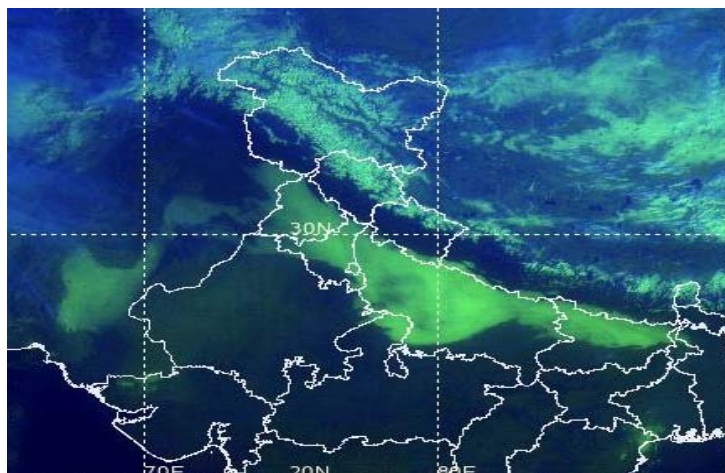




MINISTRY OF EARTH SCIENCES  
India Meteorological Department

## Fog Information System for IGI Airport



**Meteorological Office,  
New ATS Building,  
IGI Airport New Delhi-110037.  
Phone -011-25654334/4335/4273/4276  
(<http://www.imd.gov.in>)**

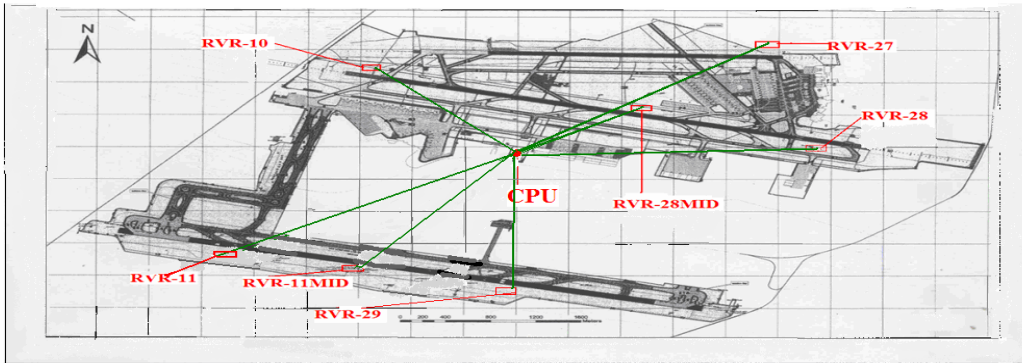
**Frequently Asked Questions (FAQ)**

**Fog:** It is defined as an obscurity in the surface layers of the atmosphere which is caused by a suspension of water droplets, with or without smoke particles, and associated with visibility less than 1000 meters.

**General Visibility:** It is the estimation of the minimum horizontal distance at the surface in all directions by an observer at which an object or light can be visible to his normal vision by referring various pre-fixed landmarks at and around the airport.

**Runway Visual Range (RVR):** It is the range over which the pilot of an aircraft on the central line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line. It is measured by RVR instruments located at the runway.

**Location Map of RVRs at various RWYS at IGI Airport**



**Smog, Haze, Mist and Fog**

Weather Events	Met. Conditions	Visibility Ranges(in meters)
Smog	Pollutions and Smoke remain suspended in the air near ground with wind remaining light but no humidity criteria	Visibility reduces but no specific range criteria
Haze	Relative humidity equals or less than 75%	2000 - 5000
Mist	Relative humidity at least 75%	1000 - 5000
Fog	Relative humidity more than 75%	Less than 1000

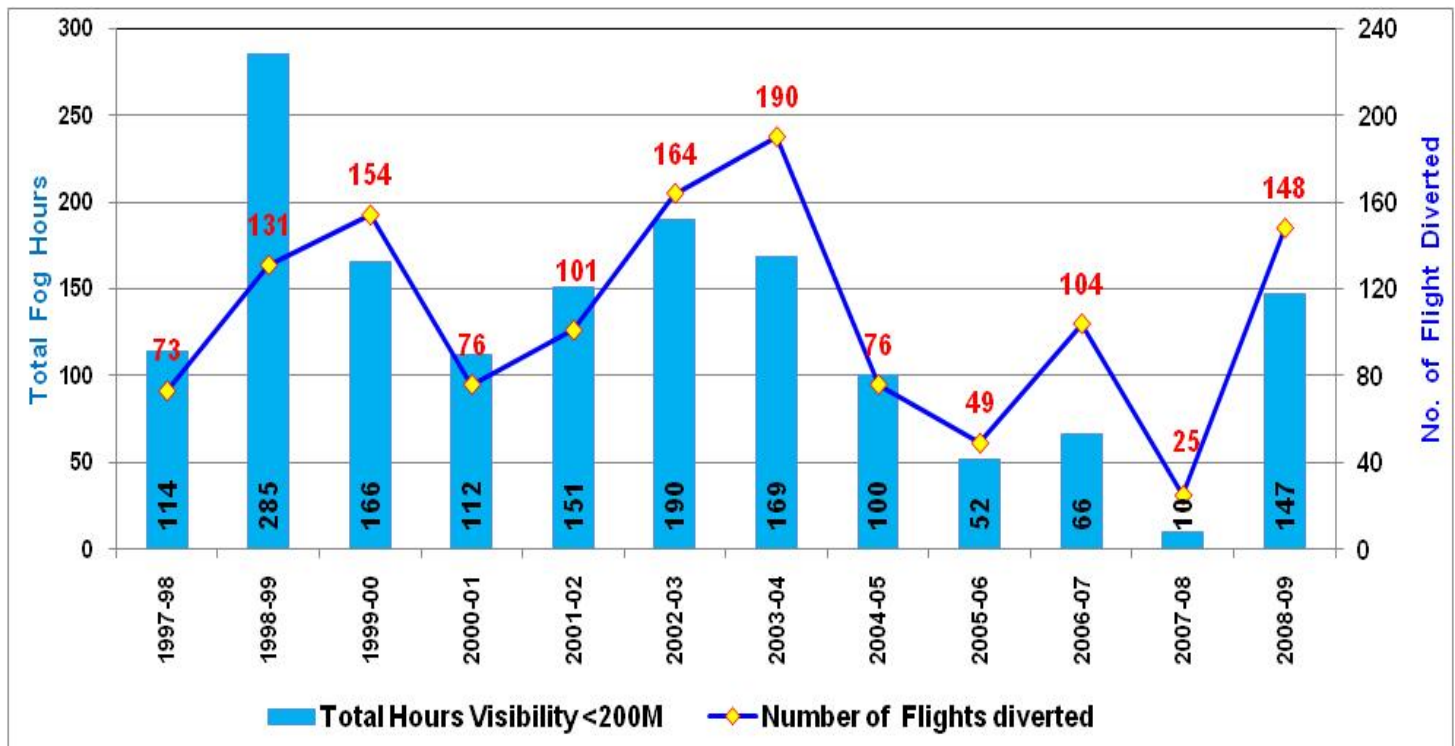
**Fog Types based on General Visibility/RVR ranges and Category (CAT) Conditions**

Fog Types	General Visibility Range (m)	RVR Range (m)	CAT-Conditions as per ICAO	Impact on Aviation
Shallow	1000-500	>550	CAT-1	Severely Disrupts Helicopter and Smaller Aircraft Service
Moderate	500-200	>350	CAT-II	
Dense	200-50	>200	CAT-1IIA	Severely Disrupts flight operations when aircrafts and/or crew are not CAT-III/A/B compliant. However, Instrumental Landing System (ILS) facilities at IGI Airport enable those aircrafts who are CAT-III/A/B compliant to land till RVR reaches 50m. No aircraft operates when RVR < 50
Very Dense	< 50	>50	CAT-III B	

## Fog at IGI Airport and its Impact on air traffic

- IGI airport is one of the major airports in the world affected by prolonged CAT-III dense fog in every fog season.
- Fog causes serious deteriorations of general visibility and RVRs at the airport.
- It causes closure of air traffic during some occasions when RVR reduces below 50m.
- It is a meso-scale weather phenomenon whose characteristics vary from location to location. Sometimes, it forms only in the airport area leaving the main city side completely fog free while at other times, its intensity varies even from one run-way to another run-way.

### Dense Fog in December & January & Flight Diverted from IGI Airport



## Fog Characteristics at IGI Airport

- IGI experiences on an average 47 days of fog in main winter months of Dec.(23 days) and Jan.(24 days) out of which dense fog occurs 16 days(6 days in Dec. and 10 days in Jan.).
- Total duration of fog and dense fog during both months is 461 hours(228 hours in Dec. and 233 hours in Jan.) and 82-hours(32 hours in Dec. and 50 hours in Jan.) respectively.
- Period of occurrence of dense fog is mainly during 10th Dec. to 31st Jan.
- The Most vulnerable timing of occurrences of CAT-III dense fog is 11 PM night to 10 AM next morning. However on some occasions it occurs as early as 8 PM at evening and persists till 11 AM of next morning severely disrupting the flight operations at the Airport.
- Occurrence of dense fog show high year to year variation.
- During last season (2008-2009), IGI Airport experienced 23 days (147 hours) of dense fog in the month of December and January, a highest after the season of 2003-2004.

## Real time Fog Monitoring and Forecasting System

- Airport Meteorological Office operates a real time round the clock Fog Monitoring, Forecasting and Dissemination System for IGI Airport from 1 Dec onwards.
- The system makes available real time fog information especially its formation, intensification and dissipation at IGI Airport with seven auto RVR instruments located at various key locations (map enclosed) of RWYs in the airport.
- It also generates Fog forecast round the clock having validity timings from two hours which is now-casting up to one day in advance with the help of Fog Models and by conventional methods e.g. analysis of synoptic data, upper air weather chart, Satellite data, etc.

## Various Real time Fog information Disseminated from Met. Office Palam Round the clock

Type of Fog Information	Timings of issue	Update Timings	Mode of Dissemination
Instant Live RVR for RWY 29-MID-RWY09 and RWY-27	Live	Instant	Through LAN/ website
Current General Visibility and all RVR	At least at each 30-minutes	At least at each 30-minutes	Through LAN/ website
Two hourly Fog forecast (Trend)	At least at each 30-minutes	At least at each 30-minutes	through website/ phone
Six hourly Fog forecast with 12 hours outlook	0530, 1130, 1730, 2330 IST	At least at each 6-hours	through website/phone
METAR of IGI Airport and alternates	At least at each 30-minutes	At least at each 30-minutes	through website/phone/AFTN

Satellite photo at front page of Very dense fog blanket covering most part of northern plains including Delhi on 1<sup>st</sup> Jan 2009 at 10am

### **For more information Contact:**

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IMD, New ATS Building  
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