# MAYDAY 2025

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## Abstract

On June 13, 2025, Air India Flight AI171 Boeing 787-8 Dreamliner, crashed shortly after takeoff from Ahmedabad, India, enroute to London . The aircraft lost control within 30 seconds of takeoff and impacted a student hostel near B.J. Medical College in Meghani Nagar. This tragedy resulted in 269 fatalities, 241 onboard atleast 28 on ground marking the deadliest aviation accident in India and first fatal crash involving a Boeing 787 Recent flight incident Air India AI171 Crash, June 12, 2025.

**Keywords:** Flight crash, Air India Flight AI171, Ahmedabad plane crash 2025, Air India crash June 12, Boeing 787 Dreamliner crash, India aviation disaster, Meghani Nagar crash site, Sardar Vallabhbhai Patel International Airport accident

## 1.Introduction

On June 12, 2025,the aviation world witnessed a devastating tragedy when Air India Flight AI171,a Boeing 787-8 Dreamliner, crashed shortly after takeoff from Sardar Vallabhai Patel International Airport in Ahmedabad, India. Bound for London Gatwick, the aircraft lost control within moments of becoming airborne and plummeted into a densely populated area, colliding with a student hostel.

The accident claimed the lives of 241 people onboard and at least 28 individuals on the ground, making it one of the deadliest air disasters in Indian history. It also marked a grim milestone as the deadliest air disaster involving a Boeing 787 Dreamliner , a model previously lauded for its advanced safety and fuel efficiency features.


**Figure 1:** Following its Mayday call, Air India 171 tragically crashed after take-off in Ahmedabad on Thursday. Here's what a Mayday call means and how it originated. (AI- generated image)

The incident has sparked widespread grief and concern , both nationally and internationally, promting a multi-agency investigating involving Indian and global aviation authorities. As the investigation unfolds, the world watches closely to understand the causes behind this unprecedented disaster and the implications it may hold for aircraft safety, regulatory oversight, and urban planning near airports.

## 2.Literature Review

### 2.1 Pre-Flight Preparations

On June 12, 2025, Air India Flight AI171 was scheduled for international service from Sardar Vallabhbhai Patel International Airport in Ahmedabad, India, to London Gatwick Airport in the United Kingdom. The aircraft assigned was a Boeing 787-8 Dreamliner, registered VT-ANB. Pre-flight preparations began in the early afternoon, with standard safety and maintenance checks conducted by technical staff. The cockpit and cabin crew, totaling 12 members, underwent routine briefing procedures. A total of 230 passengers boarded the flight, bringing the total number of onboard occupants to 242. No mechanical anomalies or irregularities were reported during ground checks, and clearance for departure was granted as per schedule.

### 2.2 Taxing and Takeoff Clearance

The aircraft commenced taxiing towards Runway 23L at approximately 13:25 IST. All communication with Air Traffic Control (ATC) remained normal, and the aircraft received takeoff clearance at 13:38 IST. Meteorological conditions were reported as favorable for departure, with clear skies and calm winds, ensuring no weather-related impediments during the takeoff roll.

### 2.3 Takeoff and Initial Climb

The Boeing 787 began its takeoff roll at 13:38 IST and successfully lifted off the runway within the standard distance. However, within approximately 20 to 30 seconds of liftoff, the aircraft displayed signs of instability. Eyewitness accounts and early flight data suggest that the aircraft experienced sudden and unexplained variations in pitch and roll during the initial climb. The flight crew made no distress call, and communication with ATC was abruptly lost. Observers on the ground reported that the aircraft banked to one side and appeared to lose altitude rapidly before descending in a nose-down position.

### 2.4 Crash Impact and Explosion

At approximately 13:39 IST, less than one minute after takeoff, the aircraft crashed into a residential hostel complex affiliated with B.J. Medical College in the Meghani Nagar area of Ahmedabad. The crash triggered a massive explosion upon impact, igniting a widespread fire that engulfed several floors of the building and adjacent structures. The force of the impact caused portions of the hostel to collapse instantly. Eyewitnesses described hearing a deafening blast followed by thick plumes of black smoke rising from the site.

### 2.5 Emergency Response and Rescue Operations

Emergency services, including the Ahmedabad Fire Brigade, police forces, and National Disaster Response Force (NDRF) units, arrived on the scene within 10 to 12 minutes of the crash. Rescue operations continued for over six hours amid intense flames, unstable debris, and risk of secondary explosions. Despite heroic efforts, most of the aircraft's occupants were found deceased upon impact or shortly thereafter. Medical teams established a triage zone nearby to treat injured civilians and hostel residents.

## 3. M ethodology

### 3.1 Casualties and Survivors

The crash resulted in the deaths of 241 individuals onboard the aircraft. Only one person, identified as 27-year-old British national Vishwash Kumar Ramesh seated in 11A, survived with critical injuries and was promptly hospitalized. On the ground, at least 28 people—mainly medical students residing in the hostel—lost their lives, and over 60 sustained varying degrees of injury. Families of the victims were notified through a coordinated international effort between Indian and British authorities.

### 3.2 National and International Reaction

The Government of India declared the incident a national tragedy, with Prime Minister Narendra Modi offering condolences and announcing financial support to victims' families. The United Kingdom also expressed sorrow, as several British nationals were onboard. Air India issued a public statement confirming the loss and expressing its commitment to support affected families and cooperate fully with investigators. Public mourning was observed in both India and the UK.


**Figure 2:** Debris of Air India flight that crashed in Ahmedabad

### 3.3 Investigation and Black Box Recovery

Within 36 hours of the crash, investigators recovered both the Cockpit Voice Recorder (CVR) and the Flight Data Recorder (FDR), commonly referred to as the aircraft's black boxes. A comprehensive investigation was immediately launched, spearheaded by the Aircraft Accident Investigation Bureau (AAIB) of India, with technical support from the U.S. National Transportation Safety Board (NTSB), the United Kingdom's Air Accidents Investigation Branch (AAIB), and aircraft manufacturer Boeing. Investigators are currently analyzing flight data to determine whether mechanical malfunction, human error, or environmental factors contributed to the crash. Particular attention is being paid to the aircraft's control systems, engine performance, recent maintenance logs, and pilot actions during the takeoff sequence.

### 3.4 Broader Implications and Safety Concerns

The crash of AI171 is historically significant as it marks the first-ever fatal accident involving a Boeing 787 Dreamliner, an aircraft previously considered among the safest in commercial aviation. In response to the tragedy, India's Directorate General of Civil Aviation (DGCA) has considered a temporary grounding of Boeing 787 aircraft in the country until preliminary investigation results are available. The incident has reignited global debates over urban planning near airport zones, aircraft certification standards, and the need for real-time in-flight emergency detection systems.

### 3.5 Ongoing Investigative Process

As of now, the official cause of the crash has not been confirmed, and a full investigation is expected to take several months. Investigators are examining every aspect of the flight, from technical failures to crew decision-making and potential structural or software faults in the aircraft. Until a final report is released, the aviation community remains on high alert, with increased scrutiny on operational safety measures across similar aircraft models globally.

The investigation into the tragic crash of Air India Flight 171 in Ahmedabad on June 12, 2025, is being led by the Aircraft Accident Investigation Bureau (AAIB), an agency under India's Ministry of Civil Aviation. The AAIB's role is to determine the root causes of aviation accidents to improve safety, without apportioning blame or liability


**Figure 3 :** Debris of Air India flight that crashed in Ahmedabad

**Initial Response and Site Assessment**

Following the crash, emergency response teams, including the National Disaster Response Force (NDRF), Border Security Force (BSF), and Army personnel, were deployed to the site.

Authorities began clearing debris and securing the area to facilitate the investigation

**Data Collection**

Investigators retrieved the aircraft's digital flight data recorder (DFDR).

The cockpit voice recorder (CVR) is still being sought to gather additional information.

Preliminary analyses suggest engine thrust issues during takeoff, with both engines showing low thrust and the aircraft only climbing to 450 feet before descen

**Expert Involvement**

Experts from the United States and the United Kingdom have joined the investigation to assist with technical analyses .

The AAIB is focusing on critical systems such as engine thrust, wing flaps, and landing gear, as well as the airline’s maintenance procedures

**Public Access to Findings**

The AAIB maintains a public portal where it publishes investigation reports and safety statistics .

While the final report for this incident is not yet available, updates and preliminary findings are being shared through media outlets and official channels.

**1. Ongoing Efforts**

1. The Directorate of Forensic Sciences in Ahmedabad is conducting a round-the-clock operation to identify victims, with 40 scientists working in three shifts.
2. Due to the severity of burns on many bodies, usable DNA is often retrievable only from bones and teeth
3. P.K. Mishra, the Principal Secretary to the Prime Minister, visited the crash site to assess the situation and review the identification process at the Forensic Science Laboratory in Gandhinagar

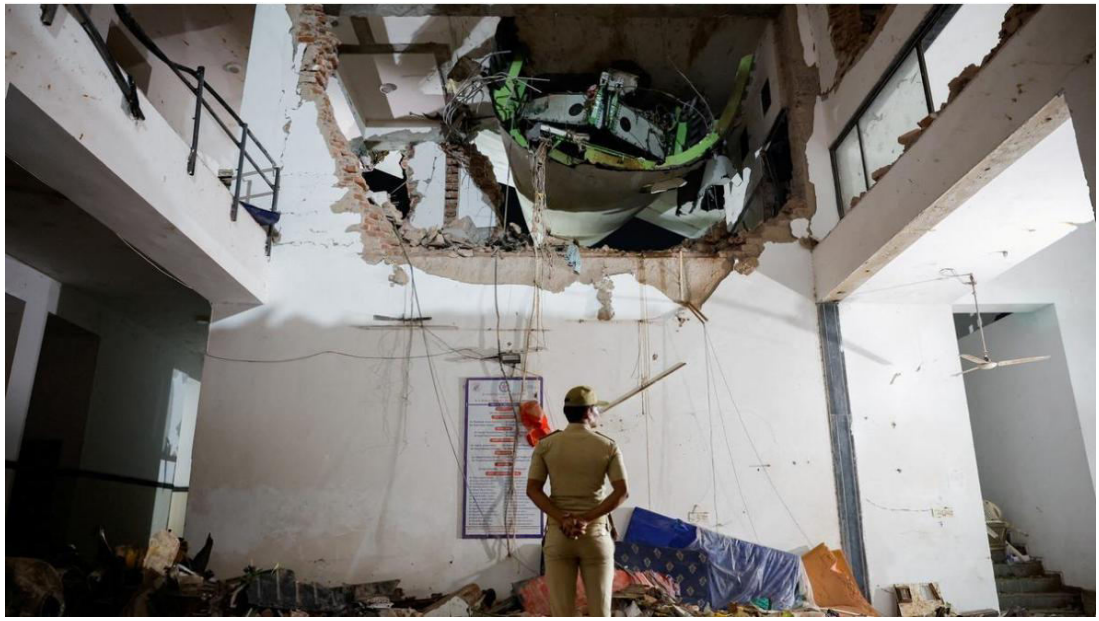

**Figure 4 :** A police officer stands in front of the wreckage of an Air India aircraft, bound for London's Gatwick Airport, which crashed during take-off from an airport in Ahmedabad, India June 12, 2025.

The crash of Air India Flight AI171 on June 12, 2025, near Ahmedabad stands as one of the most catastrophic aviation disasters in Indian history. It has profoundly shaken the aviation industry, governments, and affected communities across India and abroad. As the facts continue to unfold, this tragedy has brought to light several key themes and lessons that warrant reflection and prompt action.

### 3.6 Human Cost and Community Impact

At the heart of this tragedy is the immense human loss—270 lives lost, including passengers, crew, and innocent civilians on the ground. The emotional toll on the victims' families and the broader community is incalculable. The crash site, near a busy college campus, compounded the devastation, affecting not just those aboard but also students and residents of the Meghani Nagar area. The grief has reverberated internationally, particularly within the British-Gujarati diaspora, as many of the victims had ties to both India and the UK.

### Technical and Investigative Findings:

Early indicators point to a dual engine failure shortly after takeoff, with potential deployment of the Ram Air Turbine (RAT) —a critical emergency system that only activates during complete engine loss. These mechanical and technical failures, if confirmed, would indicate a rare but grave systems failure in a modern aircraft like the Boeing 787 Dreamliner , previously considered one of the safest wide-body aircraft.

The aircraft itself, 12 years old and reportedly maintained within regulation, is now under forensic scrutiny. Both pilots were highly experienced, which suggests that pilot error is unlikely to be the primary cause. The Directorate General of Civil Aviation (DGCA) , in collaboration with Boeing, the NTSB (USA) , and other aviation safety bodies, is conducting an extensive investigation. Their findings will be critical for determining accountability, improving safety standards, and preventing future disasters.

### 3.7 Institutional Response and Accountability

While emergency response teams, including the NDRF and Indian Army, acted swiftly, the aftermath has revealed gaps in crisis communication, victim identification, and logistical coordination. The reliance on DNA testing for identification due to the severity of the crash highlights the need for better infrastructure and preparedness for mass casualty incidents.

Air India and the Indian government have offered assistance, activated helplines, and facilitated the repatriation of remains. However, families of the deceased continue to demand transparency and accountability, especially concerning the cause and possible preventability of the crash.

### 3.8 Broader Implications for Aviation Safety

This disaster is a wake-up call for global aviation safety, especially in the context of high- density airports in rapidly growing economies. It raises critical questions about aircraft reliability, maintenance practices, pilot training for emergency scenarios, and the adequacy of regulatory oversight.

As this is the first fatal crash involving a Boeing 787, it casts a shadow over the aircraft's safety record. It also puts pressure on aviation authorities worldwide to re-evaluate safety protocols**,** reassess aircraft certification processes, and ensure airlines adhere strictly to preventive maintenance schedules.

## 4.Results and Discussions

### Incident Overview

The aircraft took off from Sardar Vallabhbhai Patel International Airport at 1:38 PM IST. Approximately five minutes into the flight, it crashed into a residential area near BJ Medical College in Meghani Nagar. The plane struck the college's dining hall, which was occupied by medical students at the time, causing significant casualties among them. The crash site was quickly secured by emergency responders, including the National Disaster Response Force (NDRF), Border Security Force (BSF), and the Indian Army .

**Figure 5:** Wreckage of the crashed Air India plane being lifted through a crane in Ahmedabad, Gujarat on June 14, 2025. | Photo Credit: VIJAY SONEJI

**Investigation & Expert Analysis**

The Directorate General of Civil Aviation (DGCA) has initiated a comprehensive investigation, supported by Boeing and international agencies such as the U.S. National Transportation Safety Board (NTSB) and the Federal Aviation Administration (FAA). Preliminary findings suggest a possible dual engine failure, with evidence indicating the deployment of the Ram Air Turbine (RAT), an emergency system that activates when engines fail .

The aircraft, registered VT-ANB, was 12 years old and had a maintenance history that is current*ly* under review. The Sabharwal pilots, Captain Sumeet and First Officer Clive Kunder,had extensive flying experience, with over 8,200 and 1,100 hours respectively.

**Documentation Scrutiny:**

There could be increased focus on the validity and accuracy of travel documents, as highlighted by the experience of Jaimin and Priya Patel who were initially denied boarding due to documentation issues.

**Figure 6:** A day after the deadly plane crash in Ahmedabad, the bodies of six victims were handed over to their families after identification on Friday, police said.

**Broader Implications**

This incident marks the first fatal crash involving a Boeing 787 Dreamliner, raising significant concerns about aviation safety. The crash has prompted a review of safety protocols and emergency procedures, with airlines operating in India instructed to conduct additional safety checks on their fleets, particularly Boeing 787 aircraft .

The tragedy has deeply affected communities in India and the UK, especially the British- Gujarati population. Condolences have been pouring in from around the world, and vigils and memorial services have been held across Ahmedabad to honor the victims .

**Increased Security Checks:**
The incident may lead to more stringent security checks for passengers and luggage at airports, particularly for flights departing from or arriving in India.

**Review of Airline Protocols:**

A review of Air India's safety protocols and procedures is likely, potentially impacting how the airline handles passenger boarding and documentation.

**Potential Impact on Tourism:**

While not directly a border issue, increased safety concerns could affect tourism to and from India, impacting international travel and border crossings.

## 5.Conclusions

In conclusion, the crash of Flight AI171 is not just an aviation accident, it is a multidimensional tragedy involving human suffering, technical failures, regulatory questions, and systemic challenges. As investigations progress, what matters most now is:

1. Justice and closure for the victims' families.
2. Transparent communication from all responsible agencies.
3. Implementation of robust safety reforms.
4. International collaboration to ensure that such tragedies never recur.
5. This incident must serve as a painful but necessary turning point for Indian aviation and global air safety standards. The memory of those lost should guide future vigilance and reform, transforming sorrow into lasting change.

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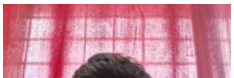

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