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MEMORANDUM FOR THE RECORD

Event: National Transportation Safety Board (NTSB) Briefing

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Special Access Issues: None

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Team Number: 8

Location: NTSB at 490 L'Enfant Plaza, Washington, DC

Participants – Non-Commission: Chris Julius, NTSB General Counsel; Jim Ritter, Radar technician; Joseph Kolly, Chief of Vehicle Performance Division; Vernon Ellingston, Director of Research and Engineering; James Cash, Chief of Vehicle Recorder; Daniel Bower, Senior Aero Engineer; and John O'Callaghan, NRS Aircraft Performance

Participants – Commission: John Farmer, Miles Kara, Steve Dunne, and Lisa Sullivan

The purpose of the briefing was to get a general sense of NTSB's role following the four hijackings on 9/11, and to reconcile Miles' outstanding questions regarding the data provided to the Commission in response to NTSB document request #1:

> All records relating to the NTSB's review of radar data from the United States Air Force and Federal Aviation Administration concerning (1) the hijacked aircraft on September 11, 2001, and (2) the United States Government's air defense response to the hijacked aircraft. This request includes, but is not limited to, both the raw radar files and the NTSB's analysis of the combined radar information.

Accuracy of Joint Surveillance System Radars

The technicians explained the impact of the 25.3 second error in the Northeast Air Defense Sector (NEADS) portion of the Joint Surveillance System on September 11, 2001. NTSB radar technicians, in looking back at data from all flights, initially used Air Force data (the 84th RADES Squadron) as its standard. They use RADES data because it is received raw, whereas FAA radar is filtered. Upon comparison, technicians found that RADES data lagged FAA data. The 84th RADES determined for the NTSB that the NEADS radar clock was slow on that day. The error was factored into the NTSB analysis and in its final report.

The standard is to "synchronize" different data sets to the GPS standard (global positioning system). NTSB advised that the NY TRACON approach radar, which tracked the impact of AA11 traffic was accurate to the CPS standard.

NTSB Technical Work:

NTSB prefers the raw Air Force radar data because the technicians perform their own evaluations and extraction conversions with the data. To do this, they need the reported altitude, range, azimuth, and time of the radar hits.

Another reason why NTSB prefers RADES to the FAA is that the FAA takes too long to send them the data; whereas the Air Force has been known to send it before the NTSB has made the request.

John Farmer asked NTSB how its role differed on 9/11 than in usual aviation accidents. Ordinarily, NTSB has the lead on aviation accident investigations. On 9/11 their role was to provide technical support to the FBI in its criminal investigation. FBI brought NTSB the recorders from UA 93 (from Shanksville, PA) and AA 77 (from Arlington, VA). NTSB helped with recovery and identified plane parts at the clean-up sites.

In his role as chief of voice and flight deck recorders, Jim Cash validated and reported on the recordings recovered from both crash sites. After the 9/11 hijackings, he moved his lab down to Quantico, VA to lend his expertise and equipment to the FBI's investigation.

All those that listened to the recording from the flight UA 93 were subject to a nondisclosure agreement because of the ongoing Moussoaui investigation. For this reason, not much was said on the topic of the voice recordings. Jim offered that the combination of data sources revealed more than the technicians had anticipated. However, he wished that he and his lab could have done more work with the records of cell phone calls and recordings from the flights.

Jim Ritter and Joe Kolly, also from the vehicle performance division, take the data from the recorders and integrate it with the radar data to produce an analysis of the vehicle's performance. 9/11 was an extraordinary circumstances that generated "chain of custody" issues between NTSB and FBI over the data and analysis. The NTSB representatives joked that bringing their equipment to Quantico wasn't a problem; it was getting back out with it that was difficult.

NTSB in New York took on more of an observational role. The office of Aviation Safety rotated people in and out of the clean up site, and tried to identify recorders in the wreckage. NTSB speculated that the never-recovered recorders from the flights AA 11 and UA 175 either melted beyond recognition or thrown a great distance from the crash site. It is doubtful they were carried away unnoticed, given the care taken by recovery staff.

Trajectory studies were done by NTSB staff to try and determine the location of the recorders, should they have been thrown upon impact.

AA 77:
Miles questioned the NTSB staff as to why flight AA 77 showed no radar returns for an extended period (?) over Ashland (WV?). Technicians informed him that with the transponder turned off, controllers were reliant on primary returns, which are harder to track because primary radar does not tag returns which would enable a controller to identify the airplane in real time. FAA controllers covering that area would have picked the plane up on primary radar, but it is not their practice to record primary radar. This would explain why there is no data for the flight over that area. The 84th RADES' is the only data source with long range radar uses and records primary radar, but the plane was too far inland for it to pick up the track at the time.

After making the turn and heading back east, flight 77 was first picked back up on primary radar by Dulles approach tower.

Long range radar returns every 12 seconds, and short range every 4.5 seconds.
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NTSB is able to narrow in on radar returns provided by the 84th Rades. FAA provides data described as a "mosaic," and is harder to distinguish individual tracks.

UA 93:
In looking over the radar tracks of UA 93, the technicians reported that Washington Center was mainly tracking it that day (ZDC), and the only area without coverage is over Pittsburgh. They did not have a clear explanation as to why that gap is there. Miles requested copies of the draft radar plots brought out by the technicians at the briefing. Julius said the material (or a later draft version of it) was supplied to the Commission on disc 1 of two.

The technicians said that when a plane is not "squawking," as in the case of UA 93, the technician must plot everything in order to sift through all the returns and pinpoint which track is the plane. Tedious work.

When asked what they thought the target of UA 93 was, the staff said they did not spend time projecting a possible target. They reported that the FBI seemed most concerned with the flight paths of the planes.

In summation, NTSB looked at the data, synchronized the data sets, came up with a sequence of events for each flight, and determined how intelligently/ professionally each plane was flown.

TA and TU:
NTSB told Commission staff that FAA returns that are "processed" are called "tracking unassociated" and "tracking associated." This means that the FAA filter the returns through computer software for the benefit of the controllers which under normal circumstances would help them distinguish and identify tracks of different aircraft more easily. However, for the purposes of the investigation, TA an TU tracks are less accurate. The data is "projected" (speed and time), rather than actual.

Finally, NTSB said that the Commission would have to follow up with the office of aviation safety to learn more on the speed with which NTSB responded to reports of the aviation accident of that day. The employee from that office referred to in the FAA Command Center log was Bob Pierce of NTSB in NY. That office is the first to get notice of all crashes.