

GOVERNMENT/INDUSTRY AERONAUTICAL CHARTING FORUM
Instrument Procedures Group
(Transcribed/Re-Formatted)
HISTORY RECORD

FAA Control # 93-01-117

SUBJECT: Inadequacy of Lateral Obstacle Clearance at Turning Facility FAFs

BACKGROUND/DISCUSSION: TERPS, paragraph's 513b (VOR) and 713b (NDB) permit a turn from the intermediate into final approach segment (FAS) where the facility is the FAF. This is permitted for off-airport VOR and NDB procedures. Further, TERPS tables 14 (VOR) and 15 (NDB) specify the minimum length of the final approach segment, which length depends upon the magnitude of the course change at the facility. The point at which the intermediate segment ends, and the FAS begins, is particularly critical where the FAF is either a VOR or NDB facility, because at this point, the lateral areas of the primary protected airspace are at their narrowest, and there is no secondary area protection. The respective FAS widths where the facility is the FAF are 1.0 miles for the VOR, and 1.25 miles for the NDB, facility to edge of the protected airspace. These widths were historically determined to be the required dimensions for straight ahead flight over the facility when entering the FAS from the intermediate segment. Yet, tables 14 and 15 permit as much as a 30 degree turn over a FAF facility, provided the FAS meets certain minimal lengths, which are less than the 5 mile length considered optimal for a non-precision FAS. The only rationale set forth for tables 14 and 15 is to provide sufficient length to acquire the procedural track. There is no provision in the criteria for additional lateral protection of the FAS for both the turning maneuver and the reacquisition of the procedural track. This is a very demanding maneuver at a critical phase of flight. It involves a turn, and either changing a VOR OBS or interpreting a new NDB bearing. It then immediately requires establishing a new procedural track (including pilot interpretation and integration of a different wind component resulting from the course change), and changing aircraft configuration for final descent to either the MDA or a stepdown fix. Such turns can reasonably be expected to sometimes lead the facility and other times go wide as the turn and other required adjustments are made for entry into, and stabilized flight within, the offset FAS. Some procedures specialists used to compensate for this obvious inadequacy in the subject criteria by providing some additional lateral protection at the turning FAF. Note the attached illustration from the March, 1993 issue of AOPA Pilot magazine which apparently represents the IAPA model for this situation. Also, note the disjointed joining of the intermediate segment with the FAS, which would be wholly inadequate were significant lateral obstacles to exist on either side of the FAS in the vicinity of the FAF.

RECOMMENDATION: TERPS chapter 5 and 7 should be forthwith revised to provide for leading and lagging turns where the facility is the FAF. Circling maneuvering approach category turning radii should be applied to the outside dimension and additional lateral dimensions should be provided to the inside dimension for leading turns. An appropriate amount of secondary airspace protection should also be considered because of the unquantified aspect of this turn at such a critical phase of flight, with the attendant procedural track change tasks.

COMMENT: This recommendation affects the United States Standard for Terminal Instrument Procedures (TERPS), FAA Handbook 8260.3B, and FAA Handbook 8260.19B.

Submitted by: Charles K. Guy
June-03-1993
AIR LINE PILOTS ASSOCIATION

INITIAL DISCUSSION (MEETING 93-01): Unavailable

MEETING 94-01: (From Frank Parr, AVN-210 notes) VOR and NDB facilities, when used as FAF, may not provide sufficient obstacle clearance when a turn is required. Lateral clearance is not increased. ALPA suggests that criteria be revised to provide for leading and lagging turns over the facilities in these cases. AFS-420 will provide this item to the TWG. **Action:** Item Open (AFS-420)

MEETING 94-02: Group agreed to leave open pending future input from ALPA. **Action:** Item Open (ALPA)

MEETING 95-01: Group agreed to leave this item open pending future address by ALPA. **Action:** Item Open (ALPA)

MEETING 95-02: ALPA will re-write their position paper and re-submit at the next meeting. **Action:** Item Open. (ALPA)

MEETING 96-01: ALPA withdraws this issue pending implementation of the Terminal Arrival Airspace (TAA) concept. **Status:** Item Closed.