

# Attachment 8

To Operations Group Factual Report

DCA12IA141

Era Approach to Stalls Guidance

### **0907 APPROACH TO STALLS**

The purpose of stall training is to provide the pilot with experience in recognition of pending stall characteristics, entry procedures and recovery response techniques.

The FAA requires that approaches to stall be demonstrated in flight with various configurations of landing gear and flap extension. Any of the approaches to stall may be performed either straight ahead or in turns.

Pilot performance is judged on ability to RECOGNIZE the approach to stall, prompt action in initiating a smooth recovery, without excessive loss of altitude while holding the assigned heading.

The Dash 8 stall behavior is docile and the flight controls remain positive throughout. All stalls are preceded by buffet; however, the margin prior to onset of stall decreases as flap angle is increased. The stick shaker system provides adequate warning in all configurations, about 6 kts at flaps 35. Stall recovery is prompt following relaxation of back pressure or application of forward pressure on the control column. Altitude loss can be eliminated by the prompt application of power. Excessive forward movement of the column should be avoided as this can add to the natural nose down pitching motion and produce an excessively steep nose down attitude during the recovery.

The greatest nose-high stall attitudes occur with zero flap. The stall attitude decreases proportionately as flap angle is increased.

Complete Descent and Approach checklist, clear area and proceed as follows:

## **CONFIGURATION - CLEAN**

### **INITIAL CONDITION**

Altitude ..... Call "4000 feet above terrain"  
Condition Levers ..... Call "Props Max"  
Power Levers ..... Call "Torque 15"  
Trim to ..... VSEC  
Recovery Speed ..... 150 knots

### **ENTRY PROCEDURE**

1. Maintain altitude.
2. Hold heading.
3. Slowly decelerate until onset of shaker.

### **RECOVERY PROCEDURE**

1. Start recovery at earliest warning (stick shaker).
2. Advance power levers and call "Max Power".
3. Reduce back pressure to stop shaker and minimize altitude loss. GA mode may be used.
4. Accelerate to and climb at VSEC back to original altitude.
5. Call "climb power" and accelerate to 150 knots.
6. Call "40 Torque" approaching 150 knots.

## **CONFIGURATION-TAKEOFF**

Flaps 15 degrees - gear down, 15-30 degree of bank. (Takeoff configuration)

### **INITIAL CONDITION**

Altitude ..... Call "4000 feet above terrain"  
Condition Levers ..... Call "Props Max"  
Power Levers ..... Call "Torque 15"  
Trim to .....  $V_2$   
Recovery speed .....  $V_2$

### **ENTRY PROCEDURE**

1. Maintain altitude.
2. Extend landing gear at 150 knots.
3. Extend flaps to 15 at 148 knots.
4. Start 15 to 30 degree bank when calling for gear down.

### **RECOVERY PROCEDURE**

1. Start recovery at earliest warning (stick shaker).
2. Advance power levers and call "Max Power, Flaps 5".
3. Reduce back pressure to stop shaker and minimize altitude loss.  
GA mode may be used.
4. Accelerate to  $V_2$  for 5 degrees flap.
5. Rotate to takeoff attitude.
6. Positive rate of climb, call "Positive Rate, Gear Up".
7. Maintain  $V_2$  back to original altitude.
8. Zero rate of climb and accelerate to flap retract speed.
9. Call "Flaps Up, Climb Power" and accelerate to 150 knots.
10. Call "Torque 40" approaching 150 knots.

### **CONFIGURATION - LANDING**

Flaps 35 degrees - gear down (Landing Configuration).

### **INITIAL CONDITION**

Altitude..... Call "4000 feet above terrain"

Condition Levers..... Call "Props Max"

Power Levers..... Call "Torque 20"

Trim to.....  $V_2$

Recovery speed.....  $V_2$

### **ENTRY PROCEDURE**

1. Maintain altitude.
2. Hold heading.
3. Extend landing gear at 150 knots.
4. Extend flaps, at 148 knots call "flaps 15", at 130 knots call "flaps 35".

### **RECOVERY PROCEDURE**

1. Start recovery at earliest warning (stick shaker).
2. Advance power levers and call "Max Power, Flaps 15".
3. Reduce back pressure to stop shaker and minimize altitude loss. GA mode may be used.
4. Accelerate to  $V_2$  for 15 degrees flap.
5. Rotate to takeoff attitude.
6. Positive rate of climb, call "Positive Rate, Gear Up".
7. Maintain  $V_2$  back to original altitude.
8. Zero rate of climb and accelerate to flap retract speed.
9. Call "Flaps Up, Climb Power" and accelerate to 150 knots.
10. Call "Torque 40" approaching 150 knots.

### **0909 INDICATED STALL SPEEDS WITH GEAR EXTENDED OR RETRACTED**

<u>Gross Weight</u>	<u>Lbs.</u>	<u>Flap Setting</u>	<u>Stall IAS</u>
Level Flight	33,000	0°	94 K
		5°	85 K
		15°	77 K
		35°	71 K