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NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

Attachment 25 – Stable Approach Criteria
(4 Pages)

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
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OPERATIONAL FACTORS

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Table Of Contents

A. STABLE APPROACH CRITERIA

1.0 Flight Operations Manual (FOM) Reference[1]

03.07.01.03 STABILIZED APPROACH CRITERIA

The purpose of conducting a stabilized approach is to maintain a high degree of safety during the approach and landing process. In complying with stabilized approach criteria, the Captain must consider traffic and weather conditions, distance to the runway and the aircraft's energy profile. The objective is to plan the aircraft configuration process in a manner that results in arriving at 1000′ Above Field Elevation (AFE) during the approach, in a stabilized condition. Under no circumstances will safety-of-flight be compromised. If at any time during the approach the Captain feels that the stabilized approach criteria cannot be achieved or maintained, a go-around must be initiated.

All approaches must be stabilized by 1000′ AFE. An approach is considered stable when the following conditions are met:

- Aircraft is in the landing configuration and the landing checklist has been completed
- Airspeed is within +10 or -5 knots of computed final approach speed*
- Sink rate is 1000′ per minute or less and stable**
- Aircraft is on a stable vertical path that will result in landing within the touchdown zone
- Engine thrust is stabilized at a level that results in target speed (as listed above)
- Aircraft is aligned with the lateral confines of the runway by 200′ AFE

NOTE: *Airspeed must be within 5 knots of target by 500′ AFE.

NOTE: **Vertical speed up to 1200′ per minute may be acceptable under approach conditions that require higher airspeeds/ground speeds due to non-normal aircraft system configuration.

VISUAL APPROACHES

When conducting visual approaches, weather, traffic and ATC requests must be considered. These approaches should be planned so as to remain as aerodynamically clean as possible during the initial approach for traffic, noise abatement and fuel conservation. Plan the arrival and aircraft configuration so as to meet all the stabilized approach criteria listed above by 1000′ AFE.

[1] Source: UPS Flight Operations Manual (FOM), Section 03.07.01.03 STABILIZED APPROACH CRITERIA.

INSTRUMENT APPROACHES

During an instrument approach, crews are encouraged to stabilize the approach prior to 1000′ AFE. However, all stabilized approach criteria must be met no later than 1000′ AFE. In addition, the following criteria are applicable at 1000′ AFE for stabilized instrument approaches in IMC:

- Localizer and or Glideslope deviation is one dot or less (steady state)
- Very High Frequency Omnidirectional Radio Range (VOR) course deviation is one quarter scale or less
- Non-Directional Beacon (NDB) course deviation is no greater than five degrees from desired bearing

If any of the above parameters cannot be maintained, or if the approach should become destabilized below 1000′ AFE, a go-around/missed approach must be executed immediately.

Any time after commencing the final approach segment [Final Approach Fix (FAF) inbound or Glideslope Intercept Altitude (GSIA)] on an instrument approach in Instrument Meteorological Conditions (IMC), an immediate go-around is mandatory if any of the following indications are present:

- On an ILS approach, the localizer or glideslope indication reaches full-scale deflection
- On a VOR approach, the course indicator shows a full-scale deflection
- On an NDB approach, the bearing indication deviates by more than 10 degrees from desired bearing
- On a GPS approach, if the aircraft position exceeds 0.2 miles either side of course

03.07.01.04 PREFERENTIAL LANDING RUNWAY

Normally, land on the preferential runway assigned by ATC. If the Captain believes that using a runway other than the preferential runway is a safer course of action, he may request to land on other than the preferential runway. When conditions permit, request to land on the runway that will save time, taxi distance and fuel.

2.0 Pilot Training Guide Reference[2]

02.02.02.03 STABILIZED APPROACH

A good landing begins with a stabilized approach. Stabilized approach requirements are defined in the FOM.

All approaches are required to be stabilized no later than 1000 feet HAT, in all flight conditions. Below 1000 feet HAT only minimum thrust and pitch changes should be necessary to maintain V_{APP} on a nominal 3° glide path to the runway, to land in the touchdown zone. If an approach becomes de-stabilized below 1000 feet HAT a go-around is required.

During an approach with variable, gusting winds, thrust and pitch adjustments may be larger than normal. If during an approach airspeed begins to decrease to less than V_{REF}, due to autothrottle operation or pilot control, adjust the target V_{APP} up to maintain an approach speed never less than V_{REF}.

[2] Source: UPS A300 Pilot Training Guide, Section 02.02.02.03 STABILIZED APPROACH.