Safety Targeted Awareness Report from the ERA Air Safety Group

STAR 011 V2 – December 2014	Unstabilised Approaches

Introduction

Continuation of an unstabilised approach to land may result in an aircraft arriving at the runway threshold too high, too fast, out of alignment with the runway centre-line, incorrectly configured or otherwise unprepared for landing. This can result in aircraft damage on touch-down, or runway excursion and consequent injury or damage to the aircraft or airfield installations.

The purpose of this STAR is to assist Members with establishing a procedure for handling unstabilised approaches.

Definition

The following is based on the Flight Safety Foundation's Approach-and-landing Accident Reduction (ALAR) Briefing Note 7-1:

An approach is stabilised when all of the following criteria are met:

- *The aircraft is on the correct flight path, which may be a company/state published turning approach to avoid terrain/obstacles, i.e. not a circling approach*
- *Only small changes in heading/pitch are necessary to maintain the correct flight path*
- *IAS is not more than VREF + 20kts and not less than VREF*
- *The aircraft is correctly configured for landing*
- *Rate of descent is no greater than 1000 feet/minute; if an approach angle requires a rate greater than 1000 feet/minute a special briefing should be conducted before the approach commences*
- *Power setting is appropriate for the aircraft configuration and is not below the minimum power for the approach stated in the operating manual for more than a few seconds*
- *All briefings and checklists have been completed*
- *Specific types of approach are stabilised if they also fulfil the following:*
    - *ILS approaches must be flown within one dot of the glide-slope and localizer*
    - *a Category II or III approach must be flown within the expanded localizer band*
    - *during a circling approach wings should be level on final when the aircraft reaches 300 feet above aerodrome elevation*
- *Unique, but approved, approach conditions or abnormal conditions requiring a deviation from the above elements of a stabilised approach require a specific briefing before the approach commences.*

Therefore, by default, any approach that fails to fulfil any of the above criteria should be classed as unstabilised.

Contributory factors to an unstabilised approach

The overwhelming urge to press-on in the hope that all it will turn out well in the end is a fundamental delusion that dramatically increases the risk of an accident on approach and landing.

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The following factors are often quoted as contributing to an unstabilised approach. This list is not exhaustive:

- Absence of appropriate operating philosophy, i.e. a crew is team in which all members are responsible contributors to the outcome
- Inadequate energy-management planning/briefing, e.g. suitable approach gates for the weather conditions
- Inadequate non-precision approach SOPs, or failure to comply
- Failure or unwillingness to recognise when a stabilised approach becomes unstabilised
- Use of non-standard calls/responses
- Complacency
- Adverse weather (e.g. strong/gusty winds, wind-shear, turbulence)
- Succumbing to ATC pressure to maintain high approach speed
- Late change of runway
- Approach angle
- Failure to take proper account of wind during a visual circuit, or circling
- Wind gradient due day/night mixing level and/or affected by terrain
- Field elevation/temperature, i.e. higher TAS requires higher rate of descent
- Anticipation and allowance for visual illusions
- Lack of escape strategy for airfields with significant proximate terrain
- Commercial pressure to maintain schedule

Member Action

It is recommended that Member Airlines undertake a review of their Standard Operating Procedures (SOPs) to ensure that they require the aircraft to go-around in the event of an unstabilised approach. The use of such SOPs should be included during initial training and recurrent training offers the opportunity to reinforce that behaviour and provides the opportunity to establish the disciplined use of SOPs.

Management at all levels must insist on the proper use of SOPs and the management themselves must accept that the flight crew's decision to go-around following an unstabilised approach is final.

If in doubt – GO AROUND – it is rarely wrong.

References

FSF ALAR Briefing Note 7.1: http://flightsafety.org/files/alar_bn7-1stablizedappr.pdf

SKYbrary Stabilised Approach Web Page: http://www.skybrary.aero/index.php/Stabilised_Approach