

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: September 9, 1975

Forwarded to:

Honorable James E. Dow
Acting Administrator
Federal Aviation Administration
Washington, D. C. 20594

SAFETY RECOMMENDATION(S)

A-75-78

At the National Transportation Safety Board's public hearing into the crash of Trans World Airlines Flight 514 at Berryville, Virginia, on December 1, 1974, the Federal Aviation Administration's (FAA) guidelines, which govern the construction of the profile view of an instrument approach chart, were discussed.

The VOR/DME 12 instrument approach procedure plan view in effect at the time of the accident provided guidance from a point 38 miles from the VORTAC and as high as a highest initial approach altitude of 3,700 feet. However, the profile was depicted only from the final approach fix of 6 miles from the VORTAC and from an altitude of 1,800 feet.

At the public hearing, pilots testified that, after they are cleared for approach, they immediately use the profile view as a primary source of altitude information. Without considering the merits of this technique, the Safety Board believes that, if the profile view represented a consistent altitude transition from the initial approach fix to the final approach fix, any tendency to overlook the altitude restrictions between these points would be avoided. In an approach procedure where neither a procedure turn nor a 1-minute holding pattern is authorized, and where the profile starts at the final approach fix, pilots can become confused about the applicable minimum altitudes before the final approach fix.


A consistent altitude transition throughout the approach procedure is even more logical in view of changes made by the FAA to the VOR/DME 12 procedure (now a VORTAC 12 approach) at Dulles International Airport. An important revision to this procedure is the extension of the profile to 4,000 feet m.s.l., which exceeds the minimum sector altitude for this quadrant.

FAA Handbook 8260.19 contains guidelines used by the procedure specialist for the construction of the profile view. However, the handbook does not specify exactly where the profile should start if the procedure does not include a procedure turn or a 1-minute holding pattern. Rather, the handbook is concerned with obstruction clearances, and it merely assumes that the transition from the plan view to the profile view will be made properly. However, as illustrated by Flight 514 and the United Air Lines aircraft which narrowly missed the same mountain, existing approach procedure guidelines must be revised to eliminate any misunderstanding concerning applicable minimum altitudes.

An approach chart must not be subject to misinterpretation or misunderstanding. Accordingly, we believe that FAA Handbook 8260.19 should be revised regarding requirements for the profile of an approach which does not have an authorized procedure turn or a 1-minute holding pattern. The profile for this procedure should start at the intermediate approach fix or at an altitude equal to the minimum sector altitude for the quadrant. This extension of the profile, as demonstrated by the new VORTAC 12 chart, would provide a consistent altitude transition throughout the approach and would improve the effectiveness of the chart, since the profile and plan view would reflect identical altitude information for a greater portion of the approach.

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

Revise paragraph 1011 of FAA Handbook 8260.19, dated December 12, 1974, to require that on approach procedures, for which neither a procedure turn nor a 1-minute holding pattern is authorized, the profile must start either at the intermediate fix or at an altitude equal to the minimum sector altitude for the quadrant in which the procedure begins. (Class II)


By: John H. Reed
Chairman

REED, Chairman, THAYER and BURGESS, Members, concurred in the above recommendation. McADAMS and HALEY, Members, did not participate.