



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

**ORDER  
7110.659A**

Effective Date:  
June 1, 2014

**SUBJ:** Wake Turbulence Recategorization

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**1. Purpose of This Order.** This order provides procedural guidance to FAA Order 7110.65, Air Traffic Control, the Pilot/Controller Glossary, and FAA Order 7210.3, Facility Operation and Administration, related to the implementation and use of Wake Turbulence Recategorization (Recat) procedures and separation minima.

**2. Audience.** This order applies to all air traffic personnel at facilities authorized to use Recat for operational air traffic control services.

**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/](https://employees.faa.gov/tools_resources/orders_notices/) and on the air traffic publications Web site at [http://www.faa.gov/air\\_traffic/publications/](http://www.faa.gov/air_traffic/publications/).

**4. Cancellation.** This order cancels the following notices: N JO 7110.608, N JO 7110.636, N JO 7110.637, N JO 7110.642, and N JO 7110.643.

**7. Requirements.**

**a.** At facilities authorized to use Recat for air traffic control services, the applicable provisions of FAA Order 7110.65, Air Traffic Control, are superseded by the corresponding provisions contained in Appendix A of this order.

**b.** Facilities must receive a Letter of Authorization from the Director, Air Traffic Procedures, AJV-8, prior to the implementation of Recat procedures.

**c.** All operational personnel must receive training on Recat procedures prior to implementation.

**d.** Terminal Automation Systems must have the Wake Turbulence Recategorization functions activated.

**e.** Tower facilities must be equipped with an Electronic Flight Strip Transfer System (EFSTS) or an equivalent electronic flight progress strip system, or develop manual procedures to indicate the wake category on flight progress strips.

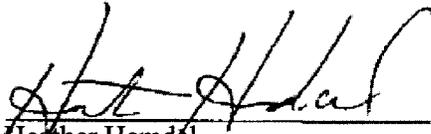
**f.** Facility documents must be updated as appropriate to reflect Recat procedures.

**g.** The Wake Turbulence Program Office must notify AOV-120 of facilities authorized to use Recat procedures and separation minima.

**8. Background.** Currently, the U.S. classifies aircraft for wake turbulence purposes based on maximum certificated takeoff weight, resulting in three weight classes of heavy, large, and small. This results in greater than necessary separation distances, especially within the heavy weight class. For example, the current heavy-behind-heavy separation is four miles. This separation is appropriate for a B767 following a B747, but not necessary when the B747 is following the B767.

Under the Recat program, aircraft are classified according to wingspan and the aircraft's ability to withstand a wake encounter, as well as the certificated takeoff weight. This method results in six categories of aircraft for wake turbulence separation purposes. The categories separate the current heavy and large weight classes into four wake categories; two for heavy, and two for large. The A388 and A225 become their own wake category, and the current weight class of small remains as its own wake category. Increased airport capacity with reduced arrival and departure delays can be achieved by using the procedures and separation minima developed for Wake Turbulence Recategorization.

**9. Safety Management System.** Appropriate safety management documentation, in accordance with FAA Order 1100.161, Air Traffic Safety Oversight, ATO Order 100.37, Air Traffic Organization Safety Management System, and the ATO Safety Management System Manual, has been completed in support of the notice that preceded this order. Therefore, no further SRM analysis is required.



Heather Hemdál

Director, Air Traffic Procedures

**APPENDIX A****FAA Order 7110.65****2-1-19. WAKE TURBULENCE**

a. Apply wake turbulence procedures to aircraft operating behind category A, B, and C aircraft, and, where indicated, to category F aircraft behind category D and E aircraft.

**NOTE-**

*Para 5-5-4, Minima, specifies increased radar separation for category F aircraft landing behind category A, B, C, D, and E aircraft because of the possible effects of wake turbulence.*

No further changes to paragraph

**2-1-20. WAKE TURBULENCE CAUTIONARY ADVISORIES**

a. Issue wake turbulence cautionary advisories including the position, altitude if known, and direction of flight to aircraft operating behind category A, B, and C aircraft, and to category E and F aircraft operating behind category D aircraft when:

**REFERENCE-**

*AC 90-23, Aircraft Wake Turbulence, Pilot Responsibility, Para 11.*

1. **TERMINAL.** VFR aircraft that are not being radar vectored are behind category A, B, C, or D aircraft.

2. IFR aircraft accept a visual approach or visual separation.

**REFERENCE-**

*FAAO JO 7110.65, Para 7-4-1, Visual Approach.*

3. **TERMINAL.** VFR arriving aircraft have previously been radar vectored and the vectoring has been discontinued.

b. Issue cautionary information to any aircraft if in your opinion, wake turbulence may have an adverse effect on it. When traffic is known to be a category A aircraft, include the word *Super* in the description. When traffic is known to be a category B or C aircraft, include the word *Heavy* in the description.

Note, no change

**REFERENCE -**

*AC 90-23, Aircraft Wake Turbulence  
P/CG Term - Aircraft Wake Categories  
P/CG Term - Wake Turbulence*

No further changes to paragraph

**2-2-6. IFR FLIGHT PROGRESS DATA**

Title through a1, no change

2. Number of aircraft if more than one, wake category indicator (heavy aircraft indicator "H" if appropriate), type of aircraft, and aircraft equipment suffix.

No further changes to paragraph

## APPENDIX A

### 2-3-4. TERMINAL DATA ENTRIES

Title through Table 2-3-3, block 2a, no change

Table 2-3-3, block 3 - Number of aircraft if more than one, wake category indicator, type of aircraft, and aircraft equipment suffix.

Table 2-3-3, block 4 through table 2-3-4, block 2a, no change

Table 2-3-4, block 3 - Number of aircraft if more than one, wake category indicator, type of aircraft, and aircraft equipment suffix.

Table 2-3-4, block 4 through table 2-3-5, block 2a, no change

Table 2-3-5, block 3 – Number of aircraft if more than one, wake category indicator, type of aircraft, and aircraft equipment suffix.

No further changes to paragraph

### 2-4-14. WORDS AND PHRASES

Title through a, no change

- b. The word *Super* must be used as part of the identification of category A aircraft.
- c. The word *Heavy* must be used as part of the identification of category B or C aircraft.
- d. *EN ROUTE*. The use of the words *super* or *heavy* may be omitted except as follows:
  - 1. In communications with a terminal facility about super or heavy jet operations.
  - 2. In communications with or about super or heavy jet aircraft with regard to an airport where the en route center is providing approach control service.
  - 3. In communications with or about heavy jet aircraft when the separation from a following aircraft may become less than 5 miles by approved procedure.
  - 4. When issuing traffic advisories.

#### **EXAMPLE–**

*“United Fifty–Eight Heavy.”*

#### **NOTE–**

*Most airlines will use the word “super” or “heavy” following the company prefix and flight number when establishing communications or when changing frequencies within a terminal facility’s area.*

- e. When in radio communications with “Air Force One” or “Air Force Two,” do not add the heavy designator to the call sign. State only the call sign “Air Force One/Two” regardless of the type aircraft.

### 2-4-21. DESCRIPTION OF AIRCRAFT TYPES

Except for wake category A, B, or C aircraft, describe aircraft as follows when issuing traffic information.

a through c2 example, no change

- d. When issuing traffic information to aircraft following a wake category A aircraft, specify the word *Super* before the manufacturer's name and model.

**APPENDIX A****EXAMPLE-**

*“Super A-three-eighty”*

e. When issuing traffic information to aircraft following a Wake category B, or C aircraft, specify the word *Heavy* before the manufacturer's name and model.

No further changes to paragraph

**3-3-5. BRAKING ACTION ADVISORIES**

Title through b, no change

1. Issue the latest braking action report for the runway in use to each arriving and departing aircraft early enough to be of benefit to the pilot. When possible, include reports from wake category A, B, or C aircraft when the arriving or departing aircraft is a wake category A, B, or C aircraft.

No further changes to paragraph

**3-7-3. GROUND OPERATIONS**

Title to a, no change

- a. Category A, B, or C aircraft to use greater than normal taxiing power.
- b. Category F aircraft or helicopters to taxi in close proximity to taxiing or hover-taxi helicopters.

No further changes to paragraph

**3-9-6. SAME RUNWAY SEPARATION**

Title through WAKE TURBULENCE APPLICATION, no change

c. Do not issue clearances which imply or indicate approval of rolling takeoffs by Category A, B, or C aircraft except as provided in para 3-1-14, Ground Operations When Volcanic Ash is Present.

d. Do not issue clearances to Category F aircraft to line up and wait on the same runway behind a departing Category A, B, or C aircraft to apply the necessary intervals.

d Reference, no change

e. The minima in para 5-5-4, Minima, TBL 5-5-1, may be applied in lieu of the time interval requirement in subpara f. When para 5-5-4, TBL 5-5-1, is applied, ensure that the appropriate radar separation exists at or prior to the time an aircraft becomes airborne when wake turbulence separation is required.

**NOTE -**

*The pilot may request additional separation, but should make this request before taxiing on the runway.*

f. Separate IFR/VFR aircraft taking off when departing the same runway or a parallel runway separated by less than 2,500 feet:

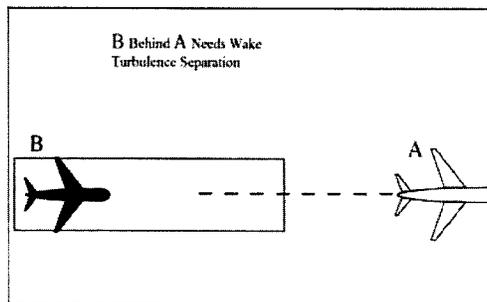
**NOTE -**

*Takeoff clearance to the following aircraft should not be issued until the time interval has passed after the preceding aircraft begins takeoff roll.*

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1. Behind a category A aircraft:
  - (a) Category B, C, D, and E – *3 minutes*.
  - (b) Category F – *4 minutes*.
2. Behind a category B aircraft:
  - (a) Category B, C, D, and E – *2 minutes*.
  - (b) Category F – *3½ minutes*.
3. Behind a category C aircraft:
  - (a) Category D and E – *2 minutes*.
  - (b) Category F – *3 minutes*.
4. Category F behind category D – *2 minutes*.

**FIG 3-9-4**  
**Same Runway Separation**



g. Separate aircraft when operating on a runway with a displaced landing threshold if projected flight paths will cross when either a departure follows an arrival or an arrival follows a departure:

1. Behind a category A aircraft:
  - (a) Category B, C, D, and E – *3 minutes*.
  - (b) Category F – *4 minutes*.
2. Behind a category B aircraft:
  - (a) Category B, C, D, and E – *2 minutes*.
  - (b) Category F – *3½ minutes*.
3. Behind a category C aircraft:
  - (a) Category D and E – *2 minutes*.
  - (b) Category F – *3 minutes*.
4. Category F aircraft behind category D – *2 minutes*.

h. Do not approve pilot requests to deviate from the required time interval if the preceding aircraft requires wake turbulence separation.

i. Separate a category F aircraft behind a category E aircraft that has departed or made a low/missed approach when utilizing opposite direction takeoffs on the same runway by *3 minutes* unless a pilot

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has initiated a request to deviate from the 3 - minute interval. In the latter case, issue a wake turbulence cautionary advisory before clearing the aircraft for takeoff. Controllers must not initiate or suggest a waiver of the 3 - minute rule.

**NOTE –**

*A request for takeoff does not initiate a waiver request from the required time interval. The request must be accompanied by the explicit time interval requesting to be waived.*

## i Reference, no change

**j.** Separate aircraft behind a another aircraft that has departed or made a low/missed approach when utilizing opposite direction takeoffs or landings on the same or parallel runways separated by less than 2,500 feet by the following minima:

## 1. Behind a category A aircraft:

- (a) Category B, C, D, and E – *4 minutes.*
- (b) Category F – *5 minutes.*

## 2. Behind a category B aircraft:

- (a) Category B, C, D, and E – *3 minutes.*
- (b) Category F – *4½ minutes.*

## 3. Behind a category C aircraft:

- (a) Category D and E – *3 minutes*
- (b) Category F – *4 minutes*

4. Category F behind category D – *3 minutes.*

**k.** Inform an aircraft when it is necessary to hold in order to provide the required time interval.

No further changes to paragraph.

**3-9-7. WAKE TURBULENCE SEPARATION FOR INTERSECTION DEPARTURES**

**a.** Apply the following wake turbulence criteria for intersection departures:

**1.** Separate a category F aircraft taking off from an intersection on the same runway (same or opposite direction takeoff) behind a preceding departing category E aircraft by ensuring that the category F aircraft does not start takeoff roll until at least *3 minutes* after the category E aircraft has taken off.

**2.** Separate aircraft departing from an intersection on the same runway (same or opposite direction takeoff), parallel runways separated by less than 2,500 feet, and parallel runways separated by less than 2,500 feet with the runway thresholds offset by 500 feet or more, by ensuring that the aircraft does not start take-off roll until the following interval exists:

**(a).** Behind a category A aircraft:

- (1)** Category B, C, D, and E – *4 minutes.*
- (2)** Category F – *5 minutes.*

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- (b). Behind a category B aircraft:
  - (1) Category B, C, D, and E – 3 *minutes*.
  - (2) Category F – 4½ *minutes*.
- (c). Behind a category C aircraft:
  - (1) Category D and E – 3 *minutes*.
  - (2) Category F – 4 *minutes*.
- (d) Category F aircraft behind a category D – 3 *minutes*.

Note, no change

3. Separate a category F aircraft weighing 12,500 lbs. or less taking off from an intersection on the same runway (same or opposite direction takeoff) behind a preceding category F aircraft weighing more than 12,500 lbs. by ensuring the following category F aircraft does not start takeoff roll until at least 3 *minutes* after the preceding aircraft has taken off.

- 4. Inform an aircraft when it is necessary to hold in order to provide the required time interval.

Phraseology through Reference, no change.

- b. The time interval is not required when:

1. A pilot has initiated a request to deviate from the required time interval except when the preceding aircraft is a Category A or B, or a Category D, E, or F is behind a Category C aircraft, or a Category F is behind a Category D aircraft.

**NOTE –**

*A request for takeoff does not initiate a waiver request; the request for takeoff must be accomplished by a request to deviate from the specific time interval.*

b2, No change

3. Successive touch-and-go and stop-and-go operations are conducted with a category F aircraft following another category F aircraft weighing more than 12,500 lbs. or a category D or E aircraft in the pattern, or a category F aircraft weighing more than 12,500 lbs. or a category D aircraft departing the same runway, provided the pilot of the category F aircraft is maintaining visual separation/spacing behind the preceding aircraft. Issue a wake turbulence cautionary advisory and the position of the preceding aircraft.

Example, no change.

4. Successive touch-and-go or stop-and-go operations are conducted with any aircraft following a Category B or C aircraft in the pattern, or a Category B or C aircraft departing the same runway, provided the pilot of the aircraft is maintaining visual separation/spacing behind the preceding Category B or C aircraft. Issue a wake turbulence cautionary advisory and the position of the Category B or C aircraft.

**NOTE –**

*Not authorized with a Category A aircraft as the lead aircraft.*

Example, no change

5. If action is initiated to reduce the separation between successive touch-and-go or stop-and-go operations, apply the appropriate separation contained in subpara a2.

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c thru c2, no change.

3. Issue a clearance to permit the trailing aircraft to deviate from course enough to avoid the flight path of the preceding aircraft when applying subpara b1 or b2.

No further changes to paragraph.

**3-9-8. INTERSECTING RUNWAY SEPARATION**

Title through WAKE TURBULENCE APPLICATION, no change.

3. Separate IFR/VFR aircraft taking off behind a landing or departing aircraft on an intersecting runway if flight paths will cross (see FIG 3-9-7 and 3-9-8), or an aircraft departing a parallel runway separated by 2,500 feet or more if projected flight paths will cross (See FIG 3-9-9):

- (a) Behind a category A aircraft:
  - (1) Category B, C, D, and E – 3 minutes.
  - (2) Category F – 4 minutes.
- (b) Behind a category B aircraft:
  - (1) Category B, C, D, and E – 2 minutes.
  - (2) Category F - 3½ minutes.
- (c) Behind a category C aircraft:
  - (1) Category D and E – 2 minutes.
  - (2) Category F – 3 minutes.
- (d) Category F aircraft behind a category D – 2 minutes.

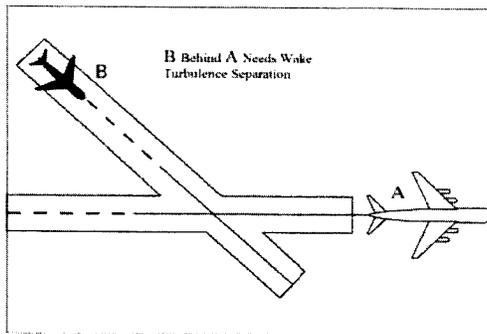
**NOTE-**

Takeoff clearance to the following aircraft should not be issued until the appropriate time interval has passed from when the preceding aircraft began takeoff roll.

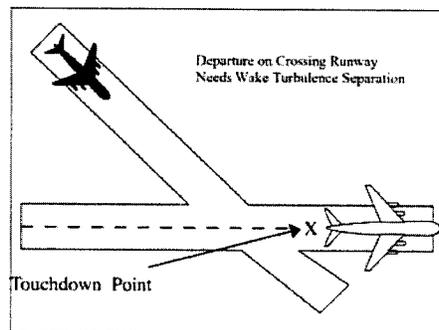
**FIG 3-9-7**

**Departure Behind Departure on Intersecting Runway**

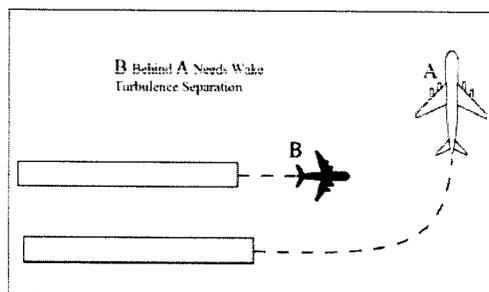
**APPENDIX A**



**FIG 3-9-8**  
**Departure Behind Arrival on Intersecting Runway**



**FIG 3-9-9**  
**Parallel Runway**



4. Pilot requests to deviate from the required time intervals must not be approved when wake turbulence separation is required.

No further changes to paragraph.

**3-9-9. NONINTERSECTING CONVERGING RUNWAY OPERATIONS**

Title thru Wake Turbulence Application, no change

b. Separate IFR/VFR aircraft taking off behind a landing or departing aircraft on a crossing runway if projected flight paths will cross (See FIG 3-9-13 and FIG 3-9-14):

**NOTE-**

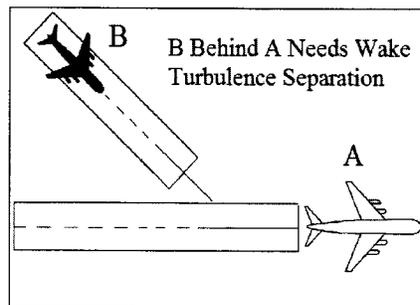
*Takeoff clearance to the following aircraft should not be issued until the appropriate time interval has passed from when the preceding aircraft began takeoff roll.*

1. Behind a category A aircraft:

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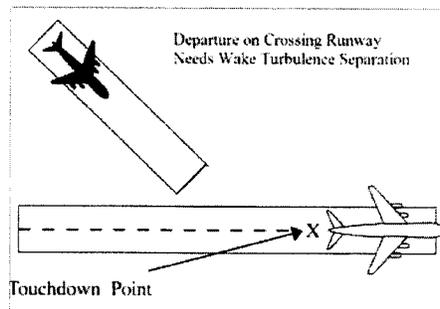
- (a) Category B, C, D, and E – 3 minutes.
  - (b) Category F – 4 minutes.
2. Behind a category B aircraft:
    - (a) Category B, C, D, and E – 2 minutes.
    - (b) Category F - 3½ minutes.
  3. Behind a category C aircraft:
    - (a) Category D and E – 2 minutes.
    - (b) Category F – 3 minutes.
  4. Category F aircraft behind a category D – 2 minutes.

**FIG 3-9-13**  
**Intersecting Runway Separation**



Subparagraph c, delete; renumber d to c

**FIG 3-9-14**  
**Intersecting Runway Separation**



c. Pilot requests to deviate from the required time intervals must not be approved when wake turbulence separation is required.

No further changes to paragraph

### 3-10-3 SAME RUNWAY SEPARATION

Title through b, no change.

1. The category A, B, or C aircraft to all aircraft landing behind a departing/arriving category A, B, or C aircraft on the same or parallel runways separated by less than 2,500 feet.

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2. The category D aircraft to a category E or F aircraft landing behind a departing or arriving category D aircraft on the same or parallel runways separated by less than 2,500 feet.

3. The category E aircraft to a category F aircraft landing behind a departing or arriving category E aircraft on the same or parallel runways separated by less than 2,500 feet.

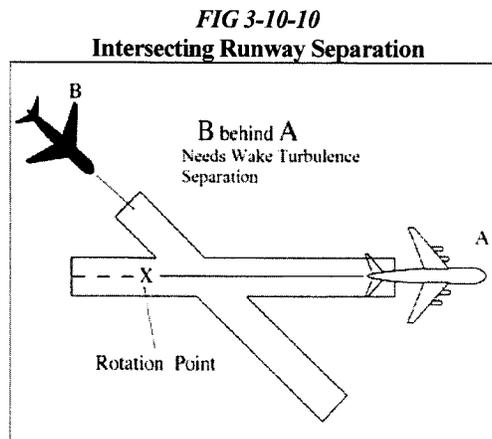
No further changes to paragraph.

### 3-10-4. INTERSECTING RUNWAY SEPARATION

Title through WAKE TURBULENCE APPLICATION, no change.

c. Separate IFR/VFR aircraft landing behind a departing aircraft on a crossing runway if the arrival will fly through the airborne path of the departure by the appropriate radar separation or the following interval: (See FIG 3-10-10):

1. Behind a category A aircraft:
  - (a) Category B, C, D, and E – 3 minutes.
  - (b) Category F – 4 minutes.
2. Behind a category B aircraft:
  - (a) Category B, C, D, and E – 2 minutes.
  - (b) Category F – 3½ minutes.
3. Behind a category C aircraft:
  - (a) Category D and E – 2 minutes.
  - (b) Category F – 3 minutes.
4. Category F aircraft behind a category D – 2 minutes.



d. Issue wake turbulence cautionary advisories including the position, altitude if known, and direction of flight to aircraft operating behind category A, B, and C aircraft, to category E and F aircraft operating behind category D aircraft, and to category F aircraft operating behind category E aircraft when:

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1. IFR/VFR aircraft are landing on a crossing runway behind a departing category A, B, C, D, or E aircraft; if the arrival flight path will cross the takeoff path behind the category A, B, C, D, or E aircraft and behind the category A, B, C, D, or E aircraft rotation point. (See FIG 3-10-11)

FIG 3-10-11 through Example, no change.

2. VFR aircraft landing on a crossing runway behind an arriving category A, B, C, D, or E aircraft if the arrival flight path will cross. (See FIG 3-10-12.)

No further changes to paragraph.

### 3-10-10. ALTITUDE RESTRICTED LOW APPROACH

Title to Note 1, no change

**NOTE –**

1. *The 500 feet restriction is a minimum. Higher altitudes should be used when warranted. For example, 1,000 feet is more appropriate for category A, B, or C aircraft operating over unprotected personnel or category F aircraft on or near the runway*

No further changes to paragraph.

### 3-11-1. TAXI AND GROUND MOVEMENT OPERATION

Title through Wake Turbulence Application, no change.

d. Avoid clearances which require category F aircraft or helicopters to taxi in close proximity to taxiing or hover-taxi helicopters.

No further changes to paragraph.

### 4-8-11. PRACTICE APPROACHES

Title through a.1.(b), no change

2. Where procedures require application of IFR separation to VFR aircraft practicing instrument approaches, standard IFR separation in accordance with Chapter 3, Chapter 4, Chapter 5, Chapter 6, and Chapter 7 must be provided. Controller responsibility for separation begins at the point where the approach clearance becomes effective. Except for wake category A, B, C, or D aircraft, 500 feet vertical separation may be applied between VFR aircraft and between a VFR and an IFR aircraft.

No further changes to paragraph.

### 5-5-4. MINIMA

Title through a.4, no change

**NOTE-**

*Wake turbulence procedures specify increased separation minima for certain categories of aircraft because of the possible effects of wake turbulence.*

b. through WAKE TURBULENCE SEPARATION, no change.

f. Separate aircraft operating directly behind and/or less than 1,000 feet below in accordance with the minima specified in Table 5-5-1.

Note 1 and 2, no change.

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**TBL 5-5-1**

**Wake Turbulence Separation Table for Directly Behind**

		Follower					
		A	B	C	D	E	F
Leader	A	.	5 NM	6 NM	7 NM	7 NM	8 NM
	B	.	3 NM	4 NM	5 NM	5 NM	5 NM
	C	.	.	.	3.5 NM	3.5 NM	5 NM
	D	.	.	.	.	.	5 NM
	E	.	.	.	.	.	.
	F	.	.	.	.	.	.

**WAKE TURBULENCE APPLICATION**

**g. ON APPROACH.** In addition to subpara e, separate an aircraft on approach behind another aircraft to the same runway by ensuring the wake separation minima in *table 5-5-2* will exist at the time the trailing aircraft is within 5 NM of the FAF.

Note, no change

**TBL 5-5-2**

**Wake Turbulence Separation Table for on Approach**

		Follower					
		A	B	C	D	E	F
Leader	A	.	5 NM	6 NM	7 NM	7 NM	8 NM
	B	.	3 NM	4 NM	5 NM	5 NM	7 NM
	C	.	.	.	3.5 NM	3.5 NM	6 NM
	D	.	.	.	.	.	5 NM
	E	.	.	.	.	.	4 NM
	F	.	.	.	.	.	.

h, no change

1. Wake turbulence separation must be applied in accordance with Table 5-5-2.

h2, delete

renumber h3 through h5 to h2 thru h4

No further changes to paragraph.

**5-5-7. PASSING OR DIVERGING**

Title through a.2. Reference, no change

**NOTE –**

*Although all other approved separation may be discontinued, the requirements of para 5-5-4 minima, subpara f must apply when wake turbulence separation is required.*

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No further changes to paragraph.

**5-8-3. SUCCESSIVE OR SIMULTANEOUS DEPARTURES***TERMINAL*

Except when wake turbulence separation is required, separate aircraft departing from the same airport/heliport or adjacent airports/heliports in accordance with the following minima provided radar identification with the aircraft will be established within 1 mile of the takeoff runway end/helipad and courses will diverge by 15 degrees or more.

**REFERENCE-**

FAAO JO 7110.65, Para 3-9-7, *Wake Turbulence Separation for Intersection Departures.*

FAAO JO 7110.65, Para 3-9-8, *Intersecting Runway Separation.*

FAAO JO 7110.65, Para 3-3-4, *Minima.*

Note 1, 2, 3 through FIG 5-8-3, no change

Fig 5-8-3 Note, References, delete

b through FIG 5-8-5, no change

Fig 5-8-5 Note, delete

No further changes to paragraph.

**5-8-5. DEPARTURES AND ARRIVALS ON PARALLEL OR NONINTERSECTING DIVERGING RUNWAYS**

Title through FIG 5-8-12, no change.

**NOTE –**

*In the event of a missed approach by a category A, B, C, or D aircraft, apply the procedures in para 3-9-6, Same Runway Separation, or para 3-9-8, Intersecting Runway separation, as appropriate, to ensure that the category A, B, C, or D aircraft does not overtake or cross in front of an aircraft departing from the adjacent parallel runway.*

No further changes to paragraph.

**6-1-4. ADJACENT AIRPORT OPERATION**

Title through WAKE TURBULENCE APPLICATION, no change.

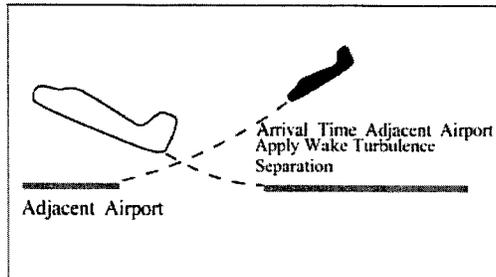
The ATC facility providing service to and having control jurisdiction at adjacent airports must separate arriving or departing IFR aircraft on a course that will cross the flight path:

- a. Behind category A aircraft:
  - 1. Category B, C, D, and E – 3 minutes.
  - 2. Category F – 4 minutes.
  
- b. Behind category B aircraft:
  - 1. Category B, C, D, and E – 2 minutes.
  - 2. Category F – 3½ minutes.
  
- c. Behind category C aircraft:

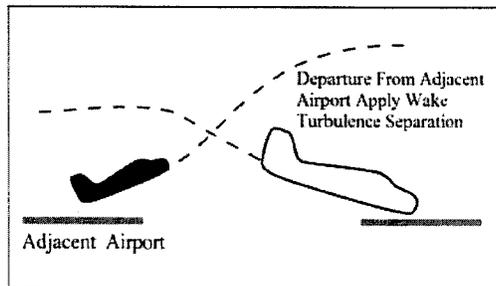
## APPENDIX A

1. Category D and E – 2 minutes.
  2. Category F – 3 minutes.
- d. Category F aircraft behind a category D – 2 minutes.

**FIG 6-1-1**  
Adjacent Airport Operation – Arrival



**FIG 6-1-2**  
Adjacent Airport Operation – Departure



### 6-1-5. ARRIVAL MINIMA

#### TERMINAL

#### WAKE TURBULENCE APPLICATION

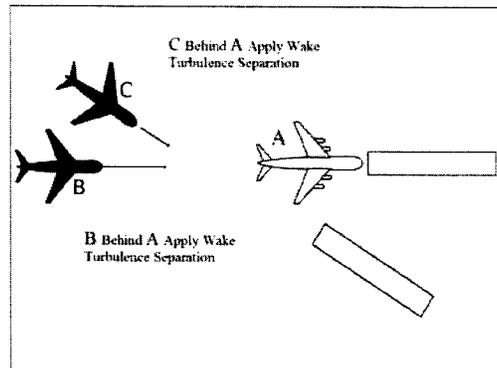
Separate IFR aircraft landing behind other arriving aircraft to the same runway, a parallel runway separated by less than 2,500 feet, or a crossing runway if projected flight paths will cross, by the following:

- a. Behind category A aircraft:
  1. Category B, C, D, and E – 3 minutes.
  2. Category F – 4 minutes.
- b. Behind category B aircraft:
  1. Category B, C, D, and E – 2 minutes.
  2. Category F – 3½ minutes.
- c. Behind category C aircraft:
  1. Category D and E – 2 minutes.

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2. Category F – 3 minutes.
- d. Category F aircraft behind a category D – 2 minutes.

**FIG 6-1-3**  
**Arrival Minima Landing Behind**  
**Category A, B, C, and D.**



### 6-7-5. INTERVAL MINIMA

Use the following time or radar interval as the minimum interval between successive approaches and increase the intervals as follows:

- a. Minutes or miles in trail:
  1. Behind a category A aircraft:
    - (a) Category B – 3 minutes or 5 miles.
    - (b) Category C – 3 minutes or 6 miles.
    - (c) Category D and E – 3 minutes or 7 miles.
    - (d) Category F – 4 minutes or 8 miles.
  2. Behind a category B aircraft:
    - (a) Category B – 2 minutes or 3 miles.
    - (b) Category C – 2 minutes or 4 miles.
    - (c) Category D and E – 2 minutes or 5 miles.
    - (d) Category F – 3½ minutes or 7 miles.
  3. Behind a category C aircraft:
    - (a) Category D and E – 2 minutes or 3½ miles.
    - (b) Category F – 3 minutes or 6 miles.
  4. Category F aircraft behind:
    - (a) Category D – 2 minutes or 5 miles.
    - (b) Category E – 2 minutes or 4 miles.

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- b. Further increase of the interval may be necessary, considering the following:
1. Relative speeds of the aircraft concerned.
  2. Existing weather conditions.
  3. Distance between the approach fix and the airport
  4. Type of approach being made.

**NOTE –**

*Increased separation is required for smaller aircraft behind larger/heavier aircraft due to the possible effects of wake turbulence.*

**REFERENCE –**

*FAAO JO 7110.65, Para 5-9-5, Approach Separation responsibility*

*FAAO JO 7110.65, Para 6-7-1, Application*

*FAAO JO 7110.65, Para 6-7-2, Approach Sequence*

### 7-4-3. CLEARANCE FOR VISUAL APPROACH

Title through c3, no change

d. All aircraft following a wake category A, B, or C aircraft, or category E and F following a category D aircraft, or category F following a category E aircraft, must be informed of the airplane manufacturer and/or model.

**EXAMPLE-**

*“Cessna Three Four Juliet, following a heavy Boeing 747, 12 o'clock, seven miles.”*

*or*

*“Cessna Three Four Juliet, following a heavy Seven forty seven, 12 o'clock, seven miles.”*

No further changes to paragraph.

### 7-4-4. APPROACHES TO MULTIPLE RUNWAYS

Title through c., no change

1. Parallel runways separated by less than 2,500 feet. Unless standard separation is provided by ATC, an aircraft must report sighting a preceding aircraft making an approach (instrument or visual) to the adjacent parallel runway. When an aircraft reports another aircraft in sight on the adjacent final approach course and visual separation is applied, controllers must advise the succeeding aircraft to maintain visual separation. However, do not permit a category A, B, or C aircraft to overtake another aircraft. Do not permit a category D or E aircraft to overtake a category F aircraft.

**APPENDIX A**

No further changes to paragraph.

**7-6-7. SEQUENCING**

Title through c.1., no change.

2. When parallel runways are less than 2,500 feet apart, do not permit a category A, B, or C aircraft to overtake any aircraft, nor a category D or E aircraft to overtake a category F aircraft established on final within the facility's area of responsibility.

**Pilot/Controller Glossary.** Remove *Aircraft Weight Classes* and insert the following:

**Aircraft Wake Categories.** For the purposes of Wake Turbulence Separation Minima, aircraft are categorized as Category A through Category F. Each aircraft is assigned a category based on wingspan and maximum takeoff weight (MTOW).

- a. Category A - Aircraft capable of MTOW of 300,000 pounds or more and a wingspan greater than 245 feet.
- b. Category B - Aircraft capable of MTOW of 300,000 pounds or more and a wingspan greater than 175 feet and less than or equal to 245 feet.
- c. Category C – Aircraft capable of a MTOW of 300,000 pounds or more and a wingspan greater than 125 feet and less than or equal to 175 feet.
- d. Category D – Aircraft capable of a MTOW less than 300,000 pounds and a wingspan greater than 125 feet and less than or equal to 175 feet; or, aircraft capable of a MTOW greater than 41,000 pounds with a wingspan greater than 90 feet and less than or equal to 125 feet.
- e. Category E – Aircraft capable of a MTOW greater than 41,000 pounds with a wingspan greater than 65 feet and less than or equal to 90 feet.
- f. Category F – Aircraft capable of a MTOW of less than 41,000 pounds and a wingspan less than or equal to 125 feet, or aircraft capable of a MTOW less than 15,500 pounds regardless of wingspan, or a powered sailplane.

**FAA Order JO 7210.3:****3-7-7. PREARRANGED COORDINATION**

Title thru b6, No change

7. Controllers who penetrate another controller's airspace using P-ACP must determine whether the lead aircraft is a category A, B, C, or D when separating aircraft operating directly behind, or directly behind and less than 1,000 feet.

No further changes to paragraph