

Attachment 12

**Operations Group Chairman's
Factual Report**

DCA05MA003

Stall Training

Pinnacle Airlines



Northwest Airlink

CANADAIR REGIONAL JET

FLIGHT CREW OPERATING MANUAL—Volume 2

APPROACH TO STALLS

Approach to stall training familiarizes pilots with the following:

- Aircraft handling at high angles of attack with a 1-G wing loading in configurations that are representative of everyday operations
- Imminent stall indications and proper recovery techniques

Clearing turns should be made before each maneuver. Stall recovery should be promptly initiated at the first indication of imminent stall using the recovery techniques shown in the profiles. Recovery should minimize altitude loss. Approach to stall demonstrations are performed in clean, takeoff, and landing configurations as follows:

- Clean configuration—Flaps 0°, gear up
- Takeoff configuration—Flaps 20°, gear down, 20° bank
- Landing configuration—Flaps 45°, gear down

**APPROACH TO STALL—CLEAN CONFIGURATION****Set-up**

1. Establish level flight at 10,000 feet
2. Have PNF input speed data off of the current aircraft weight card:
PNF—BUG REF +5 FOR FLAPS 0° LANDING
3. Autopilot—OFF; Flight director—REMAINS ON
4. Flight spoilers—DEPLOY (OPTIONAL)
5. When airspeed is reduced to no lower than 190 KIAS:
PF—“SET 45% N₁”
6. Altitude—MAINTAIN, DO NOT TRIM BELOW SPEED
BUG
7. Heading—MAINTAIN

Recovery—Initiate at Stick Shaker

1. PF—“MAX THRUST, SPOILERS IN”
2. PF—Simultaneously:
 - a. SET MAX THRUST (FIREWALL, IF REQUIRED)
 - b. LEVEL WINGS
 - c. MAINTAIN PITCH ATTITUDE TO MINIMIZE LOSS
OF ALTITUDE
3. PNF—
 - a. ADJUST THRUST TO MAX THRUST
 - b. ENSURE SPOILERS ARE IN BY PHYSICALLY VERI-
FYING POSITION OF SPOILER LEVER HANDLE
4. Climb aggressively to the original altitude, respecting stick
shaker

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Clean Up

1. Maintain altitude and increase airspeed
2. PF— “BUG 200”
3. Reduce thrust to maintain 200 KIAS
4. PF— “HEADING SYNC, AUTOPILOT ON”

— MANEUVER COMPLETE —

**APPROACH TO STALL—TAKEOFF CONFIGURATION****Set-up**

1. Establish level flight at 10,000 feet
2. Have PNF input speed data off of the current aircraft weight card:

PNF—SET V_T , SET V_2 ; BUG REF +5 FOR FLAPS 20° LANDING
3. Autopilot and Flight director—OFF
4. Configure to FLAPS 20° on schedule
5. Landing gear lever—DOWN
6. When airspeed is reduced to speed bug—ENTER A 20° BANK LEVEL TURN

PF— “SET 45% N_1 ”
7. Altitude—MAINTAIN, DO NOT TRIM BELOW SPEED BUG

Recovery—Initiate at Stick Shaker

1. PF— “MAX THRUST, SPOILERS IN”
2. PF—Simultaneously:
 - a. SET MAX THRUST (FIREWALL, IF REQUIRED)
 - b. LEVEL WINGS SLOWLY
 - c. MAINTAIN PITCH ATTITUDE TO MINIMIZE LOSS OF ALTITUDE
3. PNF—
 - a. ADJUST THRUST TO MAX THRUST
 - b. ENSURE SPOILERS ARE IN BY PHYSICALLY VERIFYING POSITION OF SPOILER LEVER HANDLE
4. Climb aggressively to the original altitude, respecting stick shaker

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Clean Up

1. When descent is arrested and clear of shaker:
PF— “GEAR UP”
2. When airspeed has increased to $V_2 + 20$:
PF— “FLAPS UP, BUG 200”
3. Reduce thrust to maintain 200 KIAS
4. PF— “HEADING SYNC, HEADING MODE, AUTOPILOT ON”

— MANEUVER COMPLETE —

**APPROACH TO STALL—LANDING CONFIGURATION****Set-up**

1. Establish level flight at 10,000 feet
2. Have PNF input speed data off of the current aircraft weight card:

PNF—SET V_T , SET V_2 ; BUG REF +5 FOR 45° LANDING
3. Autopilot and flight director—REMAIN ON
4. Configure to FLAPS 20° on schedule
5. Landing gear lever—DOWN
6. Configure to flaps 30° on schedule
7. Configure to flaps 45° on schedule
8. Thrust levers—

PF— “SET 45% N_1 ”
9. Altitude—MAINTAIN

Recovery—Initiate at Stick Shaker

1. PF— “MAX THRUST, SPOILERS IN”
2. PF—Simultaneously:
 - a. SET MAX THRUST (FIREWALL, IF REQUIRED)
 - b. LEVEL WINGS SLOWLY
 - c. MAINTAIN PITCH ATTITUDE TO MINIMIZE LOSS OF ALTITUDE
3. PNF—
 - a. ADJUST THRUST TO MAX THRUST
 - b. ENSURE SPOILERS ARE IN BY PHYSICALLY VERIFYING POSITION OF SPOILER LEVER HANDLE
4. Climb aggressively to the original altitude, respecting stick shaker



Clean up

1. When descent is arrested and clear of shaker:
PF— “FLAPS 20, GEAR UP”
2. When airspeed has increased to $V_2 + 20$:
PF— “FLAPS UP, BUG 200”
3. Reduce thrust to maintain 200 KIAS
4. PF— “HEADING SYNC, AUTOPILOT ON”

— MANEUVER COMPLETE —