgement.**
- 0929:50 ZOB controller began moving other aircraft away from UAL93 due to the lack of acknowledgement of any radio transmissions. Several other aircraft on the frequency confirmed unusual sounds of an unknown origin. The altitude of UAL93 again indicated thirty-five thousand feet.**
- 0931:57 A third radio transmission, mostly unintelligible, may sound like an individual out of breath, more unintelligible words and what sounds like “bomb on board” from an unknown origin was heard over the ZOB radio.

0932:31 A fourth radio transmission stated “did you hear that transmission that reported a bomb on board?” from an unknown origin was heard over the ZOB radio.

0934:50 ZOB controller observed that UAL93 was climbing without an air traffic control authorization. The aircraft had started a turn to the southeast, also without air traffic control authorization.

0938:47 UAL93 altitude indicated forty-thousand seven hundred feet.

0939:12 A fifth radio transmission, mostly unintelligible, stated words that may sound like “captain, ...bomb on board, ...our demands, ...remain quiet”

0939:59 ZOB notified Great Lakes Regional Operations Center of the screams and statements from unknown origin, believed to be UAL93.

0941:00 Secondary radar return (transponder) indicating aircraft speed, altitude, and flight information becomes intermittent and eventually failed on ZOB radar displays.

0944:31 ZOB controller notified Pittsburgh Terminal Radar Approach Control (PIT) North Arrival controller of the unanticipated turn, the loss of secondary radar return and lack of radio communications with UAL93. The ZOB controller also stated that the projected flight path would result in UAL93 passing in close proximity if not directly overhead the Greater Pittsburgh International Airport.

0945:00 PIT controller notified the Operations Supervisor of the events surrounding UAL93. The PIT controller also manually initiated radar tracking of the primary radar target.

0951:00 After determination by the PIT facility manager to evacuate, the controllers have completed coordination with adjacent facilities and the PIT facility has been evacuated.

0956:56 A small contingency of controllers (volunteers) returned to the facility and coordination with adjacent facilities pertaining to return to operational status is completed. The track of UAL93 was no longer visible on the PIT radar displays.

1000:00 *This time is approximate and is based on personnel statements from ZOB. A ZOB controller’s statement indicated that the pilot of a VFR aircraft reported sighting a United Airlines aircraft at approximately eight thousand feet in the vicinity of the Latrobe, Pennsylvania airport. The pilot also reported that the United Airlines aircraft’s landing gear was down, the wings were rocking, and that the aircraft appeared to be in distress.*

- 1004:00 *This time is approximate and is based on personnel statements from ZOB. A ZOB controller statement indicated that UAL93's primary radar target terminated in the vicinity of Somerset, Pennsylvania.*
- 1007:00 **In response to a request from a ZOB controller, N20VF, a Falcon Jet reported observing puffs of smoke in the vicinity of UAL93's last known position.**
- 1041:00 After receiving a telephone call from the Somerset, Pennsylvania police department stating that several "911" telephone calls had been received reporting an aircraft accident, a ZOB operations manager made official notification to Great Lakes Regional Operations Center. *Note: Although this is the officially documented notification time, FAA officials were aware of the accident as these events were reported as they occurred on a critical event teleconference established at the Federal Aviation Administration headquarters building.*

AAT-20
September 17, 2001
6:30 AM

American Airlines Flight 77 (AAL77)
Washington Dulles - Los Angeles
All times indicated are Eastern Daylight Savings Time

- 0812:29 Dulles Airport Traffic Control Tower (IAD) issued taxi instructions to AAL77.
- 0820:00 AAL77 began takeoff roll, runway 30, Washington Dulles International Airport. All communications with IAD and with Dulles Departure Control were routine and normal.
- 0825:49 AAL77 established radio contact with Washington Air Route Traffic Control Center (ZDC), "Center, American seventy-seven with you passing one-three decimal zero (thirteen thousand feet) for one-seven-thousand (seventeen thousand feet)." All communications between ZDC and AAL77 appear routine and normal. AAL77 was subsequently handed off to the Indianapolis Air Route Traffic Control Center (ZID).**
- 0840:14 AAL established radio contact with ZID. "Center, American seventy-seven with you, level three thirty (thirty-three thousand feet).
- 0840:16 ZID acknowledged, "American seventy-seven, Indy center, roger, squawk three-seven-four-three." (Squawk is a control instruction to change the transponder setting within the aircraft). AAL77 was subsequently instructed to climb to thirty-five thousand feet and later cleared to navigate direct to the Falmouth navigational aid. When ZID acknowledged AAL77, the sector was responsible for fourteen aircraft; additionally four aircraft were in handoff status to this sector.
- 0850:51 AAL77 acknowledged the clearance to Falmouth. This was the last radio communication with this flight.
- 0854:43 AAL77 began a left turn towards the south without air traffic authorization. The altitude indicated thirty-five thousand feet. Shortly after the turn, the aircraft was observed descending.**
- 0856:19 Secondary radar return (transponder) indicating aircraft speed, altitude, and flight information is lost on ZID radar displays. There was no longer any radar return information (either primary or secondary) on AAL77 indicated at the ZID radar displays. *Note: The initial review of radar data, and controller personnel statements conducted by ZID did not indicate any primary or secondary radar returns were displayed.***
- 0856:32 ZID controller attempted to contact AAL77, "American seventy-seven, Indy." There was no acknowledgement. ZID also tried to communicate with AAL77 through American Airlines company radios.

- 0858:14 ZID also made several attempts to contact AAL77 through American Airlines company dispatch.
- 0859:00 ZID controllers began coordinating with other controllers to protect the airspace and altitude of AAL77's filed route of flight.
- 0909:00 ZID notified Great Lakes Regional Operations Center a possible aircraft accident of AAL77 due to the simultaneous loss of radio communications and radar identification.
- 0915:00 *This time is approximate based on personnel statements from ZID.* The ZID Operations Manager requested that the Traffic Management personnel notify Air Force Search and Rescue of the missing and possibly downed aircraft. The Operations Manager also contacted the West Virginia State Police advising them of a possible downed aircraft and asks if they have any reports of a downed aircraft.
- 0920:00 *This time is approximate based on personnel statements from ZID.* The ZID Operations Manager contacted the Chicago Air Route Traffic Control Center (ZAU) and advised the ZAU Operations Manager of his concern that AAL77 may have been hijacked and that he (ZAU Operations Manager) should be on the look out (based on events occurring in New York)..
- 0924:00 Great Lakes Regional Operations Notified Washington Operations Center of the simultaneous loss of radio communications and radar identification.
- 0925:00** *Between 0925:00 and 0930:00, this time is approximate based on personnel statements from Dulles Terminal Radar Approach Control (IAD). Several IAD controllers working radar positions in the facility observed a primary radar target tracking eastbound at a high rate of speed. Note: The unknown aircraft in this and all following times was later confirmed to be AAL77.*
- 0933:00 *This time is approximate based on personnel statements from IAD.* An Operations Supervisor at IAD advised the White House Office of the United States Secret Service of an unknown aircraft heading in the direction of the White House, fast moving. Meanwhile, a controller was providing the same information to controllers working at the Ronald Reagan Washington National Airport Traffic Control Tower (DCA). The IAD Operations Supervisor also provided continuous updates on a critical event teleconference established at the Federal Aviation Administration Headquarters building.
- 0933:00 *This time is approximate based on personnel statements from DCA.* An Operations Supervisor at DCA was advised by IAD of the unknown aircraft. The Operations Supervisor at DCA immediately notified the White House Office of the United States Secret Service of the unknown aircraft's location and provided continuous updates.

0936:00 Personnel at DCA issued traffic advisories on the unknown aircraft to a military C130 aircraft that had departed Andrews Air Force Base. When the C130 aircraft (GOFER06) reported the unidentified aircraft in sight, the pilot was instructed to follow the unknown aircraft.

0938:00 **GOFER06 reported that the unknown aircraft had crashed into the western side of the Pentagon.**

AAT-20
September 17, 2001
6:30 AM

	AAL11	UAL175	AAL77	UAL93
First Sign	08:20 ¹	08:46 ²	08:56 ³	09:28 ⁴
Probable time flight was known to be in distress	08:25 ⁵	08:52 ⁶	08:56 ⁷	09:32 ⁸
NORAD** NEADS*** Notification	08:40*	09:05*	09:24*	NA*
Estimated Crash time	08:46	09:03	09:38	10:04
All times are Eastern Daylight Time				

1. AAL11 secondary radar return (transponder) lost.
2. UAL175 assigned transponder code of 1470 changes; communications lost.
3. AAL77 secondary radar return (transponder) and radar contact was simultaneously lost.
4. Two radio transmissions of unintelligible sounds; possible screaming, sounds of a struggle and "get out of here" is heard over the Cleveland Air Route Traffic Control Center radio. The mode C for UAL93 has descended 700 feet from assigned altitude
5. A radio transmission is heard telling passengers "nobody move everything will be ok if you try to make any moves you'll endanger yourself and the airplane just stay quiet."
6. UAL175 has failed to respond to several calls and is observed turning off course.
7. Aircraft is presumed crashed over Pennsylvania.
8. UAL93 is unresponsive to multiple calls from the controller. Additionally, there are three transmissions indicating a possible struggle aboard an aircraft.

*These times are derived from the review of the NEADS log.

*North American Aerospace Defense Command (NORAD)
Northeast Air Defense Sector (NEADS)

FAA's Response to the 9/11 Commission's May 22, 2003, Question for the Record.

**FAA communications with NORAD
On September 11, 2001**

Within minutes after the first aircraft hit the World Trade Center, the FAA immediately established several phone bridges that included FAA field facilities, the FAA Command Center, FAA headquarters, DOD, the Secret Service, and other government agencies. The US Air Force liaison to the FAA immediately joined the FAA headquarters phone bridge and established contact with NORAD on a separate line. The FAA shared real-time information on the phone bridges about the unfolding events, including information about loss of communication with aircraft, loss of transponder signals, unauthorized changes in course, and other actions being taken by all the flights of interest, including Flight 77. Other parties on the phone bridges, in turn, shared information about actions they were taking.

NORAD logs indicate that the FAA made formal notification about American Flight 77 at 9:24 a.m., but information about the flight was conveyed continuously during the phone bridges before the formal notification.