SP-20
Ray 1855

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: November 15, 1985

Forwarded to:

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

SAFETY RECOMMENDATION(S)

A-85-112 through -114

The National Transportation Safety Board investigated a near midair collision which occurred about 1535 1/ on December 20, 1984, near New Orleans, Louisiana, and involved a Lufthansa German Airlines Boeing 747-200 and a low wing, single engine airplane which was not identified. Lufthansa Airlines Flight 5432 (LH5432) was operating as a charter flight from Frankfort, West Germany, to New Orleans International (Moisant Field) Airport. There were 353 passengers, 16 flight attendants, and a cockpit crew of 3 onboard the airplane. There were no reported injuries to the passengers or crew.

At the time of the incident, LH5432 was 8 miles north of Moisant Field and was executing a localizer backcourse runway 19 instrument approach procedure. In accordance with this approach procedure, the airplane was at an altitude of 2,000 feet mean sea level (m.s.l.). The captain stated that he was flying the airplane when the co-pilot first observed an approaching airplane and called it to his attention. The captain said that he looked up and saw the airplane at the same altitude and coming nearly head on to his airplane, and that he made an immediate right bank of about 45 degrees to avoid a collision with the other airplane. The captain further stated that the other airplane did not take any evasive action and that he estimated the two airplanes came within 50 yards of each other. An analysis of the information recorded on the airplane's digital flight data recorder (DFDR) indicated that, at 1535, the flight was level at 2,000 feet when a sudden maneuver to the right was executed, involving approximately 35 degrees of bank.

1/ All times shown are central standard time, based on the 24-hour clock.

At the time of the incident, LH5432 was on the Moisant Airport Air Traffic Control Tower (ATCT) local control frequency. The local controller, a first line supervisor, was providing initial position training to a developmental controller at the time. The traffic level was reported to be light to moderate with the supervisor doing the majority of the work as the developmental controller monitored the position. The local controller reported that he did not observe the single engine airplane on the tower BRITE radar indicator either before or after the incident and that he had no basis on which to issue a traffic advisory. The New Orleans Arrival Controller observed a radar transponder code 1200 target without Mode C shortly after transferring communications with LH5432 to the local controller. However, his attempt to alert LH5432 of the traffic was blocked by another radio transmission.

A Group II Terminal Control Area (TCA) is in place at the New Orleans International Airport. The floor, or base, of the TCA at the location of the incident is 2,000 feet m.s.l. The localizer backcourse runway 19 instrument approach procedure requires that flights maintain an altitude of not lower than 2,000 feet until they pass the AMPAR Intersection located on the final approach course at 5.7 miles from the DME facility which is at the airport. The entire localizer backcourse runway 19 approach procedure is contained within the existing TCA with instrument flight rules (IFR) aircraft authorized to operate at the floor (2,000 feet) of the TCA during a major segment of the approach. Aircraft complying with visual flight rules (VFR) may operate at altitudes below 2,000 feet in the area where the incident occurred without having to communicate with the ATC facility that controls traffic in the TCA.

The investigation of this incident revealed that the extent of protection provided IFR aircraft by the New Orleans TCA is affected by the design of the instrument approach procedure and by the boundaries and dimensions of the TCA. It is permissible for an aircraft, executing the instrument approach procedure, to be at an altitude of 2,000 feet which is the same altitude as the floor of the TCA. At the same time, other aircraft can fly in the same location but just under the floor altitude of the TCA. In such a case, the aircraft flying in the TCA is not provided positive control protection from other aircraft flying just under the TCA.

Safety Board investigators reviewed Federal Aviation Administration (FAA) Handbook 7400.2C, Procedures for Handling Airspace Matters, and FAA Order 8260.19A, Flight Procedures and Airspace regarding the integration of terminal control areas and instrument approach procedures. Paragraph 6312a of Handbook 7400.2C specifies the general design of a TCA and states, in part, "vertical and lateral limits should be standardized and, to the extent practicable, be designed to retain all published instrument approach procedures once their flight track enters the TCA." Paragraph 6312c specifies the vertical limits of a TCA and states, in part, "For planning purposes, the base of the TCA should be designed for the lowest climb rate of the turbojet aircraft that operate from the airport; normally, a 300-foot per nautical mile rate of climb should be used." The handbook makes no provisions for a "buffer" area between IFR aircraft operating on a published instrument approach procedure within the TCA and aircraft operating beneath the floor of the TCA.

FAA Order 8260.19A includes provisions for a vertical buffer for established routes (airways) wholly within controlled airspace with established minimum en route altitudes (MEA) above the floor of controlled airspace. The order states that the vertical buffer will be 300 feet above the floor of controlled airspace within transition areas (terminal) and 500 feet above within control areas (en route). The order makes no provisions for a vertical buffer between IFR aircraft operating on an instrument approach procedure within the TCA and aircraft operating beneath the floor of the TCA.

The Safety Board is concerned that there is no vertical buffer between aircraft conducting prescribed instrument approaches within a TCA and VFR aircraft operating below the TCA. The Safety Board believes that either the runway 19 instrument approach procedure at the New Orleans International Airport or the TCA should be adjusted to provide a more positive level of protection for aircraft conducting instrument approaches in positive control airspace. Either minimum altitudes specified for the instrument approach procedures should be raised to a higher altitude, or the TCA floor should be lowered to prevent VFR aircraft from operating near the altitudes used by instrument approach aircraft. As an interim measure, control personnel should be required to issue a restriction to IFR arriving aircraft to provide a vertical buffer between those aircraft and the floor of the TCA until permanent action can be taken.

The Safety Board is concerned that a similar problem may arise also in respect to the FAA's new Airport Radar Service Areas (ARSA).

Therefore, the National Transportation Safety Board recommends that the Federal Aviation Administration:

- Revise the localizer backcourse runway 19 instrument approach procedure or the Terminal Control Area at the New Orleans International Airport to provide a vertical buffer between aircraft following the runway 19 instrument approach procedure and uncontrolled visual flight rules (VFR) aircraft operating below the floor of the Terminal Control Area. (Class II, Priority Action) (A-85-112)

- Review instrument approach procedures at airports designated as the primary airport within a Terminal Control Area (TCA) or Airport Radar Service Areas (ARSA) to identity potential conflicts involving an aircraft following a published instrument procedure at the floor of the TCA or ARSA and aircraft operating just below the floor of the TCA or ARSA and, if indicated, modify the instrument approach procedure and/or the TCA/ARSA boundaries to provide for positive vertical separation between the aircraft. (Class II, Priority Action) (A-85-113)

Institute measures, including appropriate changes to FAA Handbook 7400.2C and FAA Order 8260.19A, to improve coordination between personnel involved in the design of Terminal Control Area and Airport Radar Service Area airspace and those involved in the design of instrument approach procedures to prevent the creation of potential hazards to the users of the air traffic system. (Class II, Priority Action) (A-85-114)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and BURSLEY, Member, concurred in these recommendations.

By: Jim Burnett
Chairman