Attachment 20

Operational Factors Group Chairman's Factual Report

DCA00MA030

Normal Landing Dry Runway

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Once the landing runway has been visually acquired whether from a visual or instrument approach, remain on centerline and on the proper glideslope (ILS, VASI, PAPI, etc.) until the middle marker or further descent is necessary for a safe landing. Maintain briefed target speed and do not descend below the glideslope or "duck under" to solely facilitate an early turn off from the runway. Touchdown should occur between 1000 and 1500 feet from the landing threshold with the runway centerline between the main landing gear.

At touchdown, verify that the automatic speedbrakes have deployed or deploy them manually while lowering the nose to the runway. Initiate reverse thrust as the nosewheel touches down by rapidly raising the reverse thrust levers aft to the reverse idle interlock. After the interlock is released, modulate reverse thrust as required and avoid exceeding engine limits. A minimum of 65% (-200: 1.4 EPR) should be attained. When required, maximum allowable go-around thrust may be used. At 80 knots, the pilot not flying will call, **"80 knots."** Normally, the pilot flying will begin braking at 80 knots and gradually reduce the reverse thrust levers so as to be out of reverse thrust when reaching taxi speed. On short runways or with adverse landing conditions, do not hesitate to initiate braking prior to 80 knots if required.

Note: Do not release shoulder harness unless clear of the runway.

Crosswind Landings

With a crosswind, fly the final approach in a wings-level attitude and crab into the wind. Just prior to touchdown, use the rudder to align the fuselage with the runway and simultaneously lower the upwind wing. Use only enough cross control to prevent drift. The longitudinal axis of the aircraft must be parallel with the runway prior to touchdown to prevent heavy side loads on the landing gear. After touchdown, use rudder to maintain directional control and ailerons to maintain wings level. Rudder and aileron input is effective down to approximately 60 knots.

When landing in crosswind conditions combined with a very slippery runway, the crab angle should be maintained all the way to touchdown. Allowing the airplane to touchdown without removing the crab angle will reduce drift toward the downwind side of the runway on wet or icy runways.

The cross control method of using opposite rudder and aileron to maintain centerline tends to be a bit tricky (due to wing sweep and spoiler action) and often leads to over controlling and hard landings, especially in gusty wind conditions.