

CHANGE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

JO 7110.308
CHG 3

Effective Date:
October 30, 2012

SUBJ: 1.5-Nautical Mile Dependent Approaches to Parallel Runways Spaced Less Than
2,500 Feet Apart

- 1. Purpose of This Change.** The change to this order specifies revised leader/follower-specific runway pairs and approach geometries authorized for Newark Liberty International (EWR) and adds specific runway pairs for San Francisco International Airport (SFO).
- 2. Audience.** This order applies to the Terminal Services organization and all associated air traffic control facilities.
- 3. Where Can I Find This Change?** This change is available on the MyFAA employee Web site at https://employees.faa.gov/tools_resources/orders_notices/ and on the air traffic publications Web site at http://www.faa.gov/air_traffic/publications.
- 4. Distribution.** This order is distributed to the following Air Traffic Organization service units: En Route and Oceanic, Terminal, System Operations, and Mission Support; the Office of ATO Safety and Technical Training; NextGen and Operations Planning; the Air Traffic Safety Oversight Service; the William J. Hughes Technical Center; and the Mike Monroney Aeronautical Center.
- 5. Background.** FAA Order JO 7110.308, dated November 5, 2008, authorizes the use of 1.5-nautical mile dependent staggered approaches to be conducted at the General Edward Lawrence Logan International (BOS), Cleveland-Hopkins International (CLE), Philadelphia International (PHL), Seattle-Tacoma International (SEA), and Lambert-St. Louis International (STL) Airports. Newark Liberty International (EWR) and San Francisco International Airport (SFO) are implementing these approaches as well.
- 6. Disposition of Transmittal.** Retain this transmittal until superseded by a new basic order.
- 7. Page Control Chart.** See the page control chart attachment.



Elizabeth L. Ray
Vice President, Mission Support Services
Air Traffic Organization

9/24/2012
Date Signed

10/30/12

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PAGE CONTROL CHART

JO 7110.308

10/30/12

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CHANGE

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

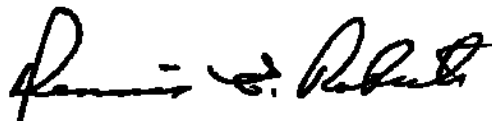
**JO 7110.308
CHG 2**


Air Traffic Organization Policy

Effective Date:
September 1, 2010

SUBJ: 1.5-Nautical Mile Dependent Approaches to Parallel Runways Spaced Less Than
2,500 Feet Apart

- 1. Purpose of This Change.** This order specifies specific runway pairs and approach geometries authorized and defines the necessary procedures. Paragraph 6d of this order defines the navigation aids necessary for authorized use of the procedure. Appendix A provides an updated list of authorized runway pairings for use of this procedure to include Newark Liberty International (EWR), Memphis International (MEM), and an additional runway pair at Seattle-Tacoma International (SEA) Airports.
- 2. Audience.** This order applies to the Terminal Services organization and all associated air traffic control facilities.
- 3. Where Can I Find This Change?** This change is available on the MyFAA employee Web site at https://employees.faa.gov/tools_resources/orders_notices/ and on the air traffic publications Web site at http://www.faa.gov/air_traffic/publications.
- 4. Explanation of Policy Change.** This change to closely spaced parallel runway (CSPR) procedures will eliminate the requirement for the lead aircraft to be established and/or cleared for the instrument approach before the trailing aircraft is established and/or cleared for the instrument approach.
- 5. Distribution.** This order is distributed to the following Air Traffic Organization service units: En Route and Oceanic, Terminal, Safety, NextGen and Operations Planning, and System Operations Services; the Air Traffic Safety Oversight Service; the William J. Hughes Technical Center; and the Mike Monroney Aeronautical Center.
- 6. Background.** FAA Order JO 7110.308, dated November 5, 2008, authorizes the use of 1.5-nautical mile dependent staggered approaches to be conducted at the General Edward Lawrence Logan International (BOS), Cleveland-Hopkins International (CLE), Philadelphia International (PHL), Seattle-Tacoma International (SEA), and Lambert-St. Louis International (STL) Airports.
- 7. Disposition of Transmittal.** Retain this transmittal until superseded by a new basic order.
- 8. Page Control Chart.** See the page control chart attachment.



 Nancy B. Kalinowski
Vice President, System Operations Services
Air Traffic Organization



Date Signed

09/01/10

JO 7110.308
CHG 2

PAGE CONTROL CHART

JO 7110.308

09/01/10

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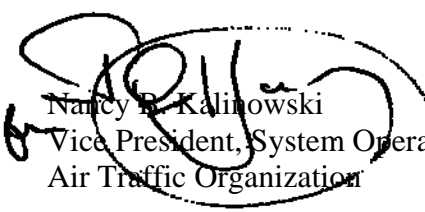
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

JO 7110.308
CHG 1

Effective Date:
January 6, 2010

SUBJ: 1.5-Nautical Mile Dependent Approaches to Parallel Runways Spaced Less Than
2,500 Feet Apart

- 1. Purpose of This Change.** This order specifies specific runway pairs and approach geometries authorized and defines the necessary procedures. Paragraph 6c of this order defines the procedures necessary to conduct the reduced separation approaches to the approved runway pairings for the five airports specified.
- 2. Audience.** This order applies to the Terminal Services organization and all associated air traffic control facilities.
- 3. Where Can I Find This Change?** This change is available on the MYFAA employee Web site at https://employees.faa.gov/tools_resources/orders_notices/ and on the air traffic publications Web site at http://www.faa.gov/air_traffic/publications.
- 4. Explanation of Policy Change.** This change to closely spaced parallel runway (CSPR) procedures will eliminate the requirement for the lead aircraft to be established and/or cleared for the instrument approach before the trailing aircraft is established and/or cleared for the instrument approach.
- 5. Distribution.** This order is distributed to the following Air Traffic Organization service units: En Route and Oceanic, Terminal, Safety, NextGen and Operations Planning, and System Operations Services; the Air Traffic Safety Oversight Service; the William J. Hughes Technical Center; and the Mike Monroney Aeronautical Center.
- 6. Background.** FAA Order JO 7110.308, dated November 5, 2008, authorizes the use of 1.5-nautical mile dependent staggered approaches to be conducted at the General Edward Lawrence Logan International (BOS), Cleveland-Hopkins International (CLE), Philadelphia International (PHL), Seattle-Tacoma International (SEA), and Lambert-St. Louis International (STL) Airports.
- 7. Disposition of Transmittal.** Retain this transmittal until superseded by a new basic order.
- 8. Page Control Chart.** See the page control chart attachment.


Nancy B. Kalinowski
Vice President, System Operations Services
Air Traffic Organization

1/6/10
Date Signed



**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

Air Traffic Organization Policy

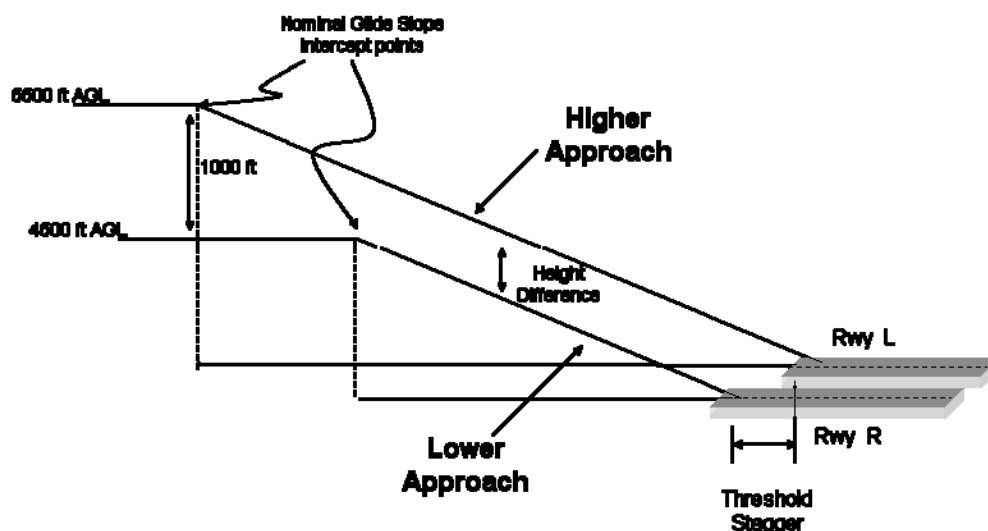
**ORDER
JO 7110.308**

Effective Date:
11/5/08

SUBJ: 1.5-Nautical Mile Dependent Approaches to Parallel Runways Spaced Less Than 2,500 Feet Apart

- 1. Purpose of This Order.** This order provides the criteria for Federal Aviation Administration Order (FAAO) 7110.65, Air Traffic Control, Paragraph 5-9-6, Parallel Dependent ILS/MLS Approaches, to conduct 1.5-nautical mile (NM) diagonal spaced approaches to parallel runways spaced less than 2,500 feet, also referred to as closely spaced parallel runways (CSPR), as well as guidance for requesting a specific assessment for an airport CSPR that does not meet the criteria provided by this order.
- 2. Audience.** This order applies to the Terminal Services organization and all associated air traffic control facilities.
- 3. Where Can I Find This Order?** This order is available on the MYFAA employee Web site at https://employees.faa.gov/tools_resources/orders_notices/.
- 4. Explanation of Policy Changes.** FAA Order JO 7110.65, paragraph 5-9-6, limits the use of parallel dependent instrument landing system (ILS)/microwave landing system (MLS) approaches to parallel runways whose centerlines are 2,500 feet or farther apart. This order allows the use of the parallel dependent instrument approaches for specific airport parallel runways whose centerline spacing is less than 2,500 feet.
- 5. Action.** At airports with runways that are authorized by this order to conduct 1.5-NM dependent ILS approaches, the air traffic facility manager must brief and train his or her personnel in the use of the procedure defined by this order and develop facility standard operating procedures for the use of the reduced separation minimums authorized by this order. Air traffic facility managers desiring to add their airports and associated CSPR to this order must follow the process described in Paragraph 6b2, Request for a Specific Airport Analysis.
- 6. Procedures.**
 - a. Airport Criteria Allowing Conduct of Dependent ILS Approaches on CSPR.** Appendix A, Authorized Runway Pairings, presents the runway configurations for which reduced separation is permitted under this order. A common reference point of 7 NM from the lead aircraft runway threshold is used to present glide slope height differences that provide wake encounter mitigation for the authorized procedure at each airport. Glide slope height differences may either be accomplished by threshold stagger or small glide slope angle differences (or both), thus yielding a higher and lower approach. (See FIG 1.)

FIG 1
Side View of Example CSPR Approach



b. Request for a Specific Airport Analysis. Written requests for analysis of specific airport geometries must be made to the Air Traffic Organization (ATO) Terminal Safety and Operations Support office through the managing service area for the requesting facility. The request will be addressed through the following process:

(1) The airport facility will provide a written request to the managing service area for an analysis to be conducted. The request will include:

- (a) The runway pair and types of instrument approaches to be considered.
- (b) The centerline separation between the runway pair.
- (c) The latitude and longitude of the landing threshold of each runway.

(d) Charted missed approach procedures for lost communications for ILS approach to each runway (new or existing runways).

(2) The service area will evaluate the request and forward it to Terminal Safety and Operations Support if the request is valid.

(3) Terminal Safety and Operations Support will request a wake encounter risk assessment from ATO System Operations Services.

(4) Terminal Safety and Operations Support will coordinate, for approval, the wake encounter risk assessment with ATO Safety Services and the Air Traffic Safety Oversight Service and amend Appendix F, Safety Analysis for CSPR Instrument Approach Procedure, of the national rule change safety risk management document (SRMD).

(5) Terminal Safety and Operations Support will approve the risk assessment and amended SRMD (leading to steps 6 and 7 below) or communicate disapproval with proposed mitigations to the managing service area (leading to step 8 below).

(6) The approval will be coordinated through ATO Safety Services, Terminal Safety and Operations Support, the managing service area, and to the requesting facility.

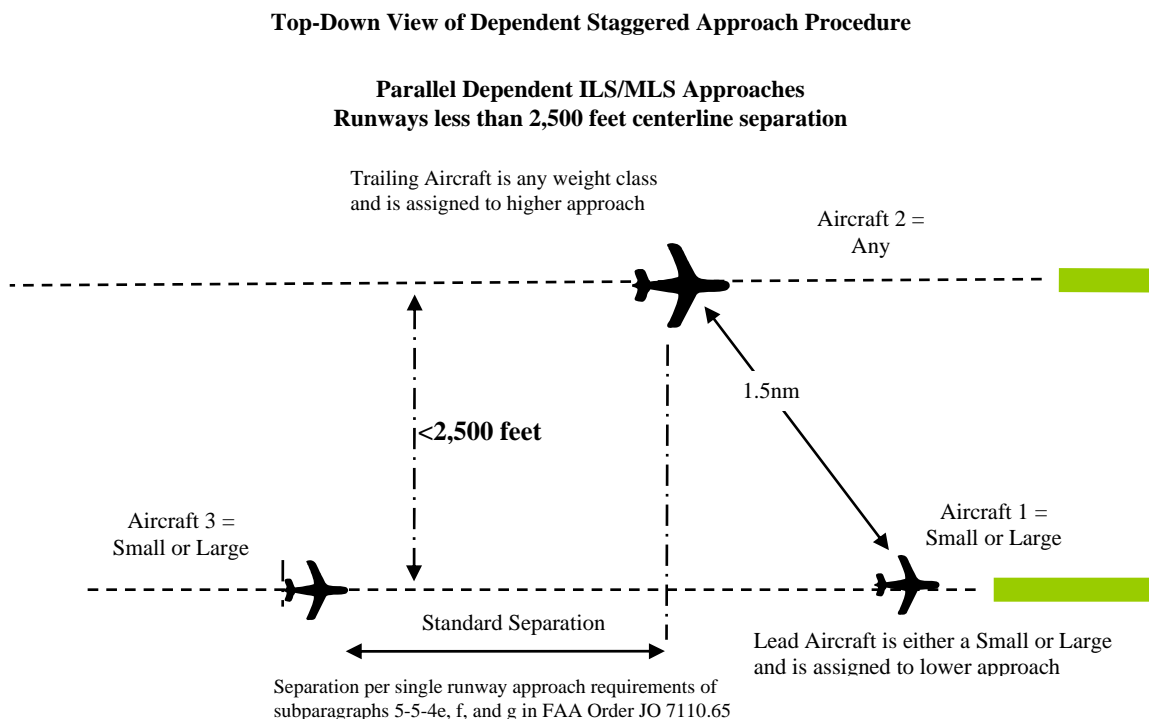
(7) The approval will be implemented by the requesting facility and implementation contingent on the provisions in this order.

(8) Disapprovals with proposed mitigations will be coordinated through ATO Safety Services, to Terminal Safety and Operations Support and System Operations Services, to the managing service area, and to the requesting facility for further consideration.

c. Procedures for Dependent Approaches to CSPRs.

(1) Figure 2 provides a graphical depiction of the definitions provided in paragraph 9 of this order. The lead aircraft is aircraft #1 and is assigned to the lower approach. The trailing aircraft is aircraft #2. The lead aircraft in the next pair of reduced separation is aircraft #3.

FIG 2



(2) Conditions for Use. Parallel dependent ILS approaches can be conducted at the airport/runway combinations listed in appendix A under the following conditions:

- (a) Provide a minimum of 1,000 feet vertical or a minimum of 3 miles radar separation between aircraft until established on the localizer and cleared for the approach.
- (b) The lead aircraft of the dependent separation pair is a small or large aircraft and must be assigned the lower (lead in TBL-A-1) approach and must be established on the localizer.
- (c) Any aircraft type may participate as the trailing aircraft in the dependent pair.
- (d) The trailing aircraft of the dependent separation pair must be assigned the higher (trail in TBL-A-1) approach and must be established on the localizer.
- (e) The lead and trailing aircraft will be cleared for the approach before the loss of standard separation.
- (f) Provide a minimum of 1.5 miles radar separation diagonally with pairs of lead/trailing aircraft.
- (g) Provide standard separation between the trailing aircraft of one pair and the leader of the next pair based on FAA Order JO 7110.65, section 5, subparagraphs 5-5-4e and 5-5-4f.

(h) Reduced separation is not permitted if either of the aircraft in a reduced separation pair is conducting a non-precision approach.

(i) If the lead aircraft executes a missed approach and is larger than the trailing aircraft in the pair, the trailing aircraft will be instructed to execute a missed approach.

d. Navigational Aids. The 1.5-NM diagonal dependent approaches authorized by this order may be conducted using ILS Category I (CAT I). Localizer and glide slope must be in service to both approaches.

e. Radar Surveillance. Terminal approach radar services apply.

f. Weather Minimums. The 1.5-NM diagonal dependent approaches authorized by this order may be conducted down to and including CAT I weather conditions.

g. Charting. Charting for ILS approaches with modified glide slope angles will be published after flight checking and before the implementation of ILS procedures authorized by this order.

7. Distribution. This order is distributed to the following ATO service units: Terminal, En Route and Oceanic, System Operations Services, and NextGen and Operations Planning; the ATO Office of Safety; Office of the Service Center; the Air Traffic Safety Oversight Service; the William J. Hughes Technical Center; and the Mike Monroney Aeronautical Center.

8. Background. Increased airport capacity and reduced arrival delays, under instrument meteorological conditions down to and including CAT I, can be achieved by using 1.5-NM diagonal separation within successive pairs of arrivals to CSPRs. This type of dependent instrument approach can be conducted for airports with specific centerline separations and threshold staggers. The lead aircraft of the dependent pair is restricted to being small or large aircraft weight type and is cleared to the lower approach. The geometry of the approach, with small or large aircraft leading on the lower approach, as well as the lateral separation between the two approaches, provide wake turbulence avoidance necessary for this reduced separation dependent approach operation.

Lateral separation between the two approaches contributes to wake avoidance. In addition, a small glide path height difference may be necessary, especially at distances of 7 or more nautical miles from touchdown, to ensure the trailing aircraft is at or above the height of the leading aircraft in the reduced separation pair. The required glide path height can be achieved through displaced landing thresholds or through small glide path angle differences that are permitted within the constraints of precision approaches.

9. Definitions. For the purpose of this order, the following definitions are provided.

a. Lead Aircraft – The lead aircraft in the pair of reduced separation aircraft, authorized by this order. The lead aircraft is restricted to be a small or large aircraft weight type as defined in FAAO 7110.65, Appendix A, Aircraft Information Fixed-Wing Aircraft.

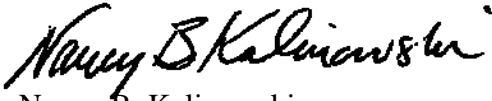
b. Lead Approach – The approach assigned to the lead aircraft in a reduced separation pair. For each CSPR pair identified in appendix A of this order, the lead approach is listed first and is typically the lower approach.

c. Higher Approach – The higher approach is the approach to the runway with the staggered landing threshold. (See FIG 1.)

d. Lower Approach – The lower approach is the approach to the runway with the nonstaggered landing threshold. (See FIG 1.)

e. Trailing Aircraft – The trailing aircraft in the pair of reduced separation aircraft, authorized by this order, and is not restricted by weight class.

f. Trailing Approach – The approach assigned to the trailing aircraft in a reduced separation pair. For each CSPR pair identified in appendix A, the trailing approach is listed second and is typically the higher approach.



Nancy B. Kalinowski
Vice President, System Operations Services
Air Traffic Organization

11-5-08

Date Signed

Appendix A. Authorized Runway Pairing

TBL-A-1

Specific Airports/Runway Geometries Approved
for 1.5 NM Diagonal Dependent Approaches

Airport	CSPR Pair (Lead/Trail)	Centerline Separation (in feet)	Glide Path Height Difference (7NM from lead a/c threshold)	Runway (Lead/Trail)	Navigation Type	Glide Slope Angle (degrees)
BOS	4R/4L	1500	128 ft	4R (lead)	ILS	3.0
				4L (trail)	ILS	3.1
CLE	6L/6R	1241	193 ft	6L (lead)	ILS	3.0
				6R (trail)	ILS	3.1
	24L/24R	1241	63 ft	24L (lead)	ILS	3.0
				24R (trail)	ILS	3.0
EWR	4L/4R	950	74 ft	4R (lead)	ILS	2.95
				4L (trail)	ILS	3.1
	22R/22L	950	74ft	22L (lead)	ILS	3.0
				22R (trail)	ILS	3.1
MEM	18C/18L	927	185 ft	18C (lead)	ILS	3.0
				18L (trail)	ILS	3.1
	36R/36C	927	74 ft	36R (lead)	ILS	3.0
				36C (trail)	ILS	3.1
PHL	9R/9L	1400	316 ft	9R (lead)	ILS	3.0
				9L (trail)	ILS	3.0
	27R/27L	1400	263 ft	27R (lead)	ILS	3.0
				27L (trail)	ILS	3.0
SEA	34C/34L	1700	49 ft	34C (lead)	ILS	3.0
				34L (trail)	ILS	3.0
	16C/16R	1700	0 ft	16C (lead)	ILS	3.0
				16R (trail)	ILS	3.0
	16L/16C	800	0 ft	16L (lead)	ILS	3.0
				16C (trail)	ILS	3.0
	34R/34C	800	130 ft	34R (lead)	ILS	2.75*
				34C (trail)	ILS	3.0
SFO	28L/28R	750	111 ft	28L (lead)	ILS	2.85
				28R (trail)	ILS	3.0
STL	30R/30L	1300	89 ft	30R (lead)	ILS	3.0
				30L (lead)	ILS	3.0
	12R/12L	1300	159 ft	12R (lead)	ILS	3.0
				12L (trail)	ILS	3.0

NOTE-

For those runway pairs which require a 3.1 degree glide slope to the trailing approach, this procedure is not to be conducted until the 3.1 degree approach is established.

*SEA 34R currently has a 2.75 degree glide slope. The risk analysis was conducted using a 3 degree glide slope and the procedure is authorized on SEA 34R at 2.75 and up to a 3.0 degree glide slope