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NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

Operations Group Chairman
Q400 CFM Operations Bulletin 09-004

(6 Pages)

OPERATIONS BULLETIN Q400 CFM #09-004

TO: Q400 CFM Manual Holders
FROM: Q400 Fleet Manager
SUBJECT: **Q400 Enhanced Flight Maneuvers Training**
ISSUE DATE: 04/06/09
EFFECTIVE: UPON RECEIPT
BULLETINS IN EFFECT: 08-009; 08-010; 08-011; 08-012; 08-013; 08-014; 08-015; 09-001, 09-002, 09-003, 09-004
ASSOCIATED BULLETINS: CMDTP 09-003

INSTRUCTIONS:

Staple the Q400 CFM Bulletin #09-004 to the front pages reserved for bulletins in the Q400 CFM. Cross out the stall profiles on pages 7 of 16, 8 of 16 and 9 of 16 in Section 10 of the CFM

PURPOSE:

This Bulletin introduces new Enhanced Flight Maneuvers Training items that will be added to Initial, Upgrade, Transition and Recurrent training and checking events. It also describes the background and implementation of these maneuvers.

PROCEDURE:

Maneuvers discussed in this bulletin will be incorporated into all Initial, Upgrade, and Transition training and checking events. Current Pilots receiving Recurrent training will receive SPOT training that will encompass the maneuvers discussed in this bulletin. The procedures covered in SPOT training will be incorporated into the training program thereafter.

The attached pages 3 and 4 provide descriptions of the individual Enhanced Flight Maneuvers Training items and the SPOT training philosophy. They should be used for informational purposes to better understand the changes in training events and culture.

The Stall Recovery procedure on page 5 provides new standard procedures and callouts for stall recovery that pilots will be responsible for. The Stall Recovery Procedure will be incorporated into the Q400 CFM in a future revision.

New Stall Recovery Procedure

The new stall recovery procedures follow basic wing stall recovery technique, and include the following factors:

- The first priority in recovery from an impending or actual wing stall condition is to increase airspeed and airflow across the airfoil. This is accomplished with a combination of increased power and decreased pitch.
- Available altitude is a resource and should be used as required to increase airspeed. Maintaining altitude in a stall recovery maneuver is only required if proximity to terrain or other traffic is a factor.
- Flaps and gear configuration is not changed until after a safe airspeed is established (IAS Low Speed Cue + 10 kts minimum).
- Transition to a missed approach, or applicable flight regime, is accomplished after the stall recovery.
- Flight Director guidance may not be appropriate and should not be used until stall recovery is accomplished.

Special Procedures Operational Training (SPOT)

SPOT is probably a new concept to most of you. This is training focused on changing and/or improving procedures or techniques used by our crews in the operation of our aircraft. The procedures in this SPOT training will be incorporated into the training program for initial, new hire, upgrade and recurrent.

The SPOT will be conducted during the first part of the proficiency check; the maneuvers given or demonstrated will be graded as Complete if the proper recovery is completed within the aircraft limitations. An Incomplete grade will be given if the proper procedure is not followed.

Stall Recovery

Three stall recoveries are required for each pilot during their proficiency check. Two will be given during the SPOT training the remaining one will be given during the proficiency check. During the SPOT there will be a clean stall, gear and flaps up, autopilot on descending to a fixed altitude. Power levers at flight idle with airspeed decreasing. When the stick shaker goes off the autopilot will disengage... recover using the new stall recovery technique.

The second stall will be a takeoff stall, takeoff configuration in a turn. Power levers to flight idle, continuing to turn at stick shaker recover using the new stall recovery technique.

Stick Pusher Demo

The Stick Pusher Demo will be preceded by a briefing on the purpose of the stick pusher system, its normal operation, components of the stick pusher system, and how and when to disengage the stick pusher.

CAUTION:

This is a Simulator Environment maneuver only. It is meant to demonstrate the activation of the stick pusher and is in no way meant to be a part of the approved Stall Recovery procedure nor an actual flight maneuver.

Successful Stall recovery is dependent upon prompt initiation of Stall Recovery techniques at the first indication of a stall.

The demo will start from level flight, gear down, flaps 15⁰ and power levers at flight idle. At stick shaker the auto pilot will disengage, hold the yoke neutral or with a slight amount of back pressure. As the stall deepens keep applying back pressure, allow the system to function as designed. The stick pusher will activate. Do not attempt to overcome the pusher, allow it to fully actuate. When the pusher releases begin manually recovering from the stall. Altitude loss during this maneuver is acceptable.

A second stall will be demonstrated, the same entry as before. This time you will be asked to try to overcome the pusher then deactivate the system.

Unusual Attitude / Upset Training

A review of the proper recovery techniques for Unusual Attitude / Upset Scenarios will be given.

Three separate scenarios will be given; nose high wings level decreasing airspeed. The second will be nose down turning left or right (High bank angle) with increasing airspeed. The third will be nose down turning right or left (Very high bank angle) with increasing airspeed.

STALL RECOVERY

The objective of Stall Recovery training is to familiarize pilots with the indications of an approaching stall and the correct recovery technique for stalls entered from realistic flight scenarios. Successful Stall recovery is dependent upon prompt initiation of Stall Recovery techniques at the first indication of a stall. The flight crew shall use all energy resources available to them, including altitude, as appropriate to recover from a stall condition. Do not use the Flight Director for pitch guidance. Do not change flap or gear configuration until after a safe airspeed is established.

CAUTION:

An actual stall results in a nose down pitch, especially if the stick pusher activates (70 lbs.). Too much forward movement of the control column can produce an excessive nose down attitude. Be prepared to manage control forces for required pitch inputs.

PILOT FLYING	PILOT MONITORING
<p>At first indication of stall, call "STALL, CHECK POWER" and advance the Power Levers to the rating detent.</p> <p style="text-align: center;">– Do NOT press G/A button –</p>	<p>Move the Condition Levers to the MAX 1020 position and ensure Power Levers are in the rating detent.</p> <p style="text-align: center;">"POWER CHECKED"</p>
<p>Simultaneously with power:</p> <ul style="list-style-type: none"> • Reduce pitch (No lower than the horizon) • Roll wings level. <p>If stall recovery is not immediate:</p> <ul style="list-style-type: none"> • Lower pitch further to increase airspeed (altitude permitting). <p>After recovery from stall</p> <ul style="list-style-type: none"> • Accelerate to safe airspeed (IAS Low Speed Cue + 10 kts minimum) • Gradually pitch to level flight. <p style="text-align: center;">– Avoid Secondary Stall –</p>	<p>Monitor airspeed and proximity to terrain.</p> <p>Check Flap Position.</p> <p>Assist PF as required.</p> <p>Guard flight controls. Be prepared to assist PF with pitch or power control if required.</p>
<p>NOTE: <i>As airspeed increases at recovery, forward pressure on control column may be required to maintain pitch attitude.</i></p>	
<p>When at safe airspeed:</p> <ul style="list-style-type: none"> • If on Approach: Call "Missed Approach" and execute Missed Approach (GA). <p style="text-align: center;">- DO NOT CONTINUE APPCH -</p> <ul style="list-style-type: none"> • If in Cruise or Climb: Reestablish appropriate flight regime. 	<p>Ensure safe airspeed (Low Speed Cue +10 kt)</p> <p>Initiate Missed Approach (GA) or Climb Flow as appropriate.</p>

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