

# Wake Turbulence Separation (Consolidated Wake Turbulence/RECAT)

7110.126A (09/28/2019)

## Radar Separation

- Must be applied when less than 1,000ft below (behind A/B/C/D) or less than 500ft below (behind E) AND when within 2,500ft of the aircraft flight path over the surface of the earth.
- May be used for full length departures when radar separation delegated to tower; separation must exist at the time both aircraft are airborne.
- Values in parentheses are only applicable when two aircraft are on approach to same runway and said separation must exist when the aircraft in front is over the threshold.
- 'NOWGT' aircraft require 10NM separation in front and behind.

	Follower							
	B	C	D	E	F	G	H	I
A	4.5	6	7			8		
B	3	4	5					
C			3.5		5	5 (6)		
D	3	4	5	5 (6)				
E								4
F								(4)

## Intersection Departures

- Smaller aircraft departing point more than 500ft ahead of larger aircraft departure point.
- I behind H/F/G may be waived by explicit pilot request.
- Successive touch and go operations considered intersection departures. In this case, may be waived when the touch and go aircraft behind is maintaining visual separation.

In Front	Behind	Time
<ul style="list-style-type: none"> <li>• Same runway</li> </ul>		
H/F/G	I	3 minutes (waivable)
<ul style="list-style-type: none"> <li>• Same runway or parallels separated by less than 700ft</li> <li>• Parallels separated by 700ft or more if projected flight paths will cross</li> </ul>		
E	I	3 minutes
<ul style="list-style-type: none"> <li>• Same runway or parallels separated by less than 2,500ft</li> <li>• <i>Parallels separated by less than 2,500ft with thresholds offset by 500ft or more counts as an intersection departure for this section</i></li> </ul>		
A	B/C/D/E/F/G/H/I	4 minutes
B/D	B/C/D/E/F/G/H/I	3 minutes
C	E/F/G/H/I	

## Full Length Departures

- Same departure point or departure points offset by 500ft or less.
- Do not use LUAW on same runway for H/I behind A/B/C/D while waiting for interval except when explicitly waived by pilot.

# CWT Categories

[See 7360.1E for comprehensive list](#)

Category A	A388
Category B	Pairwise Upper Heavy
Category C	Pairwise Lower Heavy
Category D	Non-Pairwise Heavy
Category E	B757
Category F	Upper Large aircraft excluding B757 aircraft
Category G	Lower Large aircraft
Category H	Upper Small aircraft with an MTOW of more than 15,400 pounds up to 41,000 pounds
Category I	Lower Small aircraft with an MTOW of 15,400 pounds or less

Common Aircraft Types											
A A380	B Upper Heavy	C Lower Heavy	D Non-Pairwise Heavy		E B757	F Upper Large		G Lower Large		H Upper Small	I Lower Small
A388	A332	A306	A124	DC85	B752	A318	C130	AT43	E170	ASTR	BE10
	A333	A30B	A339	DC86	B753	A319	C30J	AT72	E45X	B190	BE20
	A343	A310	A342	DC87		A320	CVLT	CL60	E75L	BE40	BE58
	A345	B762	A3ST	E3CF		A321	DC93	CRJ1	E75S	B350	BE99
	A346	B763	A400	E3TF		B712	DC95	CRJ2	F16	C560	C208
	A359	B764	A50	E6		B721	DH8D	CRJ7	F18H	C56X	C210
	B742	C17	AN22	E767		B722	E190	CRJ9	F18S	C680	C25A
	B744	DC10	B1	IL62		B732	GL5T	CRJX	F900	C750	C25B
	B748	K35R	B2	IL76		B733	GLEX	DC91	FA7X	CL30	C402
	B772	MD11	B52	IL86		B734	GLF5	DH8A	GLF2	E120	C441
	B773		B703	IL96		B735	GLF6	DH8B	GLF3	F2TH	C525
	B77L		B741	K35E		B736	MD82	DH8C	GLF4	FA50	C550
	B77W		B743	KE3		B737	MD83	E135	SB20	GALX	P180
	B788		B84D	L101		B738	MD87	E145	SF34	H25B	PAY2
	B789		B74R	MYA4		B739	MD88	E195		LJ31	PA31
	C5		B74S	R135			MD90			LJ35	PC12
	C5M		B78X	T144						LJ45	SR22
			B778	T160						LJ55	SW3
			B779	TU95						LJ60	SF50
			BLCF	VMT						SH36	TBM9
			BSCA							SW4	
			C135								
			C141								

## Phraseology

- Issue wake turbulence and traffic advisory to arriving aircraft behind departing/arriving aircraft to same runways and parallels separated by less than 2,500ft:
  - B/C/D/E/F/G/H/I behind A/B/D
  - E/F/G/H/I behind C
  - I behind E
- These words must be used as part of the identification in all communications with or about the aircraft:
  - "Super" with or about a Category A
  - "Heavy" with or about a Category B/C/D

## Same Runway Separation

CATEGORY I small single-engine propeller driven aircraft weighing 12,500 lbs. or less, and all helicopters

CATEGORY II small twin-engine propeller driven aircraft weighing 12,500 lbs. or less

CATEGORY III all other aircraft

[See 7360.1E for SRS categories](#)

- Departing aircraft may not begin takeoff roll until aircraft ahead has turned to avert any conflict or is airborne and minima in table exist:
- Arriving aircraft may not cross threshold (except when authorized in 3-10-10, altitude restricted low approach) until aircraft ahead has:
  - cleared the runway
  - as departed (is airborne) and minima in table exist between departing and threshold:

In Front	Behind	Distance	
Category 1 or 2	Category 1	~0.5nm	3,000ft
Category 1 or 2	Category 2	~0.7nm	4,500ft
Either is Category 3		~1.0nm	6,000ft
Any category	Helicopter	Visual separation can be used	

- When a Cat 3 is *not* involved and it is daytime, the above distances for Cat 1 and 2 may be used between the aircraft in front and the threshold instead of having the aircraft in front be clear of the runway. (This allows two Cat 1 or 2 aircraft to be on the runway at the same time when no Cat 3 is involved.)

*A pilot or controller may consider an aircraft, which is exiting or crossing a runway, to be clear of the runway when all parts of the aircraft are beyond the runway edge and there are no restrictions to its continued movement beyond the applicable runway holding position marking.*