

CIVIL AVIATION AUTHORITY, PAKISTAN

Air Navigation Order

No. : 91.0008

Date : 18 May, 1999

Issue : One

EMERGENCY EVACUATION DEMONSTRATIONS

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1. Authority

- 1.1 This Air Navigation Order (ANO) is issued by the Director-General of the Civil Aviation Authority (CAA) in pursuance of the powers vested in him under rule 4 of the Civil Aviation Rules (CARs) 1994.

2. Scope

- 2.1. There are two types of evacuation demonstrations that may be required. These are:
- a) **Full scale evacuation demonstration.** This type of demonstration is normally required only during the initial aircraft certification process. It could be required if an operator wants to operate an aircraft with more passenger seats than originally certificated or if an aircraft was initially certificated as a cargo aircraft only and an operator wants to use it in a passenger configuration and at any other time as required by the Director General; and
 - b) **Partial evacuation demonstration.** This is the type that is normally used by an operator to prove that his procedures and training is sufficient to evacuate an aircraft in an emergency situation. This type of demonstration is a part of the operator certification process and is to be carried out periodically during the life of an operator AOC at intervals specified by the Director General.
- 2.2 This ANO will address only the partial demonstration as outlined in 2.1.2 above. CAA will advise an operator as to procedures to be followed and the requirements that must be satisfied in the event that a full-scale demonstration is required.
- 2.3 Rule 187, of the CARs of 1994 requires an operator to demonstrate that his "other arrangements" are adequate to secure the safe operation of the types of aircraft to be included in the certificate. It has been determined by the Director General that this activity fits into the category of "other arrangements". The primary purpose of an evacuation demonstration is to ensure that the airplane design and seating configuration will permit the safe and complete evacuation of all passengers through 50 % of the installed emergency exits within a specified time frame. The purpose of the partial evacuation demonstration is for the applicant/operator to demonstrate the

adequacy of his training programme to ensure that his cabin crew can effectively carry out the procedures for an emergency evacuation.

- 2.4 An emergency evacuation demonstration is to be required during the operational inspection phase of the certification process prior to certification, or any time deemed necessary by the Director-General, for each aircraft type, models, and seating configuration. The CAA shall make a case by case determination as to whether or not an emergency evacuation will be required in each type of aircraft to be operated where an operator wants to commence operations with more than one type of aircraft.
- 2.5 An emergency evacuation demonstration may be required when a different type of aircraft is to be inducted by an operator. This determination shall be made by CAA when an operator informs CAA about the induction plan for an additional type aircraft.

3. Effective Date

This ANO shall come into effect on 18 May, 1999.

4. Partial Evacuation Demonstration

- 4.1 The following procedures will be followed in conducting a partial emergency evacuation demonstration:
- (a) A planning meeting will be held with the operator or applicant well in advance of the demonstration in order to discuss the exact procedures to be followed and the criteria for a successful demonstration.
 - (b) The operator shall provide an aircraft of the type, model, and cabin configuration for which approval is sought, along with a qualified and current cockpit crew and two complete compliments of cabin crewmembers. The purpose requiring two complete compliments of cabin crew is so that the CAA may select, immediately prior to the demonstration, the flight attendants who will actually participate in the demonstration. This will lessen the possibility that the applicant or operator will provide extra training to those flight attendants which it knows in advance will participate in the demonstration.
 - (c) The demonstration will be conducted in darkness, either on an apron at night or in a hanger with the lights extinguished.
 - (d) During the steps leading to the commencement of the timing of the demonstration, the airplane's electrical system will be fully powered by either an external power source or the aircraft APU.
 - (e) Crewmembers will simulate complete preparation for take-off, including the execution of all checklists up to and including the take-off checklist. Engine operation will be simulated. All participants will be seated at their normal stations for take-off.

- (f) The cockpit crew will simulate the commencement of the take-off roll followed by a high speed, aborted take-off due to an engine fire or other appropriate simulated malfunction as designated by the CAA.
- (g) The evacuation of the airplane will be signalled through the failure of normal electrical power (by disconnecting the external power unit or APU). Interruption of normal power will be a clear signal to all involved that the timing of the demonstration has commenced. Outside, the aircraft's external lights (taxi lights, anti-collision lights, position and logo lights) will extinguish. Inside, normal cabin lighting will extinguish and all emergency exit lights and floor level lighting (if installed) will illuminate if functioning properly.
- (h) Immediately upon failure of the normal electrical system the flight attendants will be required to unbuckle their safety harness, leave their jump seats, ascertain which exits are usable, open the usable exits, and deploy the escape slides. In order for the demonstration to be successful, the total time, which elapse from the interruption of electrical power, until full deployment of all activated slides must not exceed 15 seconds. Slides are not considered fully deployed until they reach the ground and are inflated to a firmness, which would safely support the egress of passengers.
- (i) To monitor, time, and evaluate the demonstration, CAA personnel will be positioned in the cockpit and at each exit inside the airplane and outside the airplane at each exit. The CAA inspector who is responsible for the timing of the demonstration will be positioned outside of the airplane with a stop watch. He will commence timing when the external lights of the aircraft are extinguished. After precisely 15 seconds, he will call "time" to all participants and the demonstration will be considered complete. He will then confer with the participants team members who were stationed at the exit both inside and outside of the airplane to confer whether or not procedures were properly followed and that the slides were adequately deployed by the time 15 seconds elapsed.
- (j) Only 50 % of the exit will be used. The operator's personnel inside the airplane should know in advance which exits will be used and which exits will be rendered unusable. One method for indicating to the company immediately after the commencement of the demonstration, which exits are, unusable is to station CAA personnel with bright flashlights outside of those exits. When the exterior lights of the airplane are extinguished and the timing begins, those CAA personnel will shine their flashlights directly on the windows of the emergency exits, which are to be considered inoperable, thus simulating a fire on that side of the airplane. In accordance with their procedures, flight attendants must look through the window of an emergency exit to make sure that it is usable before opening it and deploying the escape slide for use by the passenger. In this case, if the cabin attendant approaches an exit and observes a light shinning on the window, he or she will consider it inoperative and choose an alternate exit to be opened.

- (k) The applicant/operator shall ensure strict compliance with the operator procedures and CAA requirements for the conduct of the demonstration. If the results are unsatisfactory, the applicant will be required to conduct an additional demonstration after being afforded time to re-train or otherwise correct the deficiencies.

5. Applicability

- 5.1 The operator shall ensure strict compliance and if the emergency evacuation demonstration is unsatisfactory, the operator shall be required to conduct an additional emergency evacuation demonstration(s) after re-training of the crewmembers and or the deficiencies have otherwise been corrected.



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Director General
Civil Aviation Authority
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