

DECISION MAKING DURING THE APPROACH

By Sébastien SELLEM

ATR Flight Safety – Accident /Incident Investigator - Type Rated ATR Pilot.



The ATR fleet has encountered serious events of intentional continuous descent below the published glide path and without confirming the visual reference. In recent cases, the go-around was initiated very late such that ground contact was made prior to a positive rate of climb being achieved.

While technology continues to develop, providing more support to flight crew, offering more opportunities for automation, this will not be a substitute for adherence to standard operational procedures and adoption of the principles of threat and error management.

1. STABILIZATION CRITERIA “FCTM”

Approaches must be stabilized (**and remain stable**):

- 1000 ft AAL in IMC conditions
- 500 ft AAL in VMC conditions
- 300 ft AAL following circle-to-land

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

- Lateral path (Loc, Radial or RNAV path) is tracked
- Landing configuration is established
- Energy management:
 - Vertical path (Glide, Altitude versus Distance or RNAV path) is tracked
 - Power setting is consistent with appropriate aircraft weight, head/tail wind component and vertical guidance requirements
 - Speed and pitch attitude are relevant to actual conditions
- Briefing and checklists are completed

2. DEVIATIONS

Small deviations are allowed if immediately called out and corrected:

Altitude during initial approach	± 100 ft
Lateral guidance on final approach segment	1 DOT deviation
Vertical path on final approach segment	1 DOT deviation or +200/-0 ft for LOC approaches
Altitude deviation at DA or MDA	0 ft
Speed	0/+10 kt

“

Respect the
stabilization
criteria

”

Small adjustments in pitch and/or heading are allowed to stay on track:

Maximum sink rate	1000 ft / minute
Maximum rate of descent adjustments	±300 ft / minute from target rate
Bank angles	no more than 15°
Localizer guidance adjustments	within heading bug width
GS guidance adjustments	within ±2° of pitch change

Please find the following link to download the FCTM stabilization policy published by the ATR Training Center.

<https://www.atractive.com/FlightOperations/Publications/BrochuresFlightOpsNotes/Pages/BrochuresFlightOpsNotes.aspx>

Highlight the key points during the arrival briefing

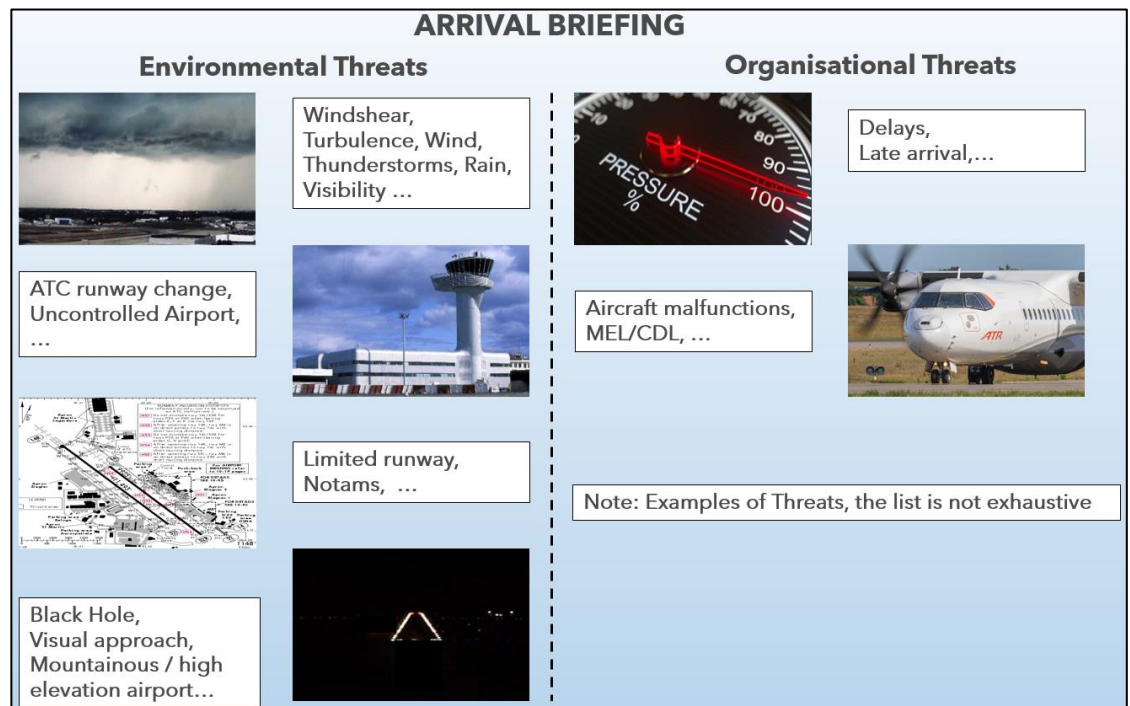
3. SITUATIONAL AWARENESS

The briefing is the opportunity to identify and **highlight the key points** which must be monitored during the approach. **Any misunderstanding must be clarified.**

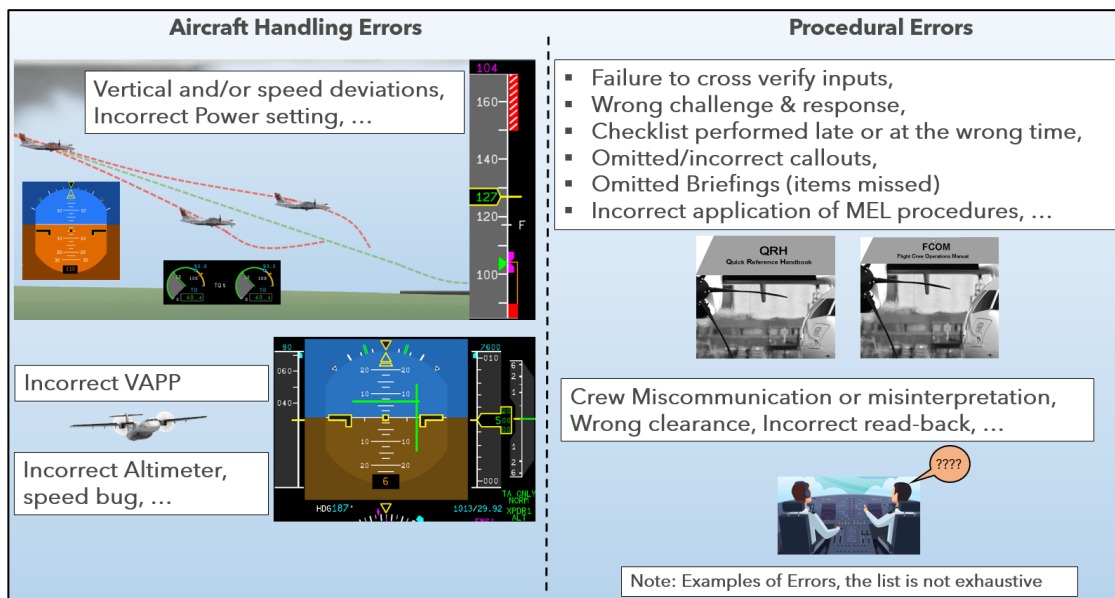
Threat & Errors Management (TEM)

Threats are defined as “events or errors that occur beyond the influence of the flight crew, increase operational complexity, and which must be managed to maintain the margins of safety”.

Identify the specific Threats to your arrival



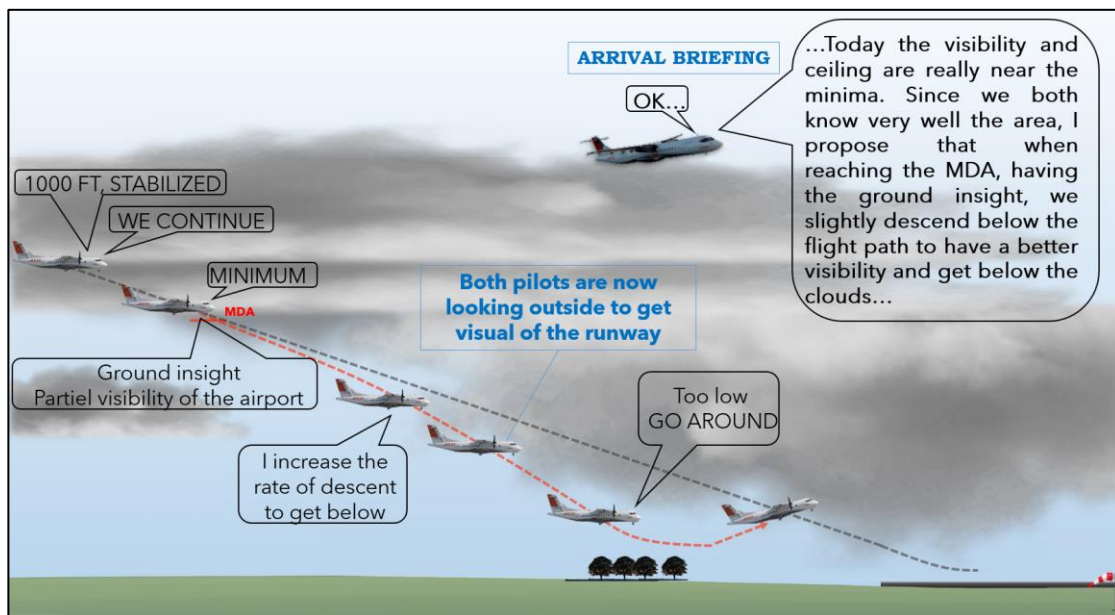
Errors are defined “actions or inactions by the flight crew that lead to deviations from organisational or flight crew intentions or expectations”.



4. IN-SERVICE FEEDBACK

As professionals pilots, we recognise the challenges that you may face. We have attempted below to illustrate serious situations where the chain of decisions has progressively reduced the safety margin. These illustrations are not specific to one event but are inspired by real feedback.

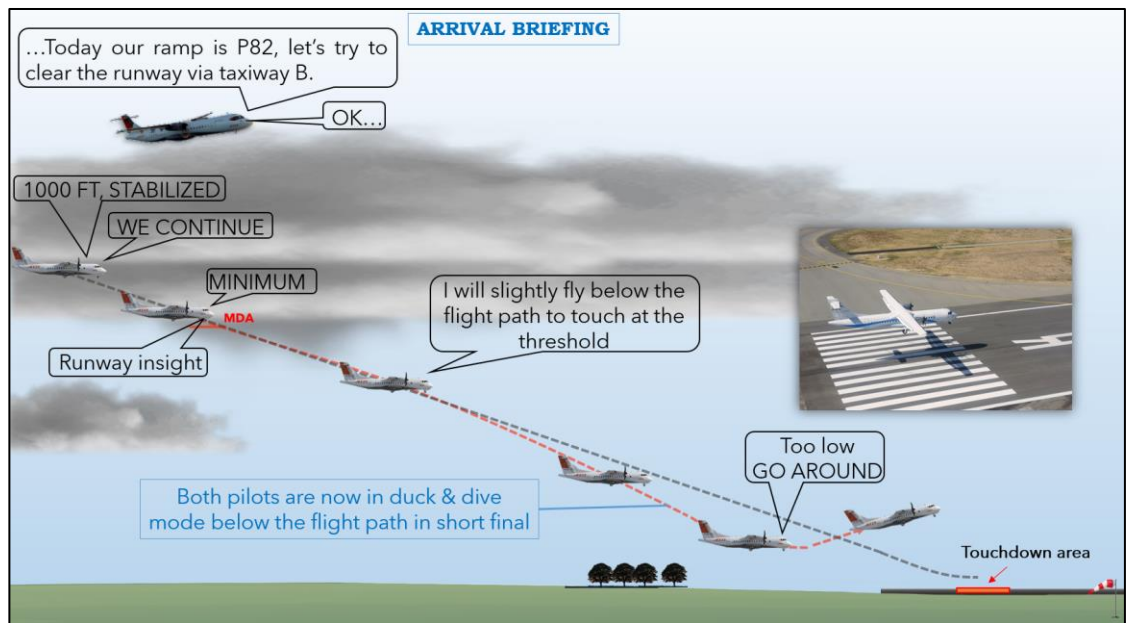
The arrival briefing is one of the keys to a safe approach



“

Do not Duck & Dive

Follow the flight path until touchdown



On a VFR airport, circle to land or visual approach, the trajectory could be difficult to monitor in the absence of visual aids. The efficiency of the monitoring depends on the strict adherence to the published traffic pattern in the Operating Manual (OM). Hence the OM should contain the precise traffic pattern (with reference points and overflying altitudes), carefully flown by the PF and monitored by the PM.

Monitor the standard traffic pattern

”

“

Reinforce the briefing in line with the TEM principle

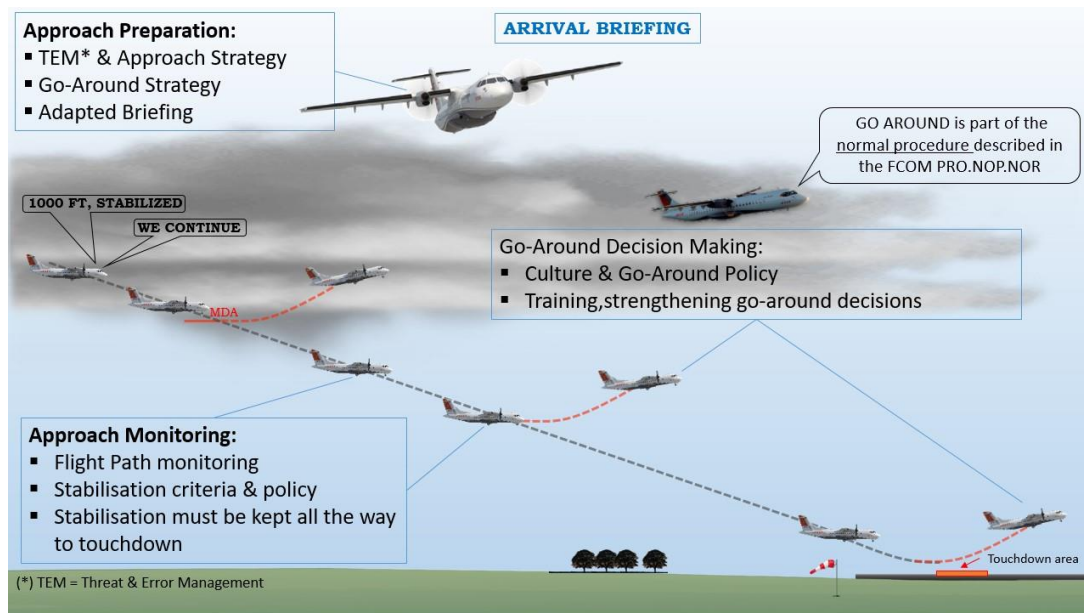
A stabilized approach must remain all the way to touchdown

5. DECISION MAKING

Depending of the situation the crew should reinforce the briefing in line with the TEM principle.

Be prepared for a go-around – What does it mean?

- Review the main task sharing (PM & PF) in a short briefing.
- Identify the Threat(s) on this specific approach. (Complex trajectory, congested airport, ...)
- Identify the Threat(s) that could destabilize the approach (low visibility, wind, ATC runway change, ...).
- Stabilized approach equals stabilized all the way to touchdown.



6. CONCLUSION

Effective decision-making on approach maintains the safety margins, especially during challenging operations.

”

To accommodate a challenging approach perform a reinforced briefing in line with the situation of the day. The briefing should include the identification & mitigation of the threats identified for the approach.

The in-service feedback highlighted:

- A stabilized approach must remain **all the way to touchdown**.
- Follow the flight path until touchdown, **do not duck & dive**.
- Be ready for a Go-around.
- Monitor the traffic pattern on VFR airport / Visual approach.