

Lives Lost in the Skies: The Dark Side of Aviation Industry in India

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ABSTRACT

India's aviation industry has become one of the fastest-growing markets in the world. Flying is no longer just for the elite; even middle class people are able to afford air travel with better regional connectivity. Airlines like IndiGo, Air India and Vistara collaborate with the UDAN (Ude Desh ka Aam Nagrik) scheme making air travel more accessible especially in smaller towns. While the industry still faces challenges like high fuel prices, hard-hitting competition, geopolitical tensions, cyber security risks and economic uncertainties yet, there are still safety gaps that put lives at danger especially in areas where infrastructures are outdated, improper plane maintenance, crews not getting enough training on safety regulations. Even though global organizations like the International Civil Aviation Organization (ICAO) have laid out safety standards, not all countries or airlines are able to meet them consistently. In many lower-income countries, limited budgets and resources make it even harder to pace with wide-reaching security canons resulting in accidents impacting deep emotional trauma and financial hardship. Countries with poor aviation safety records may lose tourism business, higher operational cost, limited foreign investment, decreased carriers, damage of Nation's reputation and economic slowdown (GDP). To close these gaps, towards aviation safety is required by building stronger global partnerships with International Aviation Bodies ICAO, EASA, FAA, and IATA for technical support, training, and audits, modernize equipment and infrastructure and strengthen regulatory oversight and compliance to predict and prevent risks. These equipped applications could turn India into a major global aviation hub.

Keywords: Aviation Industry, Safety Gaps, Economic Slowdown and Global Partnerships.

1. INTRODUCTION

Indian aviation traces its roots back to 18 February 1911, when the first commercial flight took off from Allahabad to Naini, covering a distance of just 9.7 kilometres piloted by French aviator Henri Pequet, the aircraft carried 6,500 letters. In 1932, J.R.D. Tata piloted the first airmail flight from Karachi to Bombay, laying the foundation for Tata Airlines, which later became Air India, the national carrier. The Indian aviation industry is broadly categorized into Civil and Military Aviation. Civil aviation includes commercial airlines, cargo carriers, private charters or jets and helicopters. The Civil Aviation sector is overseen by the Directorate General of Civil Aviation (DGCA) while the Airports Authority of India (AAI) manages most of the country's airports. India currently has over 100 operational airports, including 33 international, 11 limited International and the government has ambitious plans to increase that number to 220 by 2025. Major airports in cities like Delhi, Mumbai, Bengaluru, and Hyderabad have become bustling hubs handling millions of passengers and tons of cargo every year. These airports are not just transit points, they are economic engines, creating jobs and attracting investment. Military Aviation on the other hand is the domain of the Indian Air Force, the Army Aviation Corps, the Navy's Air Wing and the Coast Guard Aviation units.

A major turning point came in the 1990s, when India liberalized its economy opened a gateway for private players allowing low-cost carriers like IndiGo, SpiceJet, and Go First offering affordable fares and expanding routes to smaller cities with drastic surge in passenger numbers. The government launched the UDAN scheme in 2016 meaning "Let the Common Citizen Fly". UDAN aims to boost regional connectivity for under served or remote regions by subsidizing flights to smaller airports to enhance inclusive and economic integration.

The Cargo segment is booming especially with the rise of e-commerce. India's Maintenance, Repair, and Overhaul (MRO) sector is also gaining momentum with the government offering incentives to attract global players and reduce reliance on foreign facilities. By 2027, the aviation sector is expected to attract over \$25 billion in investment, driven by fleet expansion, airport upgrades and new technologies. The Indian aviation industry faces numerous defies. Indian airlines operate on razor-thin margins often hit hard by high fuel prices, intense competition, infrastructure bottlenecks and regulatory complexities. Several carriers, including Jet Airways and Go First have faced financial

turbulence or shut down altogether. Infrastructure at major airports is stretched, and delays are common. However, the government is actively working to address these issues by privatizing airports under the National Monetization Pipeline, easing foreign investment rules and pushing for digital transformation.

Between 2003 and 2010 this was the golden era for low-cost carriers like IndiGo and SpiceJet, which took off in a big way for millions who had never flown before. In 2016, the government launched the UDAN scheme which was a bold move to connect smaller towns. The COVID-19 pandemic grounded planes, emptied airports, and brought the industry to a near standstill from 2020 to 2022. Indian aviation bounced back faster. By 2024, India had soared to new heights becoming the third-largest domestic aviation market in the world trailing only behind the United States and China.

Sustainability is another growing concern. Aviation is a major contributor to carbon emissions, and India is taking steps to green its skies. Airports like Delhi and Hyderabad have achieved carbon-neutral status, and there is a growing interest in electric and hybrid aircraft. The sector is also embracing digital innovation, with biometric boarding, AI-powered air traffic control and smart baggage systems becoming more common. Meanwhile, drones and Urban Air Mobility (UAM) solutions are on the horizon, promising to revolutionize everything from last-mile delivery to emergency response.

India is well-positioned to become a global aviation hub connecting Asia, Africa, and Europe through strategic geographic positioning and robust infrastructure. Passenger traffic is expected to cross one billion annually by 2040. The government envisions building more developing regional aircraft manufacturing, expanding international routes and fostering innovation through public-private partnerships.

1.1.FAMOUS CASE STUDIES

- ❖ The Concorde Disaster – Air France Flight 4590 (2000): The Concorde was once the crown jewel of aviation an engineering marvel that could fly passengers from Paris to New York in under four hours. But on July 25, 2000, that legacy was shattered. Just moments after take-off from Charles de Gaulle Airport, a piece of metal on the runway punctured a tire, sending debris into the fuel tank and igniting a fire. The aircraft lost control and crashed into a hotel, killing all 109 people on board and 4 on the ground. The

crash not only grounded the Concorde fleet but also marked the beginning of the end for commercial supersonic travel. It was a stark reminder that even the most advanced technology is not immune to tragedy.

- ❖ **Mangalore Air Crash – Air India Express Flight 812 (2010):** On the morning of May 22, 2010, a routine flight from Dubai to Mangalore ended in catastrophe. As the Boeing 737-800 approached Mangalore's table top runway, the aircraft overshot the landing strip and crashed into a gorge, bursting into flames. Of the 166 people on board, only 8 survived. The investigation pointed to pilot fatigue and a delayed decision to abort the landing as key factors. The crash led to urgent calls for improved pilot training, better fatigue management, and stricter safety protocols at airports with difficult terrain.
- ❖ **The Boeing 737 MAX Tragedies (2018 & 2019) -** One of the darkest chapters in modern aviation, two brand-new Boeing 737 MAX aircraft crashed first in Indonesia with Lion Air Flight 610 in October 2018, and then in Ethiopia with Ethiopian Airlines Flight 302 in March 2019. Both flights ended in heartbreak just minutes after take-off, claiming the lives of 346 people, including children, families, and crew members. A software system known as MCAS, designed to prevent the plane from stalling, repeatedly forced the nose of the aircraft downward due to faulty sensor data leaving pilots with little time to respond. These tragedies not only exposed serious flaws in Boeing's design and safety culture but also raised troubling questions about regulatory oversight. The global aviation community responded by grounding the entire 737 MAX fleet for nearly two years, prompting a massive overhaul in how aircraft are certified and how safety is prioritized over profit.
- ❖ **Air India Express Flight 1344 – Kozhikode Crash (2020):** In August 2020, an Air India Express flight carrying Indian citizens home from Dubai as part of the Vande Bharat repatriation mission attempted to land at Kozhikode's table top runway. The weather was challenging heavy rain, low visibility and a slick runway. As the aircraft touched down, it skidded off the edge of the elevated runway, broke apart and plunged into a valley. The crash killed 21 people, including both pilots and left over 100 injured. The tragedy was a sobering reminder of the risks associated with table top airports where even a small miscalculation can have devastating consequences. It sparked renewed discussions about runway safety, pilot decision-making in adverse weather and the need for better infrastructure at challenging airports.
- ❖ **On June 12, 2025, Air India Flight AI-171, a Boeing 787 Dreamliner bound for London,** went down near Ahmedabad, crashing into a student hostel at B.J. Medical College. In

less than a minute, 241 lives were lost aboard the aircraft, along with 19 people on the ground marking India's deadliest aviation disaster in decades. One passenger miraculously survived. The lone survivor seated near the rear escaped through a fractured emergency exit. The pilots had issued a mayday. Investigators are working urgently looking into possible fuel contamination, engine failure, or system faults. With help from international safety agencies and both black boxes recovered.

2. INTENTIONAL AVIATION DEFECTS IN INDIA

The problems in aviation are imagined to be unexpected technical faults, aging equipment, or human error. But there are intentional defects that does not happen by accident, but are caused by deliberate decisions, shortcuts, or corruption.

- ✚ Using Fake or Substandard Parts: Some companies knowingly use low-quality or even counterfeit components in aircraft like uncertified bolts, poorly bonded composite materials - cheap wiring, incorrect installation of parts or reused metal. These parts may look fine but can fail under stress. Even more disturbing, some maintenance workers are aware of these issues but are forced to stay quiet. Shockingly, some operators import second-hand or used parts illegally, passing them off as new or certified components. Example: Hindustan Aeronautics Limited Spares Controversy.
- ✚ Skipping Maintenance and Faking Reports: Aircraft need regular, detailed maintenance to stay airworthy. But in some cases, that maintenance is either rushed, skipped, or not done at all. To cover it up, false entries are made in maintenance records, making everything look normal. In India, there have been flights that took off despite known technical issues from faulty landing gear to outdated navigation software. Examples of flying with a known malfunction - Air India Flight AI-819 (Delhi - Vadodara, June 14, 2025) and falsifying maintenance records - Airbus A320 planes (registration VT-ATD) in March 2025.
- ✚ Corrupt Defence Deals – One of the most famous aviation scams in India involved the purchase of 12 luxury helicopters for India's top officials, including the Prime Minister and President from the Italian company Agusta Westland. The deal valued at around €560 million. Investigations revealed that large kickbacks and bribes were paid to Indian officials and middlemen to secure the contract.
- ✚ Design Shortcuts Under Pressure: Building an aircraft is complex, time-consuming, and expensive. But when manufacturers face pressure to deliver quickly or under budget, they

may cut corners on safety. Sometimes known design flaws are ignored or left unaddressed to avoid delays. Example: Boeing 737 MAX tragedy - a case where safety software problems weren't fully disclosed.

- ✚ Pushing Pilots to Fly Unsafe Planes: Pilots may be told to fly even if a plane has known issues like malfunctioning autopilot systems, faulty landing gear sensors, and intermittent engine warnings that had not been fully repaired just to keep the schedule on track. This kind of culture where speaking up is punished allows dangerous situations to persist. Example: In IndiGo pilots (2023).
- ✚ Airline Subsidy and Lease Scams: In India, smaller and regional airlines often rely on government subsidies meant to help improve air connectivity, especially to remote areas. But unfortunately, some of these airlines have been caught misusing these funds or inflating their lease and operating costs to pocket extra money. Some airlines have suddenly shut down without warning, leaving passengers stranded and employees out of work. Examples are: Air Deccan and Kingfisher Airlines (Early 2010's).

2.1.DARKSIDE OF INDIAN AVIATION INDUSTRY

The aviation industry often dazzles us with its sleek jets, globe-spanning routes, and the promise of adventure at 35,000 feet. But behind the polished image lies a side of the industry that's far less glamorous marked by quiet struggles, hidden risks, and human costs that rarely make headlines.

- ✚ Mental Health in the Cockpit: Pilots are trained to stay calm under pressure, to make split-second decisions, and to carry hundreds of lives safely through the skies. Because for them exhaustion is routine with long-haul flights, erratic schedules, and relentless jet lag take a toll on both body and mind. Many pilots spend days or weeks away from loved ones, living out of hotel rooms in unfamiliar cities. Admitting to mental health struggles can mean being grounded so many suffer in silence, afraid to speak up. The Germanwings crash in 2015 where a pilot deliberately brought down a plane is a reminder of what can happen when mental health is ignored.
- ✚ Safety Compromises & Whistle-blower Revelations: Recent whistle-blower accounts have pulled back the curtain on troubling practices within aircraft manufacturing giants like Boeing. Some insiders allege that production timelines were prioritized over proper testing and quality control - especially with models like the 787 Dreamliner. Reports of misaligned parts, faulty fasteners, and rushed inspections raise serious concerns about the

integrity of aircraft. Employees who tried to raise red flags say they were ignored, sidelined, or even threatened.

- ✚ Labour Exploitation: Cabin crew and ground staff are often underpaid and overworked; especially in budget airlines where cost-cutting is the norm. Job security is fragile meaning many are on temporary contracts, with little protection or benefits. Pay-to-fly schemes in some regions force young pilots to pay airlines for experience hours.
- ✚ Human Trafficking and Exploitation: Air travel is also tragically used as a tool for human trafficking especially in parts of the Middle East and Asia. Often women and children are transported across borders under false pretences, sometimes right in front of unsuspecting airline staff and passengers. Many victims slip through the cracks, and once they land, they may disappear into forced labour, sexual exploitation, or other forms of abuse.
- ✚ Corruption: It casts a dark shadow over Indian aviation, directly jeopardizing passenger safety. From pilots apparently bribing officials for licenses to irregularities in aircraft maintenance and procurement, bribery, embezzlement, and nepotism are rampant. Anil Gill Case 2023 was suspended and investigated for alleged corruption.
- ✚ Hidden Fees and Drip Pricing: Airlines can charge extra like checking a bag, picking a seat (especially a window or one with legroom). Some budget airlines go further, charging for airport check-in or printing the boarding pass. Even taxes and fuel surcharges might not be shown upfront. These add-ons can bump up by 20-50%.
- ✚ Ticketing fraud in the aviation industry is a growing concern that affects both airlines and passengers. Scammers use Card-Not-Present (CNP) system to steal credit cards to buy tickets online, fake travel agencies or hacked flyer accounts to book flights illegally and bots create fake reservations or block seats. Sometimes, people unknowingly buy these fraudulent tickets and only find out at the airport.
- ✚ Crippled Regulatory Gaps - The aviation industry might seem tightly regulated, but there are some serious cracks in the system. Safety standards vary wildly from one country to another, and environmental rules are often ignored, especially for private jets. Cyber threats, drones, or climate concerns are highly ignored.

Fig. 1: ACCIDENTS BY STAGE OF FLIGHT

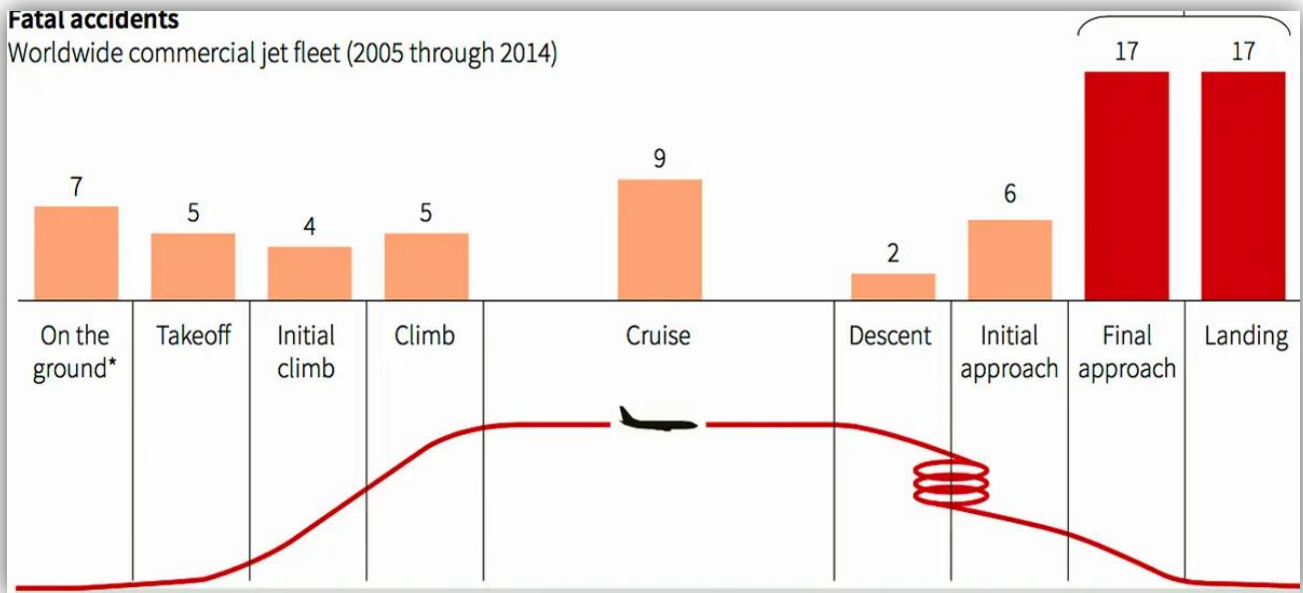


Fig. 2: VISUAL SKETCH OF AIR INDIA BOEING 787-8 DREAMLINER CRASH



Table 1: SUMMARY CHART OF AIRLINE CRASHES IN INDIA FROM 2018-2025

Date	Airline & Flight No.	Aircraft Type	Incident Type	Fatalities (Onboard + Ground)	Cause (If determined/reported)
28 June 2018	Unnamed (Test flight)	Beechcraft King Air	Crash (Ghatkopar, Mumbai)	4 (all onboard)	Spatial disorientation and engine imbalance (during bad weather)

7 August 2020	Air India Express Flight 1344	Boeing 737-800	Runway Overrun (Kozhikode)	21 (including 2 pilots)	Runway overrun due to heavy rain upon landing
12 June 2025	Air India Flight 171	Boeing 787-8 Dreamliner	Crash shortly after take-off (Ahmedabad)	241 onboard + 34 on ground = 275+	Under investigation (Suspected engine failure, bird strike, or configuration error like flaps not extended)

3. AI & FUTURE OF INDIAN AVIATION

The future of AI in Indian aviation is incredibly exciting and full of promise. From smarter check-ins to real-time flight updates, AI is already making travel smoother for passengers. Airlines like Air India, IndiGo, and Akasa Air are using AI-powered chatbots to answer questions, manage bookings, and even help with flight planning and maintenance. Behind the scenes, AI is quietly revolutionizing safety and efficiency. It can predict technical issues before they happen, help air traffic controllers manage busy skies more smoothly, and even reduce delays by optimizing flight routes. AI is facilitating the aviation industry become greener, more reliable, and more responsive to travellers' needs.

4. CONCLUSION

India's aviation industry is soaring, fuelled by a growing middle class eager to travel. Government efforts like the UDAN scheme to connect smaller cities, and major upgrades to airport infrastructure. Airlines still grapple with safety issues, delays, and financial disorder. Still, the sector has shown remarkable resilience after COVID-19 and plays a vital role in the country's economic journey. With the right mix of smart policies, tech innovation, and stronger oversight, India's aviation future looks ready for take-off.

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