

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

N 8260.69

National Policy

Effective Date:
10/18/2010

Cancellation Date:
10/18/2011

Simultaneous Independent Parallel Instrument Approaches [SIPIA] – Widely
SUBJ: Spaced Runways

- 1. Purpose of this Notice.** The purpose of this notice is to define requirements for widely spaced SIPIA operations to parallel runways (see Pilot/Controller Glossary definition) separated by not less than 4,300 ft using any combination of instrument landing system [ILS], area navigation (required navigation performance) [RNAV(RNP)], or area navigation (Global Positioning System) Localizer Performance with Vertical Guidance [RNAV(GPS) LPV] and/or lateral/vertical navigation [LNAV/VNAV] procedures.
- 2. Audience.** The primary audience for this notice is Department of Defense (DoD) and Federal Aviation Administration (FAA) designers of instrument procedures and designated third party designers. The secondary audience includes other Air Traffic Organization (ATO) Service Area offices and Flight Standards headquarters and regional office Divisions/Branches.
- 3. Where can I Find This Notice?** You can find this notice on the Flight Standards Information Management System (FSIMS) at <http://fsims.avs.faa.gov>. Industry, applicants, and other non-FAA persons can access this notice through FSIMS at <http://fsims.faa.gov>.
- 4. What this Notice cancels.** FAA Order 8260.3B, Volume 3, Appendix 2, Simultaneous ILS procedures.

Original Signed By
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John M. Allen
Director
Flight Standards Service

Appendix A. Simultaneous Independent Parallel Instrument Approaches [SIPIA] – Widely Spaced Runways

1. Overview. This notice defines requirements for widely spaced SIPIA operations to parallel runways (see Pilot/Controller Glossary definition) separated by not less than 4,300 ft using any combination of instrument landing system [ILS], area navigation (required navigation performance) [RNAV(RNP)], or area navigation (Global Positioning System) Localizer Performance with Vertical Guidance [RNAV(GPS) LPV] and/or lateral/vertical navigation [LNAV/VNAV] procedures. Other simultaneous parallel approach operations are addressed by applicable Air Traffic Control [ATC] directives.

Note: SIPIA operations require vertical guidance in the final approach, and are not authorized when a glidepath is not available to all participating aircraft (i.e., due to an equipment outage or when azimuth-only approach procedures are flown).

2. Radar monitoring/Instrument Approach Availability. SIPIA operations to runways spaced by 9,000 ft or less (9,200 ft where airport elevation is 5,000 ft MSL or higher) requires an approved ATC Radar/Final Monitor Aid [FMA] as defined in Order 7110.65, Air Traffic Control and Pilot/Controller Glossary. All SIPIA operations also require at least one of the following;

a. An ILS approach.

b. An RNAV(GPS) or RNAV(RNP) approach. Only procedures with LPV, LNAV/VNAV, or RNP minima with an annotation that use of GPS and Flight Director/Autopilot is required may be approved for SIPIA operations.

3. Runway Spacing. The required spacing between runways/procedure final approach courses [FACs] for dual/triple SIPIA operations is in accordance with Order 7110.65 paragraph 5-9-7 as established by FAA Flight Standards. Quadruple or more SIPIA operations are not covered by this directive and requires a site-specific Flight Standards Flight Systems Laboratory [AFS-450] safety analysis.

4. Approach Procedures. Instrument approach procedures used for SIPIA operations must comply with the applicable design standard(s), except as follows;

a. Fixes/Altitudes. When requested by ATC, define fixes outside of the precise final approach fix [PFAF] to identify additional altitudes/points in the initial or intermediate segment to facilitate separation prior to the SIPIA procedure (e.g., during turn on to final).

(1) Fixes marking additional altitudes must be vertically separated by not less than 1,000 ft from the corresponding altitudes of the adjacent SIPIA approaches (see figure 1). The altitudes specified may be greater than the minimum due to ATC requirements and/or airspace constraints.

(2) Determine fix locations for each altitude at a distance not less than the minimum required to accommodate the highest expected airport temperature. Use formula 1 and formula 2

to determine the high temperature vertical adjustment. Fix altitudes must be at or below the glidepath. Use formula 3 to determine the minimum horizontal distance from the landing threshold point [LTP].

**Formula 1. International Standard
Atmosphere [ISA] at Glidepath Intercept.**

$$ISA_{intercept} = 15 - ALT_{intercept} \times 0.00198$$

where $ALT_{intercept}$ = required intercept altitude

Formula 2. High Temperature Vertical Adjustment.

$$VERT_{adjust} = (ALT_{intercept} - (LTP_{elev} + (ALT_{intercept} - LTP_{elev}) \times ((273 + ISA_{intercept}) / (273 + TEMP_{high}))))$$

where $ALT_{intercept}$ = glidepath intercept altitude

LTP_{elev} = LTP MSL elevation

$TEMP_{high}$ = highest expected Celsius temperature at the airport

**Formula 3. Minimum Distance
Adjusted Glidepath Intercept.**

$$D_{min} = \frac{r \times \ln\left(\frac{r+z}{r+LTP_{elev}+TCH}\right)}{\tan\left(\theta \times \frac{\pi}{180}\right)}$$

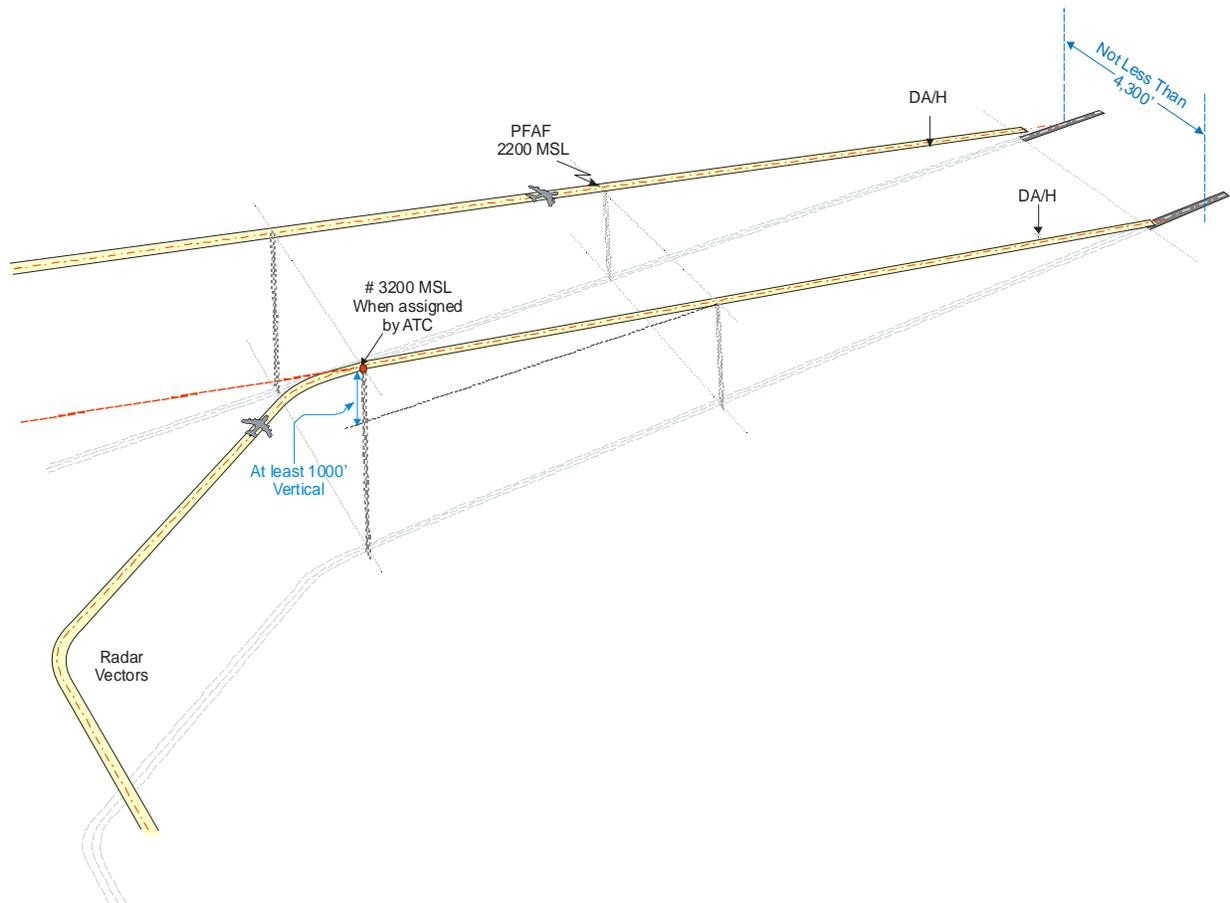
where $r = 20890537$

$z = ALT_{intercept} + VERT_{adjust}$

LTP_{elev} = LTP MSL elevation

TCH = TCH value

θ = glidepath angle

Figure 1. Example Fix Marking Additional Altitude.**b. Missed Approach Segment.**

(1) Dual SIPIA operations. Missed approach courses must have a combined divergence of at least 45 degrees.

(2) Triple SIPIA operations. The missed approach course for the center runway is a continuation of the FAC. The course for each 'outboard' runway must diverge at least 45 degrees from the center runway in opposite directions. At least one outside parallel shall have a turn height specified that is not greater than 500 ft above the touchdown zone elevation/threshold [TDZE/THLD] elevation for that runway.

(3) Missed approaches with radius-to-fix [RF] turns require AFS-400 approval.

(4) Quadruple SIPIA operations. Course divergence is as specified by AFS-450 safety analysis.

(5) Where an alternate missed approach has been established for an approach authorized for use during SIPIA operations, it must also comply with the preceding restrictions.

5. Chart notes.

a. Instrument approach procedures which meet the requirements for SIPIA must be annotated to identify the runways and/or procedures authorized for simultaneous operations. This information will be entered in the NOTES section. For example for runway 27L, when SIPIA is authorized for all ILS and/or RNAV procedures published to runway 27R, enter the following in the NOTES section: **“Chart note: Simultaneous approach authorized with RWY 27R.”** If there is more than one variation of a runway number, use a “/” between the variations and list them in the order of “L/C/R” as applicable, i.e., **“...with Rwy 27L/C.”** If there is more than one runway number, use the word “and” to separate them, i.e., **“...with Rwy 27L/C and Rwy 28C/R.”**

(1) Only vertically-guided procedures are eligible for SIPIA operations. When LOC, LP, or LNAV minima are published on the same chart, include the following in the NOTES section: **“Chart note: [LOC, LP, and/or LNAV] procedure NA during simultaneous operations.”** or **“Chart note: [LOC, LP, and/or LNAV] procedure to RWY[number] NA during simultaneous operations”** or **“Chart note: [LOC, LP, and/or LNAV] procedure to [Procedure name] RWY[number] NA during simultaneous operations.”**

(2) For RNAV(GPS) and RNAV(RNP) procedures used for SIPIA operations, enter the following in the NOTES section: **“Chart note: Use of FD or AP providing RNAV track guidance required during simultaneous operations.”**

6. No Transgression Zone (NTZ) and Normal Operating Zones (NOZ) are established by ATC for each adjacent runway pair used during SIPIA operations.

a. The NTZ is 2,000 ft wide equidistant between the approach courses for the runway pair. It begins prior to the farthest point where adjacent approaches first lose vertical separation and ends 0.5 NM past the farthest departure end of runway [DER] in the pair or where the missed approach tracks diverge, whichever occurs last (see figures 2 and 3).

Note: The NTZ dimensions are not affected by the point where ATC is permitted to discontinue radar monitoring.

b. The area remaining between the approach courses and the edge of the NTZ is the NOZ.

Figure 2. No Transgression and Normal Operating Zones (Dual Approach).

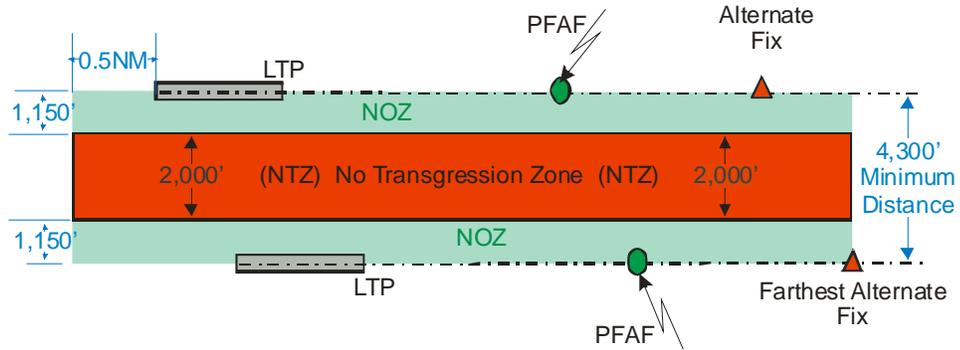
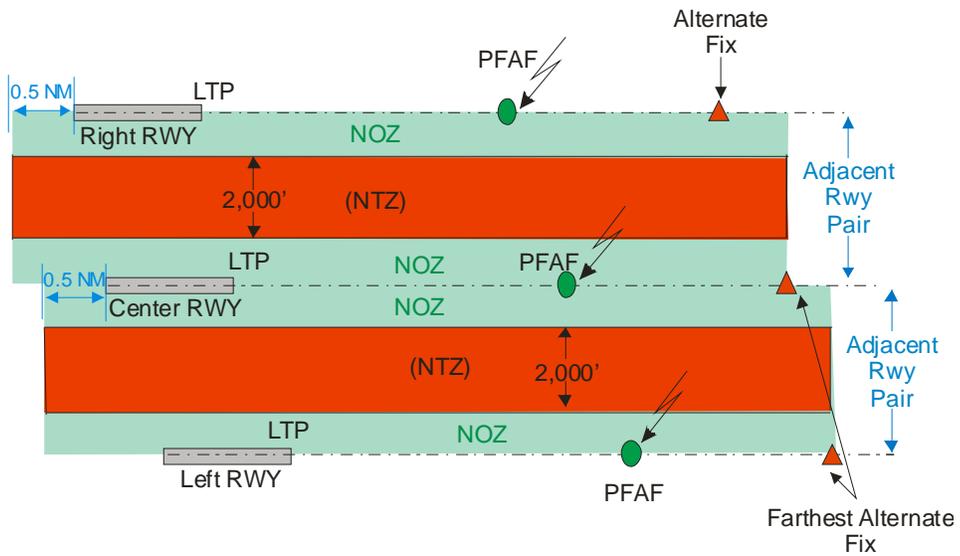


Figure 3. No Transgression and Normal Operating Zones (Triple Approach).



Appendix B. Administrative Information

1. Distribution. We will distribute this notice to the branch level in Offices of Airport Safety and Standards; Air Traffic Organization, and Flight Standards Services in Washington Headquarters, including AeroNav Services and the Regulatory Standards Divisions at the Mike Monroney Aeronautical Center; to branch level in the regional Flight Standards and Airports Divisions; and to all Flight Standards District Offices (FSDOs).

2. Related Publications.

- a. FAA Order 8260.3, United States Standard for Terminal Instrument Procedures.**
- b. FAA Order 7110.65, Air Traffic Control.**
- c. FAA Order 7210.3, Facility Operation and Administration.**
- d. FAA Aeronautical Information Manual.**
- e. FAA Pilot/Controller Glossary (P/CG).**