National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: March 21, 2011

In reply refer to: A-11-17

The Honorable J. Randolph Babbitt
Administrator
Federal Aviation Administration
Washington, D.C. 20591

In this letter, the National Transportation Safety Board (NTSB) recommends that the Federal Aviation Administration (FAA) take action to improve the safety of air traffic control (ATC) operations by prohibiting air traffic controllers from providing supervisory oversight while performing operational air traffic duties. As discussed below, the NTSB investigations of several events have found ATC staffing scenarios in which the supervisory function was being performed by a controller who was also performing operational duties. In many instances, a sufficient number of personnel were on duty at the time of the events such that another qualified controller could have been designated to supervise; however, ATC management's decisions concerning staffing utilization resulted in a lack of distinct supervisory oversight, thus diminishing or eliminating the effectiveness of the supervisory role.

Accidents and Incidents

Teterboro Airport, Teterboro, New Jersey

On August 8, 2009, about 1153 eastern daylight time, a Eurocopter AS350BA helicopter and a Piper PA-32R-300 airplane collided over the Hudson River near Hoboken, New Jersey.[1] All occupants on board both aircraft were killed. The Piper had departed Teterboro Airport (TEB) and was receiving radar traffic advisories from the TEB local controller prior to a handoff to Newark Liberty International Airport (EWR). TEB tower staffing at the time of the midair collision included a developmental controller working the flight data and clearance delivery positions and a local controller working the ground control/arrival radar positions while also acting as controller-in-charge (CIC). Two other controllers, one was qualified as CIC, and a front line manager/supervisor were on break and not in the tower cab. The result of the front line

[1] For more information, see *Midair Collision Over Hudson River, Piper PA-32R-300, N71MC and Eurocopter AS350BA, N401LH Near Hoboken, New Jersey, August 8, 2009*. Aircraft Accident Summary Report NTSB/AAR-10/05 (Washington, DC: National Transportation Safety Board, 2010.)

manager's staffing decision to be on break at the same time as another CIC-qualified controller was that other sources of supervision were potentially available but not utilized.

About 3 minutes before the accident, the TEB local controller initiated a nonpertinent telephone call to airport operations while continuing to provide instructions to the airplane pilot, including a delayed instruction to switch to the EWR tower frequency that the pilot read back incorrectly and the controller did not correct. The NTSB determined that the probable cause of this accident was, in part, the Teterboro Airport local controller's nonpertinent telephone conversation, which distracted him from his air traffic control duties, including correcting the airplane pilot's read back of the EWR tower frequency and the timely transfer of communications for the accident airplane to the EWR tower.[2]

On June 25, 2008, about 0534 eastern daylight time, a runway incursion occurred at TEB, when a Learjet 45 landed on runway 19, which was closed, and passed within approximately 150 feet of two workers on the runway.[3] The incursion occurred during the midnight shift when the tower controller was the only specialist on duty, as scheduled. Accordingly, the tower controller was also responsible for watch supervision.[4] The tower controller was aware that runways 1 and 19 were closed due to maintenance-related work and appropriately placed two devices on the flight progress strip bays at the local control position as a reminder. However, he failed to place that information on the recorded automatic terminal information service for arriving and departing air traffic. He also failed to inform the local approach controller that runway 19 was closed when the approach controller advised that an airplane was inbound to land on runway 19. No supervision of this controller was available on the midnight shift to verify compliance with published procedures and directives. The NTSB determined that the probable cause of this incident was the local air traffic controller's failure to follow published procedures and directives, resulting in a landing airplane coming in close proximity to runway workers.

Reading Regional Airport/Carl A. Spaatz Field, Reading Pennsylvania

On August 27, 2008, two separate controller operational errors occurred at Reading Regional Airport/Carl A. Spaatz Field (RDG) in Reading, Pennsylvania.[5] At the time of the incidents, two of the four controllers assigned to the facility were on break; one was qualified as

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[2] The full probable cause statement for this accident reads, "the inherent limitations of the see-and-avoid concept, which made it difficult for the airplane pilot to see the helicopter until the final seconds before the collision, and (2) the Teterboro Airport local controller's nonpertinent telephone conversation, which distracted him from his air traffic control (ATC) duties, including correcting the airplane pilot's read back of the Newark Liberty International Airport (EWR) tower frequency and the timely transfer of communications for the accident airplane to the EWR tower. Contributing to this accident were (1) both pilots' ineffective use of available information from their aircraft's electronic traffic advisory system to maintain awareness of nearby aircraft, (2) inadequate Federal Aviation Administration (FAA) procedures for transfer of communications among ATC facilities near the Hudson River Class B exclusion area; and (3) FAA regulations that did not provide adequate vertical separation for aircraft operating in the Hudson River Class B exclusion area."

[3] More information about this incident, NTSB case number OPS08IA009, is available on the NTSB's website at <http://www.ntsb.gov/ntsb/query.asp>.

[4] FAA Order 7210.3, "Facility Operation and Administration," paragraph 2-6-2 states, in part, that "at facilities where a specialist stands a watch alone, the responsibility for watch supervision becomes part of his/her duties."

[5] More information about this incident, NTSB case number OPS08IA012, is available on the NTSB's website at <http://www.ntsb.gov/ntsb/query.asp>.

CIC and the other was a certified professional controller qualified on all positions except CIC. In the tower cab, one controller worked arrival radar/flight data at the approach control position, and the second controller worked the local control/ground control positions and performed the role of CIC. The first error occurred about 1614 eastern daylight time when the tower local controller/CIC cleared an aircraft for a low approach to a closed runway without providing an altitude restriction. The second error occurred about 10 minutes later when the same local controller cleared a subsequent arriving aircraft to land on the same closed runway. The result of the facility management's staffing decision was that a controller who was qualified and available to act as CIC was permitted to be on break while the other CIC-qualified controller was responsible for supervisory oversight and performing operational duties. The NTSB determined that the probable cause of these incidents was the tower local controller/CIC permitting an aircraft to conduct a low approach and another aircraft to land on a closed runway. Contributing to the incidents, in part, was the facility management's tower staffing policy.

On August 3, 2008, about 1519 eastern daylight time, a Cessna 550 was substantially damaged when it impacted an agricultural tractor during a landing roll at RDG. Shortly before the accident, the local controller cleared the Cessna to land on runway 31, then authorized the operator of a locally based agricultural John Deere tractor to cross runway 31. The local controller did not observe the collision because he was watching another aircraft taxiing to the ramp. Tower staffing at the time of the accident included a controller working the local control and ground control positions, a controller working as CIC and the arrival radar/approach control position, and a controller working the flight data and clearance delivery operator positions. At the time of the ground collision, the CIC was working a sit-down position in front of a large radar repeater, providing aircraft separation services and safety advisories, which prevented him from observing the airport and providing effective oversight of the local control/ground control position. A front line manager/operations supervisor was also on duty at the time but, because a CIC was on duty in the tower, decided to perform administrative functions in an office separate from the tower cab. The NTSB determined that the probable cause of the accident, in part, was the local controller's failure to properly monitor the runway environment.[6]

Washington Dulles International Airport, Chantilly, Virginia

On September 13, 2007, about 0313 eastern daylight time, a runway incursion occurred at Washington Dulles International Airport (IAD), Chantilly, Virginia, when a Learjet 35 departed on a closed, unlit runway that had been occupied by a work crew and vehicle shortly before.[7] At the time of the incident, two controllers were assigned to the IAD tower. The local controller was working all positions in the tower and was also acting as CIC. The second controller of the shift, who was qualified as a CIC, was on break at the time of the incident; the controllers were each

[6] The full probable cause statement for this accident reads, "the air traffic controller's failure to properly monitor the runway environment. Contributing to the accident was the tractor operator's failure to scan the active runway prior to crossing, and the Federal Aviation Administration's inadequate emphasis on vehicle operator visual vigilance when crossing active runways with air traffic control clearance." More information about this accident, NTSB case number NYC08FA265, is available on the NTSB's website at <http://www.ntsb.gov/ntsb/query.asp>.

[7] More information about this incident, NTSB case number OPS07IA010, is available on the NTSB's website at <http://www.ntsb.gov/ntsb/query.asp>.

taking breaks at 2-hour intervals—one relieving the other—during their shift. The result was that only one controller was in the tower at a time, which was against the facility's policy.

About 0312, the tower local controller directed the airplane to "taxi into position and hold" (TIPH) on runway 19R (Order 7210.3, "Facility Operation and Administration" prohibits TIPH operations when the local position is combined with any other non-local control position) and cleared the airplane for takeoff shortly thereafter. A survey crew working on the runway heard the clearance and advised that they were on the runway. Instead of canceling the takeoff clearance, the tower controller asked the survey crew if they could clear the runway. The survey crew drove into the grass around a taxiway and reported clear as the airplane rolled by and took off, missing a collision with the vehicle by about 600 feet. The NTSB determined that the probable cause of this incident was the IAD tower local controller's failure to ensure that the runway was free of all known ground vehicles, equipment, and personnel before permitting a departing aircraft to start takeoff roll. Additionally, the controller did not comply with local directives prohibiting taxi into position and hold operations while tower positions were combined.

Discussion

FAA Order 7210.3, "Facility Operation and Administration," Section 6, paragraph 2-6-1, "Watch Supervision" states, in part, that "watch supervision requires maintaining situational awareness…of traffic activity and operational conditions in order to provide timely assistance to specialists and…ensure[s] available resources are deployed for optimal efficiency. Watch supervision may be performed by a manager, supervisor, or controller-in-charge." Paragraph 2-6-2, "Watch Supervision Assignments" states, in part, that:

> Efficient air traffic services require watch supervision regardless of the number of people assigned. Facilities shall establish local procedures for watch supervision assignments. …
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> At facilities where a specialist stands a watch alone, the responsibility for watch supervision becomes part of his/her duties.
>
> Personnel performing watch supervision duties may be required to perform operational duties in addition to watch supervision duties. The performance of operational duties ***should*** [[8]emphasis added] be done on a limited basis such as during periods of low activity.
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> …If the supervisor/CIC leaves the operational area or is engaged in an activity which will interfere with or preclude the performance of watch supervision duties, then another qualified individual ***must*** [[9]emphasis added] be designated to supervise the watch.

[8] Per FAA Order 7110.65, "Air Traffic Control," paragraph 1-2-1, "Word Meanings," "should" means a procedure is recommended.

[9] Per FAA Order 7110.65, "Air Traffic Control," paragraph 1-2-1, "Word Meanings," "shall" or "must" mean a procedure is mandatory.

While Order 7210.3 emphasizes the importance and necessity of watch supervision and contains requirements and guidelines intended to limit the concurrent performance of operational and supervisory duties, it nonetheless authorizes these potentially conflicting duties to be combined, particularly when controllers work a shift alone.[10] Although the NTSB believes the recommended procedure of minimizing operational performance duties coincident with supervisory duties is noteworthy, it also believes that it is unrealistic to expect an ATC team or a lone controller to consistently predict periods of low activity in an ATC environment. As part of a staffing directive, the word "should" is a recommended procedure and subject to the discretion of the person or persons managing the staffing issue. The phrasing of the requirement in paragraph 2.6.2 that another qualified individual be designated to supervise the watch if the supervisor/CIC is engaged in an activity that will interfere with or preclude the performance of watch supervision duties is also subject to some interpretation though the NTSB believes that, in most instances, the performance of operational duties should qualify as such an activity.

Despite the intent of Order 7210.3 to provide adequate watch supervision and, in all but one of the events discussed, the availability of sufficient and qualified staff to act in a strictly supervisory role, management staffing decisions resulted in these assets not being used; in the remaining event, a controller was on duty alone during the midnight shift and was therefore responsible for supervising himself. The particular difficulty of supervising oneself is amply demonstrated in most of the events discussed in that the controller committing the error was also acting as CIC. The NTSB concludes that the watch supervision directives in Order 7210.3 are incompatible with effective oversight and that the effectiveness of the supervisory role is reduced when it is performed in combination with operational duties, leading to operational errors, incidents, and accidents.

Therefore, the National Transportation Safety Board makes the following recommendation to the Federal Aviation Administration:

> Prohibit air traffic controllers from providing supervisory oversight while performing operational air traffic duties. (A-11-17)

In response to the recommendation in this letter, please refer to Safety Recommendation A-11-17. If you would like to submit your response electronically rather than in hard copy, you may send it to the following e-mail address: correspondence@ntsb.gov. If your response includes attachments that exceed 5 megabytes, please e-mail us asking for instructions on how to use our secure mailbox. To avoid confusion, please use only one method of submission (that is, do not submit both an electronic copy and a hard copy of the same response letter).

[10] The National Air Traffic Controllers Association (NATCA) National Constitution, Standing Rules and Policy & Position Statements (effective September 12, 2008) states NATCA's intent to "establish that all working shifts at air traffic control facilities be staffed with a minimum of two full performance level controllers."

Chairman HERSMAN, Vice Chairman HART, and Members SUMWALT, ROSEKIND, and WEENER concurred in this recommendation.

[Original Signed]

By: Deborah A.P. Hersman
Chairman