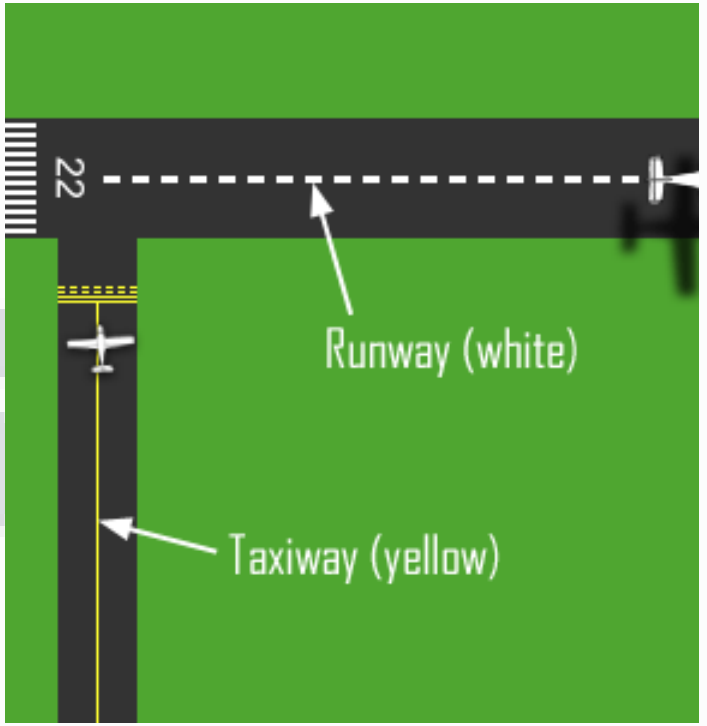
Analysis of Indian Aviation Air crash 1943-2024

Brief about Analyses:

- Data is gathered staring from 1943 to 2024.
- Its incudes aircrafts types such as commercial, trainer, private, military and government aircraft.
- Along with above categories further categories as Airplane, chartered and helicopters.
- All the accidents that caused substantial damage or aircraft destroyed are considered even the ere was no any fatal injury involved.

Terminology:

- **Incident:** it is a situation where, there is no any damage happened to plane or any fatal loss, but possibly that could have been happened.
- **Accident:** it is actual condition where aircraft gets physically damaged, sometimes destroyed and there is fatal loss or injuries.
- **Operating Phase:**
  - Takeoff/landing: when a plane is transiting from ground to sky or vice versa.
  - Enroute: when plane is in flying condition moving toward destination.
  - Maneuvering: it is phase in enroute where pilot performs certain control operations such as pitch up/down, turn left/right, bank correction etc.
  - Taxi: when plane is traveling on track which is initial phase of runway, preparing for take off.
- **Aircraft Damage:**
  - Substantial: Physical damage to plane up to certain level where it can be recovered with certain maintenance activity.
  - Destroyed: Complete damage to plane where it can not be recovered.



Key insights:

Top 3 most fatal accidents:

1/1/1978 – Mumbai. Air India's Boing aircraft.
All 213 onboard people lost their lives including pilot and crew members.

22/5/2010 – Mangalore. Air India's Boing aircraft.
All 158 onboard people lost their lives including pilot and crew members.

19/10/1988 – Ahmedabad. Air India's Boing aircraft.
213 out of 215 onboard people lost their lives.

Top 3 causes for accidents:

1. Human error
2. Technical failure
3. Weather conditions

Accidents to trainer aircrafts:

- From year 2015 to 2024 there is considerable rise in trainer aircraft accident.
- These accidents are happening mostly due to engines failure and pilot was forced to crash landing.

- 25/72 accidents caused due to human error such as miscommunication, having less knowledge about handling situations, making decisions without proper thinking of outcomes.
- 23/72 accidents caused due to technical failure such as engine shut down, faulty control system, instrument malfunctioning etc.
- 10/72 accidents caused due to bad weather such as heavy rain, wind conditions and poor visibility.
- 31/72 aircrafts crashed while landing and 19/72 aircraft met an accident while enrooting.

Indian Aviation Industry - Past Accident Analysis

Today's Aviation Industry
Key Insights

157
Operational Airports

39
Flight Operators

4.17
Lakh
Passangers Per Day

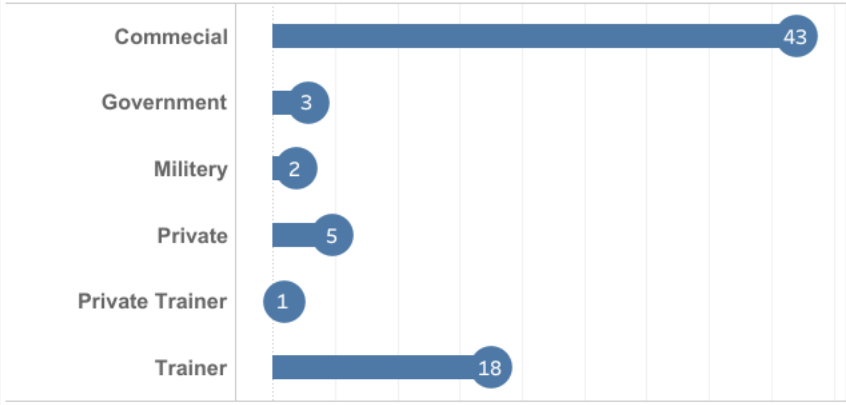
0.87
Accidents Per Billion Departures

Total Incidents	Total Onboard	Total Survivals	Survival Rate
72	2,939	1,596	54.30%

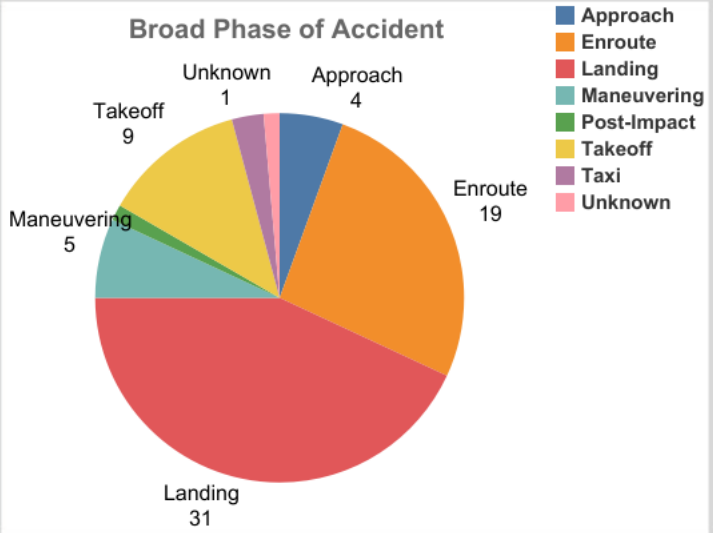
Aircraft Types	
Aircraft	31
Chartered	26
Helicopter	15

Aircraft Damage	
Destroyed	33
Substantial	39

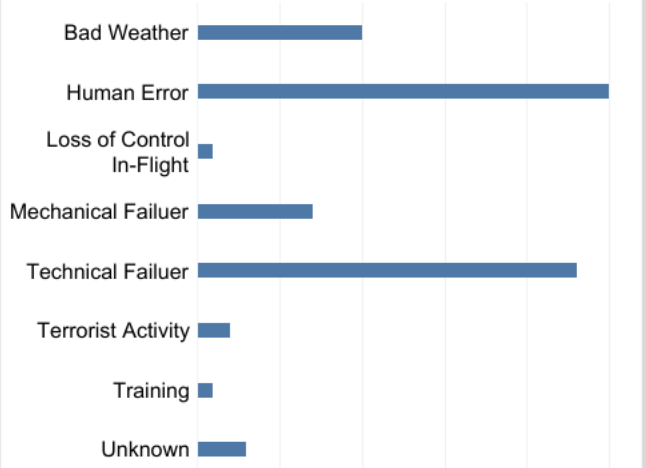
Accident Count By Flight Type



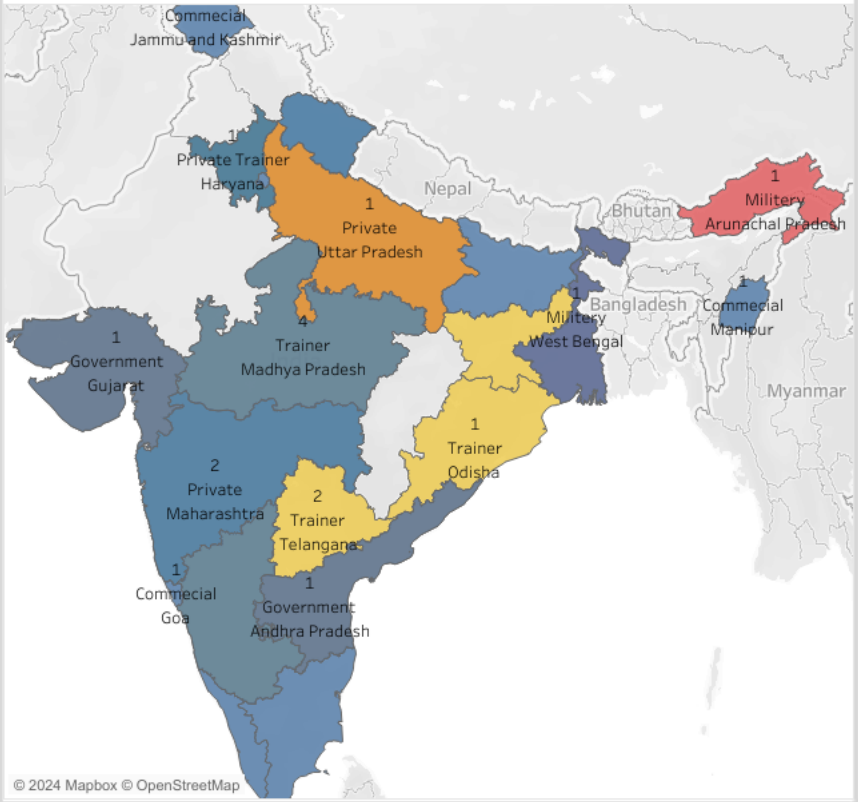
Broad Phase of Accident



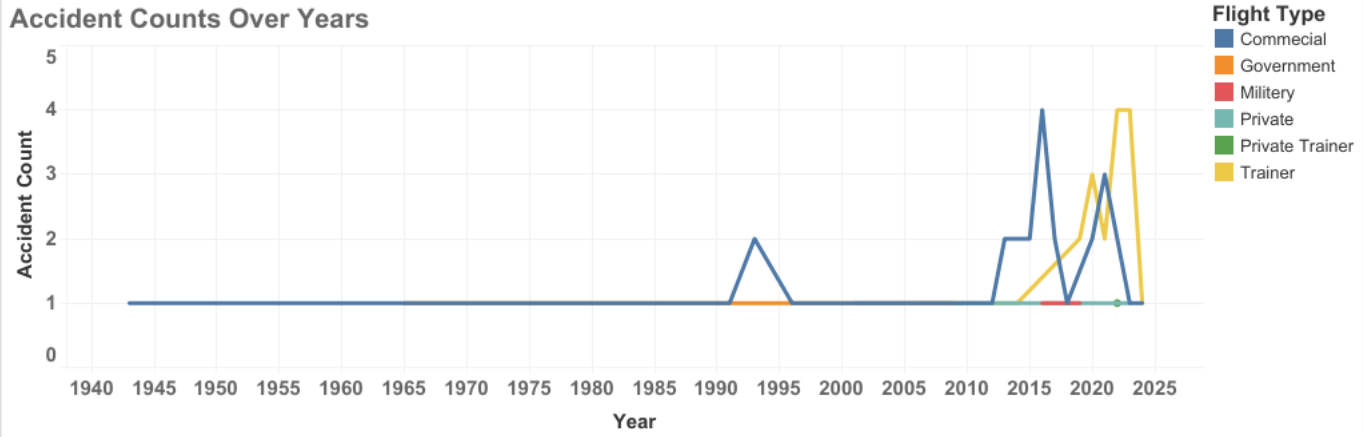
Top Causes of Accidents



Regional Map Of Accident Zones



Accident Counts Over Years



Resources:

- https://www.baaa-acro.com/
- https://aaib.gov.in/
- https://www.ndtv.com/
- https://www.dgca.gov.in/digigov-portal/?dynamicPage=AccidentReports/500005/0/viewApplicationDtlsReq
- https://timesofindia.indiatimes.com/
- https://en.wikipedia.org/wiki/List_of_accidents_and_incidents_involving_airliners_in_India