

4.7 Descent

Objective

To conduct a controlled and passenger-comfort-oriented descent from cruise altitude to approach phase while maintaining compliance with all constraints.

Descent Philosophy (VA Standard)

The descent is primarily flown with a focus on:

- **Passenger comfort (smooth vertical profile)**
 - **Pilot control over vertical path**
 - **Compliance with ATC and charted constraints**
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Descent Preparation

PF:

- Reviews arrival (STAR, constraints, transition)
- Conducts approach briefing

PM:

- Programs arrival and approach into MCDU
 - Verifies constraints and routing
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Top of Descent (TOD)

- Descent initiated prior to or at TOD
- ATC clearance must be received before descent

Descent Mode (STANDARD VA PROCEDURE)

Vertical Mode:

- **Primary Mode → SELECTED V/S (Vertical Speed)**

The descent is manually controlled to ensure:

- Smooth cabin experience
- Stable and predictable vertical profile

Managed Mode Usage:

- **Managed Descent is NOT the default**
- It is used **only when required to comply with constraints**

Examples:

- Altitude restrictions on STAR
- Complex vertical profiles
- When automation assistance is beneficial

Speed Management

- **Speed Mode → MANAGED (throughout STAR)**

The aircraft shall:

- Follow FMGS speed profile
- Respect all published constraints

After STAR (Approach Phase Transition)

- Speed may be adjusted as required:
 - ATC instructions
 - Approach setup
 - Traffic situation
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Exceptions

Selected modes may be used if:

- **ATC assigns specific:**
 - Speed
 - Descent rate
 - Altitude constraints
 - **Abnormal situations occur**
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Monitoring (PM)

- Vertical path vs constraints
 - Speed profile
 - ATC compliance
 - Energy state (too high / too fast)
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Energy Management

If aircraft is high or fast:

- Increase descent rate (V/S adjustment)
 - Use Speed Brakes as required
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Thrust Management

- Typically idle during descent
- Monitor engine parameters

Transition Level

- Set local QNH when passing transition level
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Key Principles

- Smooth descent is priority
 - Maintain control over vertical profile
 - Use automation selectively, not blindly
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Core Rule

“Vertical path is pilot-controlled - speed is aircraft-managed.”

Outcome

A properly managed descent results in:

- Passenger comfort
 - Stabilized approach conditions
 - Reduced workload in final phase
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Revision #1

Created 2026-03-23 16:03:42 UTC by Jonas

Updated 2026-03-23 16:03:59 UTC by Jonas