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Belge: VISUAL APPROACH CONSIDERATIONS IN THE USA

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Visual Approach Considerations in the USA

INTRODUCTION

This Briefing Leaflet aims to clarify the differences for Visual Approach operations in the USA for non-USA pilots in order for them to be better prepared to accept/reject them. It contains tables with an easy ‘checklist’ of actions and suggested scenarios followed by detailed procedures used in the US and things to watch out for.

Visual Approaches are commonplace in the USA. This differs greatly from other parts in the world. Many other countries do not use Visual Approaches as part of their normal Air Traffic Control procedures. Many non-US A pilots therefore have very limited exposure to Visual Approaches, and the transition from an Instrument Approach to a Visual Approach.

A Visual Approach may actually increase workload, rather than reducing it and further complicating the issue is that many non-USA pilots are from ICAO-centric regions, where the Visual Approach procedures differ from procedures in the USA.

From the FAA Safety Alert For Operators SAFO 21005 dated 27th July 2021:

“To expedite traffic, Air Traffic Control (ATC) may clear pilots for a visual approach in lieu of the published instrument approach procedure. Visual approaches reduce pilot/controller workload and expedite traffic by shortening flight paths to the airport. However, this expediency must be balanced with safety. It is the pilot’s responsibility, pursuant to 14 C.F.R. § 91.3, to advise ATC as soon as possible if a visual approach is not desired.”

Below are two tables that are matrix tools to assist pilots in understanding the differences and potential pitfalls relative to when Visual Approaches at USA aerodromes might be in use.

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Separation, Wake Turbulence, and Speed Responsibility by Approach Type Responsibility Separation Wake Speed Control from Other Turbulence (in priority order) Type of Approach Clearance Aircraft Separation

- s instructed by ATC, Instrument Approach ATC ATC
- s charted,
- s needed by pilot NO Preceding None None Aircraft Preceding Aircraft
- s instructed by Visual present but NOT ATC ATC ATC, Approach Acknowledged
- s needed by pilot Preceding Aircraft Present AND Pilot Pilot Acknowledged

NOTE Pilots are ultimately responsible for final determination of speed control to attain stabilized approach criteria for a safe landing

These next tables give some examples of situations where the Visual Approach is in use and some suggested responses to ATC calls. It should be noted that the phraseology used in the US is often times different to the standard ICAO phraseology.

Indications that Visual Approaches MAY be in use:

- “Visual approach(es) runway(s) (identifier) in use...” or
- Reported visibility and ceiling are significantly above 3 statute

ATIS

miles and 1000 feet (allows for “clear of clouds” flight to aerodrome)

If a visual approach is NOT desired in any situation:

Upon initial contact with “(facility) Approach, (callsign), ...unable visual approach...” Approach Control

Aircraft Separation Wake Turbulence Speed Control

Result: Stay • As instructed by on instrument ATC, approach ATC ATC

- s charted,
- s needed by pilot

If a visual approach MAY be acceptable but transfer of responsibility for separation from other aircraft and wake turbulence to pilot is NOT acceptable:

- Approach control: “(callsign), report runway in sight.” No aircraft • If visual approach desired – Pilot: “Runway (ID) in sight.” preceding (in • If visual approach NOT desired – Pilot: “(callsign), front) looking/searching,” Alternatively, “(callsign), we want to stay on the (name of instrument approach).”

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Result: Fly Aircraft Separation Wake Turbulence Speed Control

visual • As instructed by approach to Not applicable Not applicable ATC, runway • As needed by pilot Aircraft • Approach control: “(callsign), report traffic at your (clock position preceding (in and relative altitude) in sight.” front) but NOT • Pilot: “(callsign), looking/searching.” Alternatively, “(callsign), we acknowledged don’t have the traffic in sight, but we have runway (ID) in sight.”

Result: Fly Aircraft Separation Wake Turbulence Speed Control

visual • As instructed by approach to ATC ATC ATC, runway • As needed by pilot

If a visual approach AND transfer of responsibility for separation from other aircraft and wake turbulence to pilot IS acceptable:

Aircraft

- Approach control: “(callsign), report traffic at your (clock position preceding (in and relative altitude) in sight.” front) AND
- Pilot: “(callsign), traffic in sight.” acknowledged

Result: Fly Aircraft Separation Wake Turbulence Speed Control

visual approach to

- s instructed by runway AND Pilot Pilot ATC, maintain visual
- s needed by pilot separation from traffic

THE ICAO VISUAL APPROACH

The ICAO provisions for Visual Approaches are as follows:

ICAO DOC 4444 - PANSATM:

“6.5.3.1 Subject to the conditions in 6.5.3.3, clearance for an IFR flight to execute a visual approach may be requested by a flight crew or initiated by the controller. In the latter case, the concurrence of the flight crew shall be required.”

“6.5.3.3 An IFR flight may be cleared to execute a visual approach provided the pilot can maintain visual reference to the terrain and:

- a) the reported ceiling is at or above the level of the beginning of the initial approach segment for the aircraft so cleared; or
- b) the pilot reports at the level of the beginning of the initial approach segment or at any time during the instrument approach procedure that the meteorological conditions are such that with reasonable assurance a visual approach and landing can be completed.”

From the PANSATM text above, it can be seen that the ATC may initiate the Visual Approach, but agreement shall be sought from the pilot.

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The radiotelephony procedures associated with the ATC initiating the Visual Approach are also published in the PANSATM:

“12.3.3.2 APPROACH INSTRUCTIONS

... to request if a pilot is able to accept a visual approach

... ADVISE ABLE TO ACCEPT VISUAL APPROACH RUNWAY (number);”

It is clear from the above text that the ATC-initiated Visual Approach request is unambiguous, and a very clear path exists for pilots to simply state ‘UNABLE’.

THE USA VISUAL APPROACH

The FAA regulations for Visual Approaches can be found in the FAA Order JO 7110.65

FAA ORDER JO 7110.65, Para 7-4-3, CLEARANCE FOR VISUAL APPROACH.

“ARTCCs and approach controls may clear aircraft for visual approaches using the following procedures:

a. Controllers may initiate, or pilots may request, a visual approach even when an aircraft is being vectored for a n instrument approach and the pilot subsequently reports:

- The airport or the runway in sight at airports with operating control towers.
- The airport in sight at airports without a control tower.

a. Resolve potential conflicts with all other aircraft, advise an overtaking aircraft of the distance to the preceding aircraft and speed difference, and ensure that weather conditions at the airport are VFR or that the pilot has been informed that weather is not available for the destination airport. Upon pilot request, advise the pilot of the frequency to receive weather information where AWOS/ASOS is available.

b. Clear an aircraft for a visual approach when:

- The aircraft is number one in the approach sequence, or
- At locations with an operating control tower, the aircraft is to follow a preceding aircraft and the pilot reports the preceding aircraft in sight and is instructed to follow it, or

NOTE

The pilot need not report the airport/runway in sight.

- At locations with an operating control tower, the pilot reports the airport or runway in sight but not the preceding aircraft. Radar separation must be maintained until visual separation is provided.”

From the above text it can be seen that, provided weather conditions are suitable and the Tower is manned, if a pilot reports to the ATC that the preceding aircraft is in sight, then the ATC may clear the aircraft for a Visual Approach, without the pilot ever having requested or agreed to a Visual Approach.

Therefore, whereas in ICAO States the ATC would ask the pilot to “advise able to accept Visual Approach runway(number)”, the ATC in the USA would transmit something along the lines of “report the aircraft on your 10 o’clock 3nm in sight”.

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The moment the pilot reports the aircraft in sight, the ATC may clear that aircraft for the Visual Approach.

This is where foreign operators may find themselves in a difficult predicament. Do they now declare that they're "unable", and risk being removed from the approach sequence (which is likely as the separation would be based on the Visual Approach), or do they

continue the approach? There are several considerations to be aware of with either choice...

CONSIDERATIONS

The major considerations are Separation, Speed Control and Wake Turbulence.

Separation

For successive Visual Approaches, ICAO and FAA are aligned - Once the pilot accepts a Visual Approach the ATC is no longer responsible for separation. As reported in the FAA SAFO 21005, "Visual Approaches are used to expedite traffic flow". This is achieved by allowing a reduction of IFR Separation Standards, as the pilot is accepting the responsibility for visual separation. Many airports in the USA also have closely-spaced parallel approaches and therefore independent parallel operations are not possible, necessitating Visual Approaches in order to manage separation from traffic on parallel approaches if maximum throughput is to be achieved.

There are two points to note in the FAA regulations:

- "... At locations with an operating control tower, the pilot reports the airport or runway in sight but not the preceding aircraft. Radar separation must be maintained until visual separation is provided."
- "Visual separation is not authorized when the lead aircraft is a super."

There is also an important difference in ICAO and FAA procedures that may result in separation being eroded - Speed Control.

Speed Control

From ICAO DOC 4444 - PANSATM, Section 4.6 HORIZONTAL SPEED CONTROL

INSTRUCTIONS

"4.6.1.2 Speed control instructions shall remain in effect unless explicitly cancelled or amended by the controller."

"4.6.1.7 Aircraft shall be advised when a speed control restriction is no longer required."

When reviewing the ICAO text it can be seen that once ATC applies speed control to an aircraft, the speed control is to be maintained until specifically terminated by the ATC.

The FAA Speed Control regulations are found in FAA Order JO 7110.65, Para 5-7-1

"...c) At the time approach clearance or a climb via/descend via clearance is issued, previously assigned speeds must be restated if required..."

The FAA text reveals that ATC speed control in the USA terminates when the ATC clears the aircraft for the approach, unless speed control is specifically restated. This is a significant difference for non-USA operators. Unl

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s pilots are aware that the ATC has released them speed control (simply by clearing them for the approach), they may inadvertently maintain the ATC Speed Control they had been issued prior to the approach clearance. This can lead to a major reduction in separation when cleared for the Visual Approach, as ATC is no longer responsible for the separation. This could potentially lead to TCAS RAs and/or unstable approaches.

Wake Turbulence

The following text is from the FAA Order JO 7110.65, Para 2-1-19 Wake Turbulence

“...The separation minima must continue to touchdown for all IFR aircraft not making a visual approach or maintaining visual separation.”

The text shows that wake turbulence separation minima may be reduced if a pilot has accepted a Visual Approach. For an aircraft operating behind an aircraft that requires wake turbulence separation, the pilot can expect a wake turbulence cautionary advisory from the ATC when the approach clearance is received, however it is impossible for the pilot to accurately assess the position of wake turbulence. There are no tools to predict this phenomena, which is why wake turbulence separation standards were implemented. By agreeing to reduce those standards (accepting the Visual Approach), the pilot may be increasing the risk of a wake turbulence encounter.

STRATEGIES

- Awareness of the unique facets of the Visual Approach in the USA is essential.
- The pre-descent briefing should encompass the scenario of an ATC-instructed Visual Approach, with a clear strategy of accepting/rejecting the approach.
- If ‘unable’ is the strategy, be aware that the ATC may need to remove the aircraft from the approach sequence if there is insufficient separation. The ATC may try to increase the separation by taking the aircraft through the localiser, or by keeping the aircraft above the glide slope until the required separation is achieved. This may lead to an increased workload late in the approach, with the possibility of an unstable approach, but separation will at all times be maintained by the ATC. This would also be the case if the pilot chose to report the airport or runway in sight but not the preceding aircraft.
- If the strategy is to accept the Visual Approach, be aware that once the ATC has cleared the aircraft for the approach, speed control no longer applies, unless it is specifically
- restated. As separation now becomes the pilot’s responsibility it may be prudent to commence deceleration immediately in order to avoid any TCAS concerns.

A final point mentioned in the FAA SAFO 21005 - Risks Associated with Visual Approaches:

“Communicating “UNABLE” to ATC when, in the judgment of the pilot-in-command (PIC), compliance with a specific instruction, request, or clearance may reduce safety.”

REFERENCES

FAA SAFO 21005 Risks Associated with visual Approaches The US-AIM https://www.faa.gov/air_traffic/publications/atpubs/aim_html/

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ICAO DOC 4444 – PANS ATM

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