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MEMORANDUM FOR THE RECORD

Event: Captain Ed Soliday, former Vice President of Safety, Security and Quality Assurance for United Airlines

Type: Interview (Part I)

Prepared by: Lisa Sullivan and Bill Johnstone

Special Access Issues: None

Teams: 7 and 8

Date: November 21, 2003

Participants (non-Commission): Ed Soliday, John Midgett, Jeff Ellis, Mike Feagley, Steve Sawyer

Participants (Commission): Sam Brinkley, John Raidt, Miles Kara, Lisa Sullivan and Bill Johnstone

Location: UAL SOC Chicago, IL

Background

[U] Captain Soliday began as a pilot for United at age 21. Two years later he went to fly helicopters in Vietnam where he was also in flight maintenance. He returned to United after the war and served as an engineer and co-pilot. In the early 1980s he became involved in the Command Leadership Resource (CLR) management program, which dealt with human factors. (Soliday pointed out that United has not had a human factors related accident since 1981. He places a high priority on dealing with human factor issues.)

[U] Soliday recounted the 1985 strike at United. Even though he was a union member, he had been teaching CLR classes at the request of management, but when the strike occurred, he was banned from teaching. However, shortly thereafter, problems developed in the CLR program and Soliday was asked to return to re-write the curriculum and run the program, which he did.

[U] In 1988, Soliday became a Flight Manager (with a focus on labor relations) and had 400 pilots at O'Hare under him. He was especially involved in contract negotiations.

[U] In 1990, United was planning to consolidate its safety programs and strengthen their independence from other operations. Corporate leadership asked Soliday to manage the new program. He had been in the job for 9 months when (in 1991 or early 1992 he was asked to take over Security for United. Soliday recalled being told that the company

leadership "didn't like the way we are performing" with respect to security. He was taking over both the internal and external security divisions of the company.

[U] In 1995, Soliday was a Vice President for Safety and Security, and in 1997 Quality Assurance was added to his charge. He held that position until two months after 9/11/01. (He had decided to leave back in August of 2001 and had informed the company of his plans at that time.) He left because of certain job frustrations, but also because of the feeling that after 11 years on the job, it was time for a younger and newer face.

[U] In 1996, Soliday served on the FAA's Baseline Working Group that was created to find a way to improve the security "baseline" for civil aviation.

Security at United

[U] At the time Soliday took over security, United had only 3 staff for counter-terrorism: [redacted] philosophy was that the company should follow the security "book" given to it by the FAA. Soliday wanted United to be a "pioneer" with respect to security, and he told [redacted] to take the initiative in such areas as testing CTX machines, which United was the first to undertake.

[U] With regard to United's relationship with the FAA, Soliday didn't think they were partners, given that the FAA was the regulator, but unlike others in the industry he did believe the company (and the entire industry) needed to try to work cooperatively with the agency. In another area in which Soliday felt he and United took a different approach, he noted that many airlines staffed key security roles with former law enforcement officers, whereas United chose him, with primarily an aviation background, which made him more inclined to closely examine risks.

[U] [redacted] "scanned the newspapers" for threat information and United took seriously the threat information they received from the FAA. Soliday reported that he resisted the aviation industry's tendency to argue with the FAA over the validity of threat assessments. Rather than arguing about information they were not in a good position to evaluate, he believed the job of the airlines was to determine what counter-measures, if any, they could do to mitigate the postulated threat. On the other hand, he often viewed Security Directives as a means for avoiding responsibility (they were a "CYA" for many).

[U] Soliday indicated that he was unable to use FAA Red Team reports as a metric of performance or a means to improve security because he was never given written details on the results, only verbal reports. However, he did use regular FAA audits and to a certain extent DOT IG reports for that purpose.

[U] To avoid total reliance on outside testers, Soliday created his own internal audit teams that "roamed" the United security system to monitor training and compliance with FAA standards. The teams looked at both screening and CAPPS.

[U] Soliday stated that from 1988 on, aviation security vulnerabilities and problems were clearly laid out and reported on, much of the information being in open sources. Furthermore, he noted that security measures are often driven more by emotion than risk mitigation.

[U] Soliday is an advocate of continuous improvement. He wasn't satisfied with a 70, or even 80, percent performance, nor with the fact that United was usually the top performer among the airlines. That wasn't good enough. "We knew there were vulnerabilities in the system that we were never going to plug," Soliday said.

U] There were two kinds of security audits United was involved in prior to 9/11: the regular FAA audits on screening compliance and weekly audits by the stations. Post 9/11 (and also post-Bojinka), Soliday hired an Israeli firm to perform an outside audit of United's airport stations from the standpoint of risk.

[U] In terms of his relations with the FAA, Soliday reported that he was in frequent contact (three or four times a day) with the FAA. He frequently talked with FAA Security head Irish Flynn, but had less direct contact with Flynn's successor, Mike Canavan.

[U] Soliday wanted to be able to utilize effective threat based security, but felt he didn't have the tools to do it and the government didn't have them to offer. The mismatch between the threat and the available counter-measures concerned him enough that he was taking every CTX he could get.

Safety and Security

[U] To Captain Soliday, safety and security are the same thing, both involving the protection of people and assets. Both require better training, a better process and new technology. Given his background, he typically viewed security problems through a safety lens and tried to think what corrective actions he would take on the safety side.

[U] On flight safety, Soliday indicated that the airlines have to have "10 to the minus ninth redundancy" in mitigating potential hazards, but he has not been able to convince the industry to work toward some definite and analogous level of security risk to mitigate toward. The goal in security should also be to reduce risk via redundancy of counter-measures; no single tool is 100% effective.

[U] Soliday stated that when a pilot errs (typically on the safety side); the companies spend millions of dollars to fix the problem. However, on the security side, when a screener failed (pre-9/11) they were fired and when a screening contractor failed (three times was the standard for United) the contract was terminated.

Screening

[U] Soliday believes attention and resources need to be applied to look at why screeners failed. He indicated that he has tried repeatedly to get others in the industry and the government to look at the entire screening process. As an illustration of the complexity of the problem, he recounted that the DOT Inspector General had reported (well before 9/11) that the airlines needed to pay the screeners more. Soliday recalled that the airlines did test higher screener salaries. This tended to bring in "kids just out of college" who tended to lose attention faster ("they weren't thinking about that screen"), perform worse and pose an even larger turnover problem. In Soliday's view, there was no correlation between intelligence and higher screener performance.

[U] To improve screening, Soliday believes we have to get better technology and/or improve the performance of the screeners. As initial solutions to the latter problem, he called for reducing the shift time for agents viewing the screen, and regularly rotating the positions for agents at the checkpoints.

[U] Soliday spoke of the civil aviation security system's tendency to "throw money" at the problem in the wake of disasters like Pan Am 103 and 9/11. In the immediate aftermath of TWA 800, he had gotten Argenbright to agree to participate in human factors research for checkpoint screening, but had been unable to convince FAA Security head Irish Flynn to supply either the dollars or the federal "imprimatur" which Soliday felt was needed for the research to go forward.

[U] Soliday pointed out the contrast between human factor research and training for pilots (UAL alone spent $14 million for such research in 1981) and for screeners, which was all but non-existent.

[SSI] In Soliday's view, today we have more consistent training of screeners, but no significant improvement in technology and no apparent improvement in performance. He cited two companies had been working on a technology called "quadropole" which Soliday thought had great potential but it was denied certification. Soliday believes that there could be a huge reduction in human factors problems for screening if and when it or some equivalent "Red Light/Green Light" system is implemented which reduces the reliance on checkpoint screeners.

[redacted] He indicated that the purchase took place "when they had money," in contrast to today's more resource constrained period.

[U] According to Soliday, at one point he had convinced Frank Argenbright to establish a quality assurance program to improve screener performance, but shortly thereafter Argenbright sold his company to a British corporation. After that, Soliday's discussions

with the Argenbright company on performance improvement were not as productive as he would have liked.

Post 9/11 Aircraft Defense

[U] Captain Soliday believes that allowing pilots to have guns in the cockpit is a bad idea. He reported that FBI agents tested this in the 1970s, and the results indicated that it was not effective because the pilot would never really have the opportunity to get a clear and good shot at the hijackers. (Soliday said he asked proponents of the idea to "show me the shot" the pilot would actually take.)

[U] Soliday hired an Israeli consultant after 9/11 and asked him "what should I be lobbying for (to increase security)?" [redacted] He hired two additional consultants who had worked at Treasury to develop a training program for overall security.

[redacted]

[U] ALPA had "teed up" the issue of cockpit door strengthening several times in the late 1990s, but never as a priority issue. Soliday didn't recall much work being done on the issue until after 9/11, and feels he would have known if such had occurred because United took the lead in doing the post-9/11 engineering work for more secure cockpit doors.

[U] On the issue of keys to the cockpit, one of the issues initially was that pilots on long international flights didn't want to be awakened by knocks from flight attendants seeking entrance to the cockpit, so the FAA gave keys to flight attendants on such flights. Previously, security considerations had played a role in not giving keys to the cabin crew. However, once the international crews had them, given the rotation of crews, it became more and more difficult to keep keys off of domestic flights.

Computer Assisted Passenger Prescreening System (CAPPS)

[U] Soliday reported that United was the first to "turn on" the CAPPS program in February of 1997. Part of the reason for Soliday's support for CAPPS was that, after a

test (which he agreed to because of the human factors involved), he wasn't convinced that Positive Passenger Bag Match (PPBM), which was the main alternative to CAPPS, really mitigated risk. However, the Department of Justice objected to deployment of CAPPS because it felt the program was discriminatory. Justice demanded that the airlines keep a tally sheet on who was selected in order to prove non-discrimination, but Soliday felt this was unacceptable, and he offered to allow audits by the Department instead, which was agreed to.

[U] While pre-9/11 there was no formal system-wide "no fly" list, in 1995-96, the airlines created a "name trap" which was a matrix containing names of individuals of concern to civil aviation. Of the 50 or so names which were on this "list" pre-9/11, approximately ten were to be denied boarding on U.S. airliners, primarily because of "air rage" or inebriation on previous flights. The list of names was made available to certain law enforcement agencies

[U] Soliday reported that within a week after 9/11, there were about 1,800 names of concern supplied primarily by the FBI. To illustrate a point about his concern over the Justice Department objection to CAPPS, For Soliday, this highlighted the critical need for federal agencies to get together and coordinate on key goals.

[U] In implementing CAPPS, a number of issues were involved including liability, common carrier boarding rules "leveraging" by other carriers (i.e. uneven application of the standards by carriers), and consequence management (what could the carrier do with the selectee in the absence of their displaying an imminent threat to the aircraft's security).

[U] There was also pressure from the Justice Department to make sure that the application of CAPPS was non-discriminatory while

Intelligence and Threat Assessment

[U] Soliday felt that United had a good working relationship with the FAA on security matters, and because it did not take tame arguing over the agency's threat assessment, United was able to implement an SD in three or four days versus the industry average of two or three weeks. Soliday reported that it was key to have adequate information in

order to win acceptance by corporate leadership of added security measures. Thus, he would seek out friends at the State Department and elsewhere to supplement the FAA-supplied information (by telling him what the FAA could not provide via the SD route).

[U] In Soliday's view, the FAA liaisons to other government agencies was not an effective answer to the problem of intelligence sharing. In Soliday's words, "it is monumental to have a clue what's really going on" with respect to the threat. He felt that the airlines weren't given enough information on their risk, but on the other hand he shared the government's concern about the potential for industry (which is like a "sieve" with respect to most information) to compromise intelligence sources.

[U] At a 1997 George Washington University conference, Soliday raised the issue of suicide attacks, but the "mantra" was non-suicide bombing with positive passenger bag match as the answer. In response to his specific question, an Israeli expert indicated that suicide attacks on civil aviation were not a threat. After 9/11, Soliday indicated that participants in the conference admitted that they missed that call.

[U] In the summer of 2001, Soliday was frustrated because there were SD's warning that there was a high degree of risk out there. His office stayed in touch with the Principal Security Inspector for United at the FAA (Fran Lozito), and sent out communications to their airport stations.

Response to Security Directives

[U] In implementing SDs, Soliday wanted to comply as much as possible. Sometimes, there was an economic boundary (from resource and/or cost-effectiveness considerations) on implementation. On other occasions, Soliday's concern was over effectives: was the counter-measure "real or wallpaper."

[U] Soliday invited the FAA (as well as the unions) to attend his regular security management meetings at United. If they thought he was holding important information back, they were welcome to challenge or correct his remarks. He felt this was a useful exercise in information sharing. However, in 2000 corporate management asked him to stop inviting FAA to the meeting because they felt that company employees might have felt intimidated with their regulator present.

Baseline Working Group and TWA 800

[U] Soliday recalled that the 1995 National Intelligence Estimate had indicated that the threat to civil aviation was rising. In 1996 he was named to the FAA's Baseline Working Group (BWG), which concluded the same thing as it sought to raise the security baseline for civil aviation. The BWG was focused on trying to identify and put in place the security basics for the entire system. One cornerstone was to be that all baggage would have to be screened.

[U] TWA 800 exploded on the day of the BWG's first meeting. Soliday met with the United CEO and told him that while, he couldn't be sure at that point, he thought there was enough probability of terrorist involvement to warrant significant action by the company. While Soliday thought that the industry as a whole would "drag its feet," he wanted United to "step out" and take the lead in responding.

[U] At that point, Soliday went to Irish Flynn urging a prompt response from the FAA. Flynn told him he would think about it. An SD came out shortly thereafter which contained some of the Soliday's recommendations. United moved to "take all the CTX's we could get."

[U] Soliday reported that he got widely criticized within the industry about his reaction to TWA 800 when NTSB reported that it wasn't even a terrorist act. (In Soliday's view, the evidence on this point is not conclusive, one way or the other.)

[U] Once TWA 800 occurred, the BWG was somewhat untracked and had to accelerate its work and hand it over to the Gore Commission.

[U] Soliday had thought that a commitment had been made by industry within the BWG to screen check every piece of baggage and he thought that was a good thing. It wouldn't take you to zero risk – [redacted] However, after the finding of accidental cause of the TWA 800 crash implementing 100% baggage screening became again a huge controversy in the industry. Many airline officials were "screaming that security measures" are threat driven and so by nature are reactive. That wasn't the kind of system Soliday wanted to work in; to him the issue remained of getting the basics in place. He knew eventually that would have to include procuring the necessary technology.

Common Strategy

[U] The Common Strategy for dealing with hijackings was driven by the Air Line Pilots Association (ALPA) according to Soliday, and had been around for a long time. It was based on the traditional "quid pro quo" (where hijackers wanted something in exchange for the release of the aircraft and passengers). The probability of any other kind of scenario was very low. (Soliday did not recall seeing the 2000-2001 CD-ROM presentation by Pat McDonnell of the FAA on the terrorist threat to civil aviation where the possibility of suicide hijacking was mentioned, but largely discounted.)

[SSI] In 1999 or 2000 (after the sarin gas attack on the Tokyo subway), Soliday worked with Flynn to arrange an exercise in which a terrorist released anthrax in an airplane but most of those participating in the exercise had the operating assumption that they would be intervening once the plane was back on the ground.

[U] Soliday described the "Burger King" theory under which foreign terrorists or other would be hijackers would be so attracted by American material well-being that they wouldn't undertake the hijacking operation and have to leave the country. In addition,

9/11 Closed by Statute

[redacted] A scenario like 9/11 was never on the discussion table.

[U] In Soliday's view, the thinking underlying the Common Strategy was that there were three kinds of potential hijackers to deal with: (1) crazies (whom the system could likely stop); (2) crooks (who won't kill you); and (3) well-trained and funded terrorists (who the system couldn't stop but who were few in number, especially those who the desire and ability to attack in the U.S.).

Aviation Insurance

[U] Soliday indicated that decisions by the airline's insurers were based on financial factors (such as the amount of funds available in the London market and the amounts paid out in previous years), rather than security. When he did periodic briefings for the insurers, they wouldn't ask about certain security-related issues, and adoption of additional security procedures didn't produce a price break from the insurers.

Event: Captain Ed Soliday, former Vice President of Safety, Security and Quality Assurance for United Airlines

Type: Interview (Part II)

Prepared by: John Raidt

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Participants (non-Commission): Ed Soliday, Jeff Ellis

Participants (Commission): Sam Brinkley, John Raidt, and Bill Johnstone

Location: James Monroe Building; Washington, DC

9-11— The Day: Hearing the News and Immediate response

[U] Ed was at home preparing to go to work when his wife told him that a light airplane had just crashed into the WTC. Ed remembers thinking that small airplanes just don't run into the WTC. He ran downstairs and saw on television that a second plane had hit the WTC. He realized that something more than a random incident was occurring. He immediately rushed to work. On the way he received a call from Rich Davis of UAL security who told him that "we think the second one was ours." Soliday thought it was about five minutes after the second plane had hit when he received the call. Soliday told Davis to shut the UAL campus down because they weren't sure what was going on. He remembers stressing to Davis several points featured in UAL's written emergency response plan. He told Davis to keep him informed and to contact Andy Studdert, UAL's COO about what was going on. Davis told Soliday they were opening the company's crisis center. Soliday said the Opening that room triggers "go teams" and activates a call list. Soliday said that normal protocol was to obtain a "vote of three" to open the crisis center, but that both Soliday and Andy Studdert were empowered to order it activated on their individual say so.

[U] Andy Studdert called Soliday several times as Soliday was on his way to work. Soliday said he reiterated to Studdert that UAL needed to stick to the written plan and to stay in the prepared process in responding to the crisis.

Arriving at UAL Headquarters and initial actions

[U] Soliday remembers that he got to UAL's offices around 8:35 a.m. CDT, and hit the crisis center before Flight 93 made its turn to the south. He immediately went to his office, grabbed some material relevant to operation of the crisis center and then went to

the crisis center immediately. The first question he asked was whether the "net" was up. The "net" is a UAL internal telephone network that links all the essential elements of UAL by phone. No outside entities or government agencies are on the net. The net had been established before he got to the crisis center. UAL talks with FAA and NTSB on other lines, not on their corporate net.

UAL's Emergency Protocol

[U] With respect to UAL's written plan, he said that the aspects of the plan dealing with "humanitarian" response to victims and families must be approved by the FAA. The other elements of the emergency response plan are not required or approved by the FAA. Soliday said that the FAA and FBI participated in emergency exercises conducted by the company, and that the agencies are familiar with how UAL handles a situation, and may indeed have a copy of the plan.

[U] (Note: Soliday was told during the IV that commission staff was considering a recommendation to ensure that certain key steps were taken by stakeholders and responsible parties as part of mandatory security-related emergency response protocols).

[U] Soliday said that UAL practiced emergency response exercises four times a year. Most of the exercises were safety related, but security scenarios were also included. Safety incidents were practiced more because they were more likely. He said that UAL had practiced hijacking scenarios and that the UAL lawyers should have a copy of them. None of them regarded a hijacking with the threat of using the aircraft as a weapon.

At the Crisis Center

[U] Soliday's first task upon getting to the crisis center was to get information and help impart a sense of stability and assure that everyone stuck to the emergency response plan.

[U] Soliday remembers that Andy Studdert and Pete McDonald were making decisions on the operations room floor and that the first major issue was about ordering down UAL's fleet. Soliday said that he couldn't identify the precise time that UAL gave the order to bring its airplanes down but that Studdert is convinced that he ordered UAL's fleet down prior to FAA issuing the order.

[U] Soliday recalls spending much of his time working on getting their airplanes down after the order had been made. This was a very complex operation that included many variables, including issues of fuel, landing capacity, and issues about permission to land in Canada and at a U.S. airbase in Alaska.

ATC Threat Information on 9-11

[LES] Soliday was asked if he was aware whether anyone in the Crisis Center or at UAL had been informed by FAA that Air Traffic Control had overheard a transmission coming from AAL #11 to the effect that the terrorists had "other planes." He was not aware of

that information. Soliday was asked whether UAL would have grounded their system had they been given this information by the ATC, perhaps never allowing Flight 93 to take-off. Soliday said he would like to think he would have made the right decision, but it's just too hard to say because you can never know how an individual or a system would react. Such a decision would have been Andy Studdert's. He said that had he (Soliday) possessed such information and it was his decision alone, he likes to think he would have placed a halt on operations.

UAL's Bojinka Response

[U] Soliday provided an example of a scenario on how UAL reacted during a previous threat situation in the middle 1990's related to the Bojinka plot to down 12 American aircraft it the Pacific. He received a call at 3 a.m. from UAL's security manager in the Pacific area telling Soliday that FAA wanted UAL to recall their flights in the air because of the threat. UAL received only general orders from the FAA that didn't take into consideration whether the planes had the fuel to comply or other important, practical and consequential concerns. UAL began the process of making those calculations immediately so that they could comply in a responsible manner in which flights could be landed safely without incident.

[U] Soliday commented that the security-side of FAA did not have aviators on its staff and didn't understand issues like "point of no return" which means you can't recall an airplane for a security concern, if it doesn't have the fuel to comply with the request. Soliday indicated that TSA was endeavoring to ensure they had people with aviation experience in their operation which was a good thing. Soliday raised the example to make the point that to take action responsibly, calculating the safety consequences must be done and that this can take a little time. In response to whether UAL would have had time to stop Flight 93 from taking off had they heard at 8:30 a.m. of the existence of a serious threat, he said "Maybe."

NAS shut down procedure

[U] Soliday said that if the commission recommends the establishment of a set policy for how to shut down the National Airspace or ground some number of flights in the air, the scenario should be exercised and timed out so that all stakeholders would know what to expect, including data on system capacities.

Suspicious report from UA 175

[U]Soliday said he did not recall hearing that UAL 175 had reported to ATC hearing suspicious transmissions coming from AAL 11.

UA 93

[U] Soliday remembers sometime after the order to ground the fleet was being implemented he heard a report from a dispatcher that UAL had lost communication with its Flight 93. The dispatcher manual provides the procedure that should be undertaken when communications with a flight is lost.

[SSI] UAL tried to contact the aircraft using its multiple various means of doing so, and to the best of his recollection UAL tried them all including: ATC; ACARS text messaging digital linkup; dispatcher direct; checking the transponder.

[U] After receiving the "no comms" report Soliday asked his staff to display Flight 93 on UAL's Aircraft Situation Display (ASD). The screen, at one point, had all of UAL's flights displayed but they were able to isolate and watch Flight 93. He can't place the time exactly when this happened but he does remember sometime in this process hearing that Flight 77 had been grounded.

UA 175 and UA 93 lock out

[U] Soliday did not have any information about when the company "locked out" access to the flight information. (This is a procedure done in an emergency to limit access to the flight information and render it un-viewable and unchangeable from non-essential work stations). Lock-out is a check list item, and it is done when there is a recognition that the flight is in serious trouble. The computer will "time-date" the lockout procedure. (Staff Note: UAL is providing this time-date information to the commission. This should be helpful data about the situational awareness of the airline because the lock-out time will be precise, and it was in the interest of the airline to lock-out the flight information as quickly as possible after learning it was in trouble). Soliday reconfirmed his belief that the time of UAL's lockout of Flight 93 was about the time of the 77 crash.

Government agencies and UAL on 9-11

[SSI] Soliday noted that on 9-11 UAL had multiple government agencies asking for a lot of information, and at times with duplicative requests, and in cases where they had already turned data over, it made record tracking a mess. Agencies demanding data on 9-11 and in the immediate aftermath included NTSB, FAA, FBI, DEA, INS and others. He said UAL was at first given 50 names to check for flight information and no-fly listing. Three days later the list had grown to 1800.

[SSI] He recounted getting a threatening demand letter from the DEA to track the list of names that was almost identical to what the FBI had given UAL, except "a little different." Managing this was very difficult because of the many different derivations and spellings of Middle Eastern names. Soliday stressed the importance of getting government agencies to work with and coordinate with each other to help emergency management and investigations to be operated more efficiently. On 9-11 he found that FBI activities were not being coordinated. He asked the FBI to have one central spot for

requesting and receiving data so UAL could keep track of the information flow. Despite the FBI positive response, it did not happen and a result UAL is unsure of what all the company did and did not provide to the FBI regarding 9-11. He said it's in everyone's advantage to know who gave what to whom when. He recommends that requests for information should come from a single source to better manage the situation.

NTSB Humanitarian Assistance Law

[U] The NTSB law dealing with humanitarian response to victims and families after the downing of a plane does not specifically deal with criminal acts. While United and AAL agreed to apply the provisions to the 9-11 event, there was no legal requirement to do so. There's no telling whether other air carriers would follow suit in the event of future attacks. He believes this should be remedied with a change in the law to include humanitarian response to criminal acts.

UA planes unable to land in Alaska

[U] At one point planes diverted to Anchorage were concerned about their fuel situation because they weren't being allowed to land at a military base. Soliday called the FAA and said that he was going to land the planes no matter what because of the safety risk. Soliday called the tower in Anchorage and demanded to know what was going on. He was told by the tower personnel that a General wasn't going to let them land. Soliday threatened to go to the press. The situation was then resolved, and Soliday said he never learned why the General wasn't letting the aircraft land.

[U] Soliday said there needs to be a clear plan about how to handle emergency closure of the airspace. There needs to be process and it has to be cleaner than the one on 9-11.

Warning aircraft in the air to protect the cockpit

[U] Soliday cited as erroneous information Team 7 said they may have received from the air carriers to the effect that UAL had no means of communicating with all of their dispatchers simultaneously for the purpose of issuing a blanket cockpit warning to UAL's flights in the air. Soliday said that If UAL had wanted to communicate such an order to all dispatchers, it certainly could have been done. The room is only so big, and there are only so many dispatchers in the dispatch facility.

[U] Soliday said he does not remember whether the dispatchers were ordered to contact their flights with a cockpit warning. He said that is the type of thing that, if done, was the kind of thing being done before he arrived at the crisis center.

Assessing other flights for security risk

[LES] Soliday was asked about UAL's efforts to assess the security situation on other flights in the air on 9-11. He said that 22 to 28 agents were in UAL's facilities that day, checking manifests and doing whatever they wanted to do. The FBI had open access to

all of UAL's records including manifests. It was his impression that they were not just investigating the crimes that had occurred with the already downed flights but were addressing the security situation, including checking manifests of other flights on 9-11. He said he did not feel it would have been appropriate to be nosey about what the FBI was doing, or presume to tell them what to do. He noted that three agents were at the FBI's reservations facility and were trained to use the UAL computers. For weeks after 9-11, the FBI had people looking at travel records unfettered. While UAL had 22-28 FBI agents at their headquarters, he understands that AAL only had one agent at their offices. He doesn't remember a single request made by the FBI that UAL denied.

[U] Regarding whether passengers were screened when deplaning from aircraft grounded on 9-11, he said he never thought of doing so, and even if he had, he is not sure how he would have implemented it since he had no arrest authority. He doesn't remember the FBI suggesting that any reverse screening of passengers on flights grounded on 9-11.

Weapons and Tactics

[U] Regarding what kind of weapons and tactics were used, he said he has no first hand knowledge of weaponry but heard about "box cutters" several times.

Communication problems at UA

[U] On 9-11 UAL lost e-mail capability, and some of their phone and cell service because everyone was on the phone trying to "call their best friend" to talk about what was happening. For a couple of hours trying to communicate out of the building was impossible.

Hijacker-Pilot Training and Capability

(Note: Soliday, as a trained and highly qualified/experience airline Captain, agreed to provide technical assistance to Commission staff regarding piloting 757 and 767 aircraft).

FAA certifications

[U] From the FAA you can get a private certification; a commercial certification (adding to that privileges you earn such as a "multi-engine" rating, instrument rating etc.); and then, after a minimum of 1500 hours you can qualify for an ATP (Airline Transport certificate, with a rating in certain aircraft like 757 or 767's etc).

[U] Soliday indicating that one certificate is given for the 757 and 767 ratings. They are very similar cockpits with some small differences. The 757 is a little easier to land.

[U] He indicated that he was discussing piloting skills with a military officer at the Pentagon recently and remarked to the office how tough it would be for any pilot, including himself, to hit the Pentagon directly. He said the officer told him something he

wasn't aware of, that flight 77 actually hit the ground in front of the Pentagon and skipped into the structure.

Flight simulator software

[U] Soliday said that there is PC software called Flight Simulator 2000, which has the 767 package in it. The program is available publicly for purchase and it stuns him how accurate it is and how good it would be as a trainer for cockpit familiarization as long as nothing goes wrong with the aircraft—such as engine failure etc. A lot of what you learn in a simulator is what to do if something goes wrong. You couldn't just go from flying a multi-engine craft like a Cherokee or Seneca etc to flying a 757 or 767 by hand. Simulator training on that aircraft would have been crucial to the operation particularly for manual flying (not auto-pilot).

[U]One of the most important piloting skills is to go from high altitude to down low at the point you desire. If you master the FMC and know how to load in a waypoint and program a descent path to cross a point at such and such an altitude, the airplane will do it for you automatically. That doesn't require a manual piloting skill set. The "feel" to hit the building (the Pentagon particularly because of its low profile, by flying manually is not easy—this would have required significant "simulator time."

[U] Soliday said that if he were going to do the Pentagon he would try to do it all on the autopilot because of how difficult it was.

[U] Soliday said that somewhere along the line they learned where the circuit breakers were and you don't learn that on Microsoft. Soliday said he understands that they turned off certain equipment (probably meant the transponder. He wasn't asked to specify). Soliday agreed that if the hijackers had access to the aircraft manual it would instruct them how to do it.

[U] Soliday said that we should not assume they received training and simulator time only in the United States. Who's to say they didn't get training including "sim time" overseas.

[U] He agreed that flight manuals and PC training opportunities were readily accessible, and together with their flight certifications and simulator training were the tools they would need and most likely used in preparation. He said terrorists don't leave things to chance and that we can sure they prepared themselves as well as possible, which is why he thinks they used autopilot as much as possible.

Navigation and the Flight Management Computer

[U] Regarding navigation, Soliday said they simply had to program the Flight Management Computer (FMC) for their desired destination which they could have done by simply inputting an airport code such as JFK, and then just pushed the LNAV (which (lateral navigation) to activate the order.

[U] In the case of 175 which had to do a last minute bank into the building, he believes that the hijacker put the entire flight plan including intersection with the WTC into the FMC but as he reached the target the computer was just a little bit off so he clicked off the auto-pilot and "hammered" it over (turned manually into the target) which might explain the abrupt, last-minute turn.

[U] Soliday said that you didn't need a simulator to train on the FMC. He believes you can do some of this with software, but you can also go to places other than a simulator facility to train on an FMC. Alternatives to "sim time" would have been much less expensive. He reiterated that they didn't have to have "sim time" to learn the FMC.

GPS and Navigation

[U] The hijackers also could have taken a pocket GPS system walked into the building and taken a lat/long reading. When programming the FMC the hijacker could have punched in either the code of a facility (like an airport code) or the lat/long from the GPS reading. He said the other tactic could have been to take a sectional map and draw two radial lines from two navigation VOR's so that they intersected at the WTC or Pentagon, taken the lat/long of that point and loaded that lat/long into the FMC. (He said that the FMC will also program the radial/radial intersect and it will take you where you want to go).

[U] Soliday believes that they were sophisticated and probably lat/longed their way right to the target by FMC autopilot, rather than leave anything to chance. He believes that they may have made a determination what the best directional approach of attack would be and then mapped a course using way points that would put them in position to attack from the desired vector. By programming the desired waypoints into the FMC they would set themselves up to fly into the target from the desired direction either manually or, more likely, using a lat/long that would ensure they crashed into the target at the desired altitude. He said they could have practiced flying the desired waypoints on the Microsoft program. Once you have punched in a waypoint to change course, the plane will effect the turn taking a "great circle route" using a less than 25-degree bank.

[U] UAL 175 hit the tower coming from the south to the north. AAL 11 hit the tower coming from the north to the south. (Staff note: perhaps they did this to stay out of each other's way).

Planning roll-up

[U] Soliday said that if he were planning this, he would go out and fly the route in Microsoft program, get a GPS and get some waypoints, and validate where the waypoints were. He would plan the best approach using waypoints. All he'd do was set those data points in the computer and factor in the height of the building where he wanted to hit it. (The altitude data could be derived by reading an altimeter while riding up the building in an elevator). All of this data could be loaded into the FMC, including the instruction to

cross the lat/long of the target while at a certain altitude and a desired speed. Once those instructions are input, the plane will carry-out the operation for you.

[U] Soliday said, "What I'm telling you is that these guys would not have to have a great deal of flying skill in the hand-hold piece" to do what they did.

[U] In the case of UAL 175, for the hijacker to have made the last minute turn that he did, he could have simply cranked the "heading knob" to affect the bank. He also said that with respect to the Pentagon they could have loaded in ground elevation because the Pentagon is so low. (Note: While this could be why 77 hit the ground before going into the Pentagon, according to Team 8 the pilot flew a circle before going into the target).

[U] Soliday said that he simply believes the hijackers auto-piloted as much as they could have. Flying a big airplane by hand is very sensitive. Again, he said he would fly the route 100 times in Microsoft (which has a visual of New York City). He would take cues on the ground to make sure he was on route and autopilot everything he could.

Weather

[U] Soliday said that weather would not have been a critical factor if the hijackers planned on using the FMC, but you wouldn't want to do the operation in less than two to three miles visibility. Perhaps excellent weather was in their operational plan but it wasn't necessary. To the extent they needed good weather it was only for the very last part. They would want to see the last couple of miles in order to be able to adjust for any small errors in the accuracy of the FMC. He said they could have done this operation with their skill level with 2000 foot ceiling and two miles in range. (Note: the hijackers wanted maximum speed for maximum damage).

Autopilot disengagement

[U] The Flight Data Recorder on UA 93 may show (unconfirmed) that the hijacker engaged and disengaged the autopilot a number of times. Soliday said that there are a number of ways to engage and disengage the autopilot. What you would want to discern of what function is disengaging the autopilot. Was it the hijacker in the pilot seat pushing incorrect buttons or doing it on purpose? Was it a hijacker in co-pilot seat accidentally pressing a button on the steering mechanism? There is also a disengage bar on the front glare shield. There are four or five ways to disengage the autopilot. Determining what function disengaged the autopilot might provide some clue about what was happening in the cockpit and the intentions of the hijacker piloting the aircraft. With respect to 93, the meandering flight path could indicate that he was not operating the FMC properly, and was having trouble loading the waypoints.

Flight data recording

[U] The 757 and 767 have means of recording flight data, beyond the flight data recorder, via memory chips in the engine and elsewhere. Boeing can tell you from the bit map of the data buss about what lat/longs were punched into the computer.

[U] Soliday said he's not sure what the NTSB or FBI has available to them but United can load the UAL 93 flight recorder into their automated system and tell us exactly what the instruments were doing on the inside and what the aircraft was doing on the outside from the data it holds. United would be glad to do this in any kind of controlled environment we want.

Recommendations

(Note: Staff agreed to contact Soliday in the Spring to discuss further recommendations he may wish to provide)

[U] Soliday recommended that: 1) a comprehensive strategic plan for security (one that "looks at the whole thing") should be produced; 2) thorough studies should be undertaken on human factors causing people to fail in security roles; and 3) significant research and development efforts should be made on Quadropole and other Red Light/Green Light technologies for checkpoint screening. He added that the security system should not keep throwing band-aids on or in fighting the last war.

[U] Soliday said that if the commission decides that a policy should be put into place about shutting down the ATC or grounding a particular carrier's aircraft, the scenario should be exercised and timed out so that all stakeholders knew what to expect and what the capacity of the system would be.

[U] The NTSB acted dealing with humanitarian response does not specifically deal with criminal acts. While United and AAL agreed to apply the provisions to the 9-11 event, there was no legal requirement to do so. There's no telling whether other air carriers would comply. This should be remedied with a change in the law.

[U] Soliday said there needs to be a clear plan about how to handle emergency closure of the airspace. There needs to be process and it has to be cleaner than the one on 9-11.

SOLIDAY III—The following information comes from a phone briefing held among John Raidt, Ed Soliday and Jeff Ellis (UA outside counsel)

Pilot pre-flight routine and aircraft readiness

[U] Soliday said that pilots are required to sign a release before they push back, which affirms that the pilot and dispatcher agree on the fuel, affirms they agree on an alternate airport in case of weather or other contingencies, and affirms they agree on gross weight of the aircraft.

[U] Also the pilot must read the PODB's—these are urgent messages that carriers want their crew to read, including on security. The PODB's fall into three categories:
1) General messages 2) Fleet specific messages (kinds of aircraft) 3) Aircraft specific messages.

[U] Pilots also read a bulletin board which includes NOTAM's (Notice to Airmen).

[U] Maintenance issues are printed out for the pilot.

[U] The pilot signs-off one hour before flight.

[U] Regarding fuel, Soliday said that you usually load fuel enough to fly for 45 minutes beyond your destination. This is a Federal Aviation Regulation (FAR). Fuel needs are calculated by the dispatcher and the pilot factoring in weather, etc. Soliday also said that there is a fuel gauge in the cockpit.

Dispatcher Voice Communications with aircraft

[U] Soliday said that when a dispatcher wants to radio an aircraft they do it through Airinc.

Aircraft Performance with passengers loaded in back

[U] Soliday said that loading everyone in the back of the aircraft would not cause the airplane to fly erratically. He believes that erratic flying is usually caused by Pilot Induced Oscillation (PIO).

Autopilot

[U] Soliday said that there are multiple ways to turn-off the autopilot, which can be done inadvertently.

Keying the cockpit microphone

[SSI] Keying the mike could be a pilot signaling, but not very likely in Soliday's view. He would bet more on Atta mistaking the yoke mike switch for the yoke autopilot

disconnect or just grabbing the yoke where one of the mike switches is located.

[U] Another possibility is that Atta did not know how to work the microphone selector box and was clicking the mic in each position to try to figure out how to work the PA.If I knew what the airplane was doing during the clicking, I would have a better idea.

Flight path information

[U[Soliday reported that R-3 data comes right off the radar. This data give you the track swing. If he's not holding track the data will show if the rate of sink is even. If so, that means the FMC is operating rather than manual flying.