STAR - 006 V2 – December 14	Regional Guide for ATCO's

Many incidents and occurrences can be wholly or partially attributed to a lack of understanding between flight deck and ATC and vice versa. Clarity of communication is one method of mitigating against these confusions, however, a better understanding of the other's workload and capabilities is also necessary to avoid such problems. There may be a general lack of understanding amongst ATCO's of the needs of regional type aircraft during departure, arrival and approach phases of flight.

The ERA ASG has discussed recurring operational problems that highlight both poor communication and lack of understanding. This STAR outlines those subjects and provides recommendations to ATCO's which may prove beneficial in ATC training and operations.

R/T Discipline

- ✈ **Always use English and adhere to ICAO SARPS and standard phraseology** (PANS-ATM Doc 4444 Chapter 12) - avoid colloquialisms and local phrase variations and references.
- ✈ Do not assume that regular visitors to your aerodrome/airspace do not need to know certain things; treat all aircraft (pilots) the same – give all necessary information, with no short-cuts.

Stabilised Approach

Company procedures (and soon JAR OPS) demand that pilots achieve a stabilised approach in order to continue with the landing. A stabilised approach is achieved by putting the aircraft in a nominated "point-in-space" and simultaneously attaining certain criteria (+/- certain tolerances and limits) in a controlled manner and in terms of configuration, flight path and energy, such as:

- Threshold crossing speed plus a specified number of knots; note that this additional speed is not always the same, and will vary depending on weather conditions, configuration and other factors.
- Correct aircraft landing/approach configuration established for speed and weight (ie flaps and undercarriage).
- Lateral tracking established.
- Necessary control inputs are small.
- Recommended power setting established.
- Correct rate-of-descent established.
- Checklist and briefings completed.

The "point-in-space" can be defined as a certain height above touchdown (eg 1000ft) on Precision Approaches or a point such as the Final Approach Fix on Non-Precision Approaches (NPAs). Failure to achieve all of the above criteria at the predetermined height/point should require the pilot to conduct a go-around/missed approach. ATCO's should understand the requirements for pilots to attain a stabilised approach, and how their own actions can impact on this requirement, especially for NPAs.

ATIS and METARS

- ✈ Tower (aerodrome) Controllers should have up-to-date knowledge of the current ATIS.
- ✈ If a pilot reports, for example, "ATIS DELTA received" on initial contact, and the current ATIS is ECHO – pass any changes with your response.
- ✈ Where the METAR differs from the ATIS, transmit the relevant information at appropriate times, ie changes in QNH, temperature, and wind speed, direction and gusts.

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✈ **Runway contamination and friction state should be up-to-date and, known, understood and transmitted by ATC.**

Wind

Accurate landing wind information is critical whenever a crosswind or tailwind exists; regardless of magnitude because different companies, aircraft types/models and pilots have different limits.

- Tailwinds increase ground speed which impacts on: required rate of descent; controllability; landing distance required; braking efficiency; brake temperature; and undercarriage stress limits.
- Crosswinds alter the required landing technique and impact on: controllability on approach, touchdown and on the runway; approach speeds, undercarriage stress limits and braking efficiency.
- Gusts and turbulence usually require higher approach speeds and impact on: rate of descent; approach speeds; and controllability on approach, touchdown and on the runway.

✈ It is important that ATCO's understand the effectiveness, accuracy and limitations of their airport's surface wind measurement, recording and reporting system; and also any local peculiarities (topographical or urban affects on turbulence and wind strength and direction) and when these anomalies occur.

✈ Wherever possible the provision of the wind direction and speed at a height of 1000 of 1500ft on approach, especially in limiting conditions, will help pilot's decision making.

- An aircraft's and company's crosswind limits vary, depending on weather conditions, runway conditions and width (ie snow clearance, de-iced strip, brake-tested strip).
- A pilot's crosswind limit varies depending on crew composition, experience level, and familiarity with airport.
- Tailwind and gust limits also exist.
- Different airlines impose different limits even for the same aircraft type in the same conditions.

✈ ATCO's must understand that avoiding a change in runways until the maximum aerodrome crosswind/tailwind is achieved may impact negatively on some aircraft making approaches.

Speed

- **Speed is perhaps the most crucial element upon which a stabilised approach is determined.**
- Speed in the descent, initial and intermediate approach phases, right up to final approach fix will directly impact on the ability of the flight crew to achieve a stabilised approach; the speed of each approach segment impacts on the next and subsequent segments.
- There can be considerable differences in target speeds for one aircraft type between each of the approach segments. There can also be considerable differences in target speeds between different aircraft types.

✈ **ATCO's should allow for suitable deceleration before the Final Approach Fix; and when using Radar Vectoring ATCO's should make provisions for this** (especially for NPAs)**.**

✈ **ATCO's should never attempt 'speed control' beyond the FAF.**

✈ ATCO's should understand that even requests from them to "maintain high speed" before the FAF and IAF can pressurise pilots, leading to potentially unsafe conditions.

✈ When coordinating approach spacing and sequencing ATCO's should consider the typical target speeds of the different aircraft types.

✈ Approach Control Centres should ascertain typical approach speeds for the aircraft types that frequent their aerodrome.

✈ ATCO's should accept flight crew requests/statements to fly at a certain speed.

Wake Turbulence and Spacing

- Wake turbulence avoidance is predicated on the need to maintain a separation between aircraft,
- this separation is a function of both time and distance, which is also influenced by other factors

including: speed, weight and wing shape of the preceding aircraft; wind and altitude.

- Crossing and parallel traffic will also interact and therefore horizontal time/distance as well as "in-line" must be considered (ie parallel runway operations).

✈ Consideration must be given to the effect climb, descent and approach speeds **of the trailing aircraft** will have on wake separation.

✈ ATCO's must understand the conditions where wake turbulence is more likely to be encountered and where it is likely to be most severe.

✈ ATCO's should issue appropriate "CAUTION WAKE TURBULENCE" warnings.

✈ ATCO's must never let the need to maximise aerodrome operating capacity result in reduced wake separation, whether it is on approach, in the hold or on departure.

Radar Vectors and Visual Approaches

- The regular provision of radar vectors during a SID can be confusing – unless clear instructions and intentions are provided, and a definite closure achieved, the pilot can be left with the wrong concept of cleared routing and who retains the responsibility for track-keeping.

✈ Vectors should be kept to a minimum during periods of high cockpit workload – initial departure, descent, initial and intermediate approach.

- During visual approaches the provision of vectors, and range/bearing, can prevent pilots from becoming disorientated and mis-identifying the airfield. This is especially crucial at night.

✈ It should not be assumed that pilots would prefer a visual approach (some airlines ban visual approaches, again especially at night).

✈ Refrain from offering the visual approach as an option - it can encourage someone to take it, when their best choice is for an instrument approach.

✈ If a pilot requests a visual approach don't absolve good air-traffic-manship just because the pilot is now responsible for his own navigation and separation from terrain. Instead, monitor the aircraft's progress and intervene with advice as necessary – especially at night. Try asking "what visual references do you have?"

✈ Note that even with visual approaches airlines impose strict SOPs which include Stabilised Approaches as well as other operational factors.

- Some aerodromes maximise capacity by offering late swings from an instrument approach on one runway to a visual approach on a parallel runway. This may interfere with a stabilised approach and also pilots can become unsure of what missed approach procedure to fly after the swing is accepted. In this case re-programming of the FMS may not be possible.

✈ ATCO's should avoid runway swings too late, and clear instructions concerning the required missed approach should be published for such a procedure.

Local Safety Initiatives

ATC Units should arrange and participate in local safety initiatives, including regular meetings, together with airlines, and airports.