



**GOVERNMENT OF INDIA  
OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION  
TECHNICAL CENTRE, OPP. SAFDURJUNG AIRPORT, NEW DELHI**

**ENVIRONMENT CIRCULAR 2 OF 2010**

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**Subject: Restricted usage of Ground Engine Run-ups to reduce Airport Noise.**

**1. Introduction**

**1.1 Aircraft noise is the most significant cause of adverse community reaction related to the operation and expansion of airports both in developed and developing countries. This is expected to remain the case in most regions of the world for the foreseeable future. Reducing or limiting the effect of aircraft noise on people and communities they live in is, therefore, one of ICAO's main priorities and one of the organization's key environmental goals.**

**1.2 The noise emanating from the aircraft operations in and around an airport depends upon a number of factors including the types of aircraft using the airport, the overall number of daily take offs and landings, general operating conditions, the time of day that the aircraft operation occurs, the runway in use, weather conditions, topography, airports specific flight procedures, etc. The noise effect caused by aircraft operations are somewhat subjective and can depend on a number of factors related to the individual listener's cultural, socio-economic, psychological and physical situations and may vary from no effect to severe annoyance.**

**1.3 Today's new generation aircraft are about 75% quieter than those built 40 years ago. The aircraft manufacturers are working towards reducing the aircraft noise even more. These developments are reflected in ICAO Certification Standards and ICAO's Continuing Promotions of the implementation of noise reduction technologies.**

## **2. ICAO Initiatives**

**2.1 ICAO has been addressing the issue of aircraft noise since 1960's. The first Standard and Recommended Practices (SARP's) for aircraft noise certification were published in 1971. They are contained in Annex 16 to the Convention on International Civil Aviation (Volume-I Environmental Protection – Aircraft Noise). These standards have been updated since then to reflect improvements in technologies.**

**2.2 At the 33th Session of ICAO Assembly, in September 2001, a new policy to address aircraft noise, referred to as “Balance Approach” to noise management, was adopted. This has provided ICAO Contracting States with an internationally agreed approach for addressing aircraft noise problem in a comprehensive and economically responsive way.**

**2.3 It is ultimately the responsibility of the individual State to implement the various elements of the Balance Approach by developing appropriate solutions to the noise problem at the airports. These needs to be then reviewed with due regard to ICAO provision and policies, while recognizing that States have relevant legal obligations, existing agreements, current laws and established policies on noise management which may influence the way they implement the balance approach. The Balance Approach guidance is contained in the “Guidance on the Balance Approach to aircraft Noise Management” (Doc 9829).**

## **3. Strategic Objectives of DGCA**

**In line with ICAO's mandate to reduce or minimize aircraft noise through a established noise management programme, DGCA has initiated a proactive role to minimize the airport noise in whole. Besides reducing the noise at source, emphasis is being given to reduce the airport noise by sources other than aircraft. It has been observed that ground run of aircraft engines add to the problem of the community noise in the vicinity of the airports. This circular lays down the guidelines to be followed by all concerned while carrying out ground run-ups at all domestic and international airports in the country.**

## **4. Engine Ground Run-up Restrictions**

### **4.1 General Conditions:**

**4.1.1 An engine ground run-up is defined as any engine start up not associated with a planned aircraft departure.**

**4.1.2 Before commencing any engine ground running, the Operations Duty Manager (ODM) of the concerned air lineshould be informed about such**

activities. The ODM shall be fully aware of the potential noise problems associated with engine testing. The ODM will ensure that any engine testing is carried out in an identified non-noise sensitive areas.

4.1.3 Before approving any ground running requests, the impact of the potential noise nuisance on the local community must be carefully considered by the ODM.

4.1.4 In order to minimize the impact of the engine testing, the location for an engine run shall be chosen to ensure that the noise generated during such run-ups are contained within the airport boundary only. However, the choice of the location shall depend upon weather conditions, wind directions and the level of safety associated with the airport activities at that time.

4.1.5 While carrying out the engine run-ups, utmost care shall be taken to balance the safety and operational criteria against the environmental impact of such activities.

4.1.6 From the safety point of view, a Blast Fence shall be provided at the engine run-up site to protect the vehicles and equipment from the effects of jet blast for the use of aircraft up to Code 'C' size for carrying out High Power Engine Run-ups.

4.1.7 Specific locations shall be allocated for carrying out High Power Engine Run-ups by aircraft of Code 'D' and above, if the circumstances permit.

4.1.8 All engine ground run-ups shall be carried out in the aircraft parking bay or engine-test bay (designated areas for this purpose) only. No operators shall be allowed to carry out engine ground run-up except in areas authorized by Airport Authority of India (AAI) and the operator of the airport.

4.1.9 The ground run-ups shall be fully supervised by ground staff.

4.1.10 The specific headings and run-up locations may be assigned based on prevailing wind conditions and to avoid interference with aircraft operations on active runways.

4.1.11 The engine ground run-up shall not interfere with the normal aircraft operations of the airport in any way.

4.1.12 Extended duration run-ups and high thrust run-ups for maintenance purposes shall not be permitted under any circumstances.

**4.1.13 A safety man with associated equipment must be positioned behind the aircraft to warn road traffic and during the run-up.**

**4.1.14 The operator shall be responsible for ensuring that all safety precautions against injury to persons or damage to properties, aircraft, vehicles and equipment in the vicinity.**

## **4.2 Specific Conditions:**

**4.2.1 No operators shall be allowed to carry out engine run-up more than one engine at a time. However, in case required by engine manufacturer, ground run on both the engines may be carried out simultaneously to prevent damage to the aircraft from thrust asymmetry.**

**4.2.2 The ground run-ups of jet aircraft engines shall be carried out between 0600 hrs to 2200 hrs local time. Unless there are urgent operational reasons for engine testing to be carried out, high power engine testing shall not be permitted between 0600 hrs to 2200 hrs local time. In such cases, the ground run-ups are to be carried out ground idle power setting or 80% power setting under any circumstances.**

**4.2.3 Ground run-ups of Low By Pass Ratio (LBPR) jet engines shall not be carried out between 2200hrs and 0600 hrs under any circumstances.**

**4.2.4 No operators shall be allowed to carry out engine run-up for aircraft maintenance at take-off power at any time of the day or night, unless deemed necessary as per the Maintenance Manual. In all such cases, the recommendation of engine manufacturer regarding the time duration shall be taken into consideration. Testing beyond the stipulated time duration shall be not permitted under any circumstances.**

**4.2.5 Engine run-up is not allowed at the holding position, except for short run-up tests performed immediately before take-off as part of the take-off procedure.**

**4.2.6 Engine test runs and idle checks in open air and without silencers are not allowed without prior permission from the Airport Operators.**

## **5. Engine Ground Run-up Procedures:**

**5.1 When the need for an engine test arises the aircraft operator must contact the Airport Operations Control Centre (AOCC) with a specific request giving the following details:**

- i) Airline name**
- ii) Aircraft Type**

- iii) Whether low by pass ration engine: Yes/No
- iv) Planned time of the engine test
- v) Expected duration
- vi) Maximum power setting

5.2 The AOCC must record the details and inform the ODM and Air Traffic Control (ATC) of the details.

5.3 The ODM must convey his/her decision to the AOCC, ATC and the aircraft operator.

5.4 The ODM must ensure that the engine test area Blast Fence is clear of FOD or equipment or tools.

5.5 The aircraft operator must tow the aircraft to the site and position the aircraft with the engine nozzle pointing towards the blast fence.

5.6 On conclusion of the test the aircraft operator must inform the AOCC and ATC and tow the aircraft away removing all its equipment from the run up area near the blast fence and ensuring it is sterile and Foreign Object Debris/Damage (FOD) free.

5.7 If the aircraft operator wishes to taxi the aircraft under its own power prior approval must be obtained from ATC and then the aircraft may be towed to the site before starting engines and taxiing away.

5.8 In the event of non-availability of the blast fence or test requirement by aircraft larger than code 'C', the ODM may allocate appropriate site when, circumstances permit, in co-ordination with ATC and AOCC.

5.9 When ready to start the engine run-up, the airline shall obtain start up clearance from Apron Control on the designated frequency and a listening watch shall be maintained on the same frequency throughout the engine run. The aircraft anti-collision beacons shall be activated for the entire duration of the ground engine run and Apron Control shall be intimated on completion of the engine run.

5.10 The ground crew in charge shall maintain communication with cockpit personnel and shall be able to stop the engine run immediately in case of emergency.

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