



**SULAYMANIYAH
INTERNATIONAL AIRPORT**

MATS

CHAPTER 17

SPEED CONTROL

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TABLE OF CONTENTS

Subjects		Page
-----		-----
17.1 Horizontal speed	17-1
17.2 Vertical speed	17-3

CHAPTER 17

SPEED CONTROL

17.1 Horizontal Speed Control

17.1.1 General

17.1.1.1 In order to facilitate a safe and orderly flow of traffic, aircraft may, be instructed to adjust speed in a specified manner. Flight crews should be given adequate notice of planned speed control.

Note 1. Application of speed control over a long period of time may affect aircraft fuel reserves.

17.1.1.2 Speed control shall not be applied to aircraft entering or established in a holding pattern. Speed adjustments should be limited to those necessary to establish and/or maintain a desired separation minimum or spacing. Instructions involving frequent changes of speed, including alternate speed increases and decreases, should be avoided.

17.1.1.3 The flight crew shall inform the ATC unit concerned if at any time they are unable to comply with a speed instruction. In such cases, the controller shall apply an alternative method to achieve the desired spacing between the aircraft concerned.

17.1.1.4 At levels at or above FL 250, speed adjustments should be expressed in multiples of 0.01 Mach; at levels below FL 250, speed adjustments should be expressed in multiples of 10 kt based on indicated airspeed (IAS).

Note 1. Mach 0.01 equals approximately 6 kt IAS at higher flight levels.

Note 2. When an aircraft is heavily loaded and at a high level, its ability to change speed may, in cases, be very limited.

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

17.1.2 Methods Of Application

- 17.1.2.1** In order to establish a desired spacing between two or more successive aircraft, the controller should first either reduce the speed of the last aircraft, or increase the speed of the lead aircraft, then adjust the speed(s) of the other aircraft in order.
- 17.1.2.2** In order to maintain a desired spacing using speed control techniques, specific speeds need to be assigned to all the aircraft concerned.

Note 1. The true airspeed (TAS) of an aircraft will decrease during descent when maintaining a constant IAS. When two descending aircraft maintain the same IAS, and the leading aircraft is at the lower level, the TAS of the leading aircraft will be lower than that of the following aircraft. The distance between the two aircraft will thus be reduced, unless a sufficient speed differential is applied. For the purpose of calculating a desired speed differential between two succeeding aircraft, 6 kt IAS per 1000 ft height difference may be used as a general rule. At levels below FL 80 the difference between IAS and TAS is negligible for speed control purposes.

Note 2. Time and distance required to achieve a desired spacing will increase with higher levels, higher speeds, and when the aircraft is in a clean configuration.

17.1.2.3 Descending and arriving aircraft

- 17.1.2.3.1** An aircraft should, when practicable, be authorized to absorb a period of notified terminal delay by cruising at a reduced speed for the latter portion of its flight.
- 17.1.2.3.2** An arriving aircraft may be instructed to maintain its “maximum speed”, “minimum clean speed”, “minimum speed”, or a specified speed.

Note. "Minimum clean speed" signifies the minimum speed at which an aircraft can be flown in a clean configuration, i.e. without deployment of lift – augmentation devices, speed brakes or landing gear.

17.1.2.3.3 Speed reductions to less than 250 kt IAS for turbojet aircraft during initial descent from cruising level should be applied only with the concurrence of the flight crew.

17.1.2.3.4 Instructions for an aircraft to simultaneously maintain a high rate of descent and reduce its speed should be avoided as such manoeuvres are normally not compatible. Any significant speed reduction during descent may require the aircraft to temporarily level off to reduce speed before continuing descent.

17.1.2.3.5 Arriving aircraft should be permitted to operate in a clean configuration for as long as possible. Below FL 150, speed reductions for turbojet aircraft to not less than 220 kt IAS, which will normally be very close to the minimum speed of turbojet aircraft in a clean configuration, may be used.

17.1.2.3.6 Only minor speed adjustments not exceeding plus/minus 20 kt IAS should be used for aircraft on intermediate and final approach.

17.1.2.3.7 Speed control should not be applied to aircraft after passing a point of 4 NM from the threshold on final approach.

Note. The flight crew has a requirement to fly a stabilized approach (airspeed and configuration) typically by 3 NM from the threshold (Doc 8168, PANS - OPS, Volume I, Part III, Section 4, Chapter 3, 3.3 refers).

17.2 Vertical Speed Control

17.2.1 General

17.2.1.1 In order to facilitate a safe and orderly flow of traffic, aircraft may be instructed to adjust rate of climb or rate of descent. Vertical speed control may be applied between two climbing aircraft or two descending aircraft in order to establish or maintain a specific vertical separation minimum.

- 17.2.1.2 Vertical speed adjustments should be limited to those necessary to establish and/or maintain a desired separation minimum. Instructions involving frequent changes of climb/descent rates should be avoided.
- 17.2.1.3 The flight crew shall inform the ATC unit concerned if unable, at any time, to comply with a specified rate of climb or descent. In such cases, the controller shall apply an alternative method to achieve an appropriate separation minimum between aircraft, without delay.
- 17.2.1.4 Aircraft shall be advised when a rate of climb/descent restriction is no longer required.

17.2.2 Methods of application

- 17.2.2.1 An aircraft may be instructed to expedite climb or descent as appropriate to or through a specified level, or may be instructed to reduce its rate of climb or rate of descent.
- 17.2.2.2 Climbing aircraft may be instructed to maintain a specified rate of climb, a rate of climb equal to or greater than a specified value or a rate of climb equal to or less than a specified value.
- 17.2.2.3 Descending aircraft may be instructed to maintain a specified rate of descent, a rate of descent equal to or greater than a specified value or a rate of descent equal to or less than a specified value.
- 17.2.2.4 In applying vertical speed control, the controller should ascertain to which level(s) climbing aircraft can sustain a specified rate of climb or, in the case of descending aircraft, the specified rate of descent which can be sustained, and shall ensure that alternative methods of maintaining separation can be applied in a timely manner, if required.

Note. Controllers need to be aware of aircraft performance characteristics and limitations in relation to a simultaneous application of horizontal and vertical speed limitations.

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