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National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: May 22, 1987

In reply refer to: A-87-46 through -51

Honorable Donald D. Engen
Administrator
Federal Aviation Administration
Washington, D.C. 20591

On November 10, 1985, about 1722 Eastern standard time, a Nabisco Brands, Inc., Dassault Falcon, DA50 jet and an Air Pegasus flying club Piper Archer, PA28-181, collided about 1,500 feet over the towns of Fairview and Cliffside Park, New Jersey. The DA50 was cleared for a standard instrument approach procedure in visual meteorological conditions and was in a left turn to position itself on the downwind leg to runway 19 at the Teterboro Airport, and the PA28 was transiting the airport traffic area from west to east when they collided. The accident occurred 4 1/2 miles east-southeast at the edge of the airport traffic area in visual meteorological conditions. Both airplanes had been in radio contact with the Teterboro control tower. The flightcrew, the only occupants aboard the DA50, and the pilot and two passengers onboard the PA28 were killed. The DA50 crashed into an apartment building killing one resident and seriously injuring two bystanders. 1/

The accident sequence of events began when the automatic radar tracking system (ARTS) computer did not automatically acquire the DA50 after it departed Morristown because it left about 19 minutes earlier than proposed on the flightplan. As a result, the DA50's identification and flightplan was not listed in the departure controller's tabular list. Normally this would have occurred automatically. As a result, the departure controller was required to initiate a manual track of the airplane which provided an identification tag, but that action did not activate an automatic transmission of data on the DA50. Therefore, it did not generate a departure message to the central computer which, in turn, did not send a machine-generated flight strip to the Teterboro (TEB) control tower. The National Transportation Safety Board believes that the lack of a flight strip is significant in light of the events that led to the accident because it could have served as a backup and a reminder when the coordinator failed to alert the other controllers of the DA50's inbound flight. However, before the DA50 was released for takeoff at Morristown, the departure controller verbally coordinated the airplane's impending arrival with the TEB coordinator according to established procedures. There was no requirement for the controller to amend the departure time of the airplane, and he effected the necessary coordination with TEB by landline as required.

1/ For more detailed information, read Aviation Accident Report—"Midair Collision of Nabisco Brands, Inc., Dassault Falcon, DA50, N784B and Air Pegasus Corporation, Piper Archer, PA28-181, N1977H Fairview, New Jersey, November 10, 1985" (NTSB/AAR-87/5).

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Since radar coverage by the terminal radar approach control (TRACON) does not extend down to the runway at TEB, the departure controller was required to tell the flightcrew that radar service was terminated when he transferred control to TEB. However, because the DA50 crew reported to TEB that it had passed the final approach fix (CLIFO), the controller's failure to do so was not considered a factor in the accident.

After receiving the initial call from the departure controller, the coordinator should have, but apparently did not check to see if a machine-generated strip was available. If one was not, it was his responsibility to prepare one before control of the DA50 was transferred to the TEB local controller. Also, he asked the clearance delivery controller to cover his position while he left the tower cab. His decision to ask the clearance delivery controller to cover for him while he was absent from the cab was proper and routine. However, he did not give a proper relief briefing to the clearance delivery controller, nor did she request a briefing. The clearance delivery controller should have been made aware of all the active traffic handled by the coordinator. The lack of a proper briefing on the part of both controllers was contrary to required procedures and precluded a second opportunity to the controllers to stop the sequence of events that led to the accident.

Furthermore, the clearance delivery controller also failed to insure that the local controller was aware of the DA50. Although the clearance delivery controller acknowledged receipt of the DA50's progress report from the departure controller, she failed to insure that the local controller knew the location of the DA50. The local controller admitted that he was surprised to learn that the DA50 was overhead the airport when it made its initial call to the tower. He said he was busy with other airplanes at the time and characterized the traffic volume as moderate and building. He reported that he could have provided adequate advisories to the DA50 and PA28 for traffic sequencing had he received the progress report on the DA50. Therefore, the Safety Board believes that a breakdown in coordination occurred in the control tower which set the stage for the accident. In the Safety Board's opinion, the local controller may have been alerted sooner to a potential conflict between the DA50 and the PA28 if the coordination process had been timely, accurate, and complete.

TEB's airport traffic area is essentially compressed under the confines of the New York terminal control area (TCA) because of its location with respect to LaGuardia and Newark International Airports. As a result of the design of the TCA and the air traffic congestion in the area, pilots flying general aviation airplanes for pleasure under visual flight rules (VFR) are inclined to overfly TEB in order to take the shortest route to the Hudson River for a scenic flight. In fact, under the present design the Hudson River VFR corridor is frequently used by these pilots as a major transition to remain clear of other controlled airspace. No permission is needed to fly in the corridor and radio contact with a controlling agency is not required. Furthermore, because of the heavy instrument flight rules (IFR) traffic demands on air traffic control (ATC) in the New York area, pilots flying under VFR are no doubt unsuccessful in obtaining radar traffic advisory services in the area at every request. Such a situation creates a critical need for clear and concise communications, ATC coordination, and the necessity for pilots to exercise vigilant "see and avoid" practices when landing and departing the TEB airport. The importance of these factors are demonstrated in this accident.

The policy of permitting the local controller to make on-the-spot decisions about transiting aircraft under these circumstances is questionable. The policy places a great deal of importance on the controller's performance under varying working conditions. As evident in this accident, the local controller was very busy. However, because he was not

made aware of the DA50 progress report, the Safety Board believes that his decision to approve the overflight was in accordance with standard practice at TEB. Had he been given a timely progress report, the Safety Board believes that the local controller would have been alerted to a potential conflict between the DA50 and the PA28, and probably could have taken action to prevent the accident. The Safety Board is of the belief that the practice of giving this on-the-spot approval should have been based on a sound policy and a procedure that took into consideration traffic volume and complexity. The responsibility of formulating this policy and procedure was that of supervisory personnel and the tower manager.

Furthermore, the Safety Board believes that had the control tower been equipped with a bright radar indicator tower equipment (BRITE IV) radar display enhanced with alpha-numeric capability, the local controller could have detected the arrival of the DA50 in advance and taken action to provide timely advisories without the use of a flight strip. Such enhancement of the BRITE display at TEB would further improve the situation found as the result of a previous midair collision near TEB. 2/ In addition, the TEB control tower is limited to providing VFR service only because the controllers are not radar qualified and cannot provide positive separation and the tower is not designed to provide this service. Reliance on the "see and avoid" concept as a sole means of providing air traffic separation at TEB is questionable, in view of the compressed airspace situation and the mix of aircraft types with significant performance differences in airspeeds and maneuvering capabilities.

Therefore, as a result of its investigation, the National Transportation Safety Board recommended that the Federal Aviation Administration:

Issue a General Notice (GENOT) to all facilities to require that every controller is briefed on the importance of conducting a complete position relief briefing prior to assuming duties in accordance with the air traffic controller's handbook 7110.65d, appendix D and FAA Handbook 7210.3H, Section 2, Paragraph 222. (Class II, Priority Action) (A-87-46)

Issue a General Notice (GENOT) to all facilities to require that every controller is briefed on the application and provisions for terminating radar service to aircraft in accordance with the air traffic controller's handbook 7110.65d, Section 5, Paragraph 5-13. (Class II, Priority Action) (A-87-47)

Issue a General Notice (GENOT) to all air traffic control facilities requiring the establishment of preferred routes for VFR aircraft that request to transit the airport traffic area. These routings should take into account traffic pattern altitudes, instrument departure and arrival routes and altitudes, prominent landmarks, and other operational considerations unique to that facility. (Class II, Priority Action) (A-87-48)

Upgrade BRITE radar systems with alpha-numeric, minimum safe altitude warning (MSAW), and conflict alert capabilities at Level II VFR terminal facilities having limited BRITE radar information with significant traffic density and complexity problems. (Class II, Priority Action) (A-87-49)

2/ For more detailed information read, Aircraft Accident Report—"Ronson Aviation, Bell 206B, N27670 and Seminola Air Charter, Piper PA-34-200T, N8110R, Midair Collision, East Rutherford, New Jersey, September 23, 1981" (NTSB-AAR-82-6).

Implement the necessary procedures to expand and initiate appropriate training that would qualify the Teterboro Airport for an upgrade to a limited radar approach control. (Class II, Priority Action) (A-87-50)

Initiate a staff-study in accordance with Federal Aviation Administration's Handbook 7400.2C to determine the feasibility of implementing an airport radar service area (ARSA) at the Teterboro Airport. (Class II, Priority Action) (A-87-51)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and LAUBER and NALL, Members, concurred in these recommendations.


By: Jim Burnett
Chairman