

Visualization Competition | Round 2 Submission

VIET_PiEncoded

Presents

Flying Death

AN ANALYSIS OF AIRPLANE CRASHES BETWEEN 1908-2009

Naman Arora | Chirag Huria | Hardik Sharma

naman4797@gmail.com

chiraghuria0607@gmail.com

s.hardik0175@gmail.com

THE SEATBELTS COULDN'T SAVE

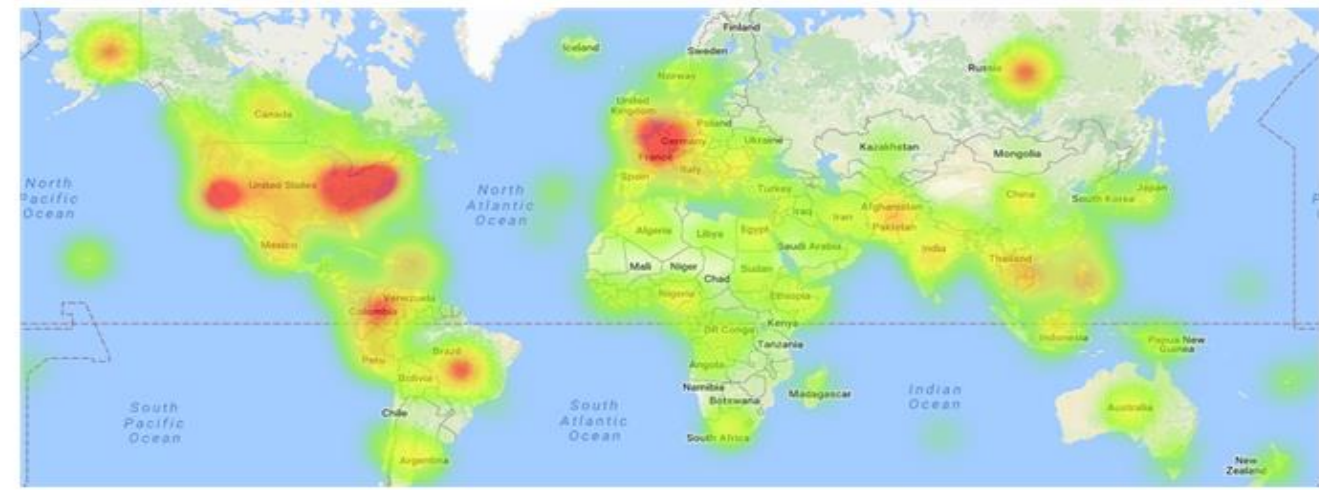
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People Involved in Airplane Accidents



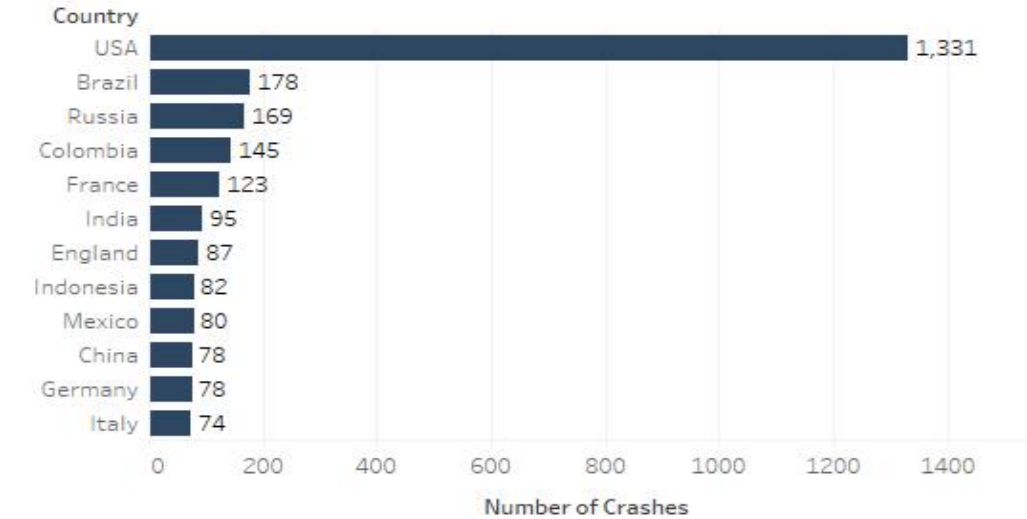
The number of people falling victim to airplane crashes has shown an upward trend, until recent years where the number has fallen.

Heat Map for Crash Locations



The highest number of crashes have occurred in the United States of America, followed by Brazil.

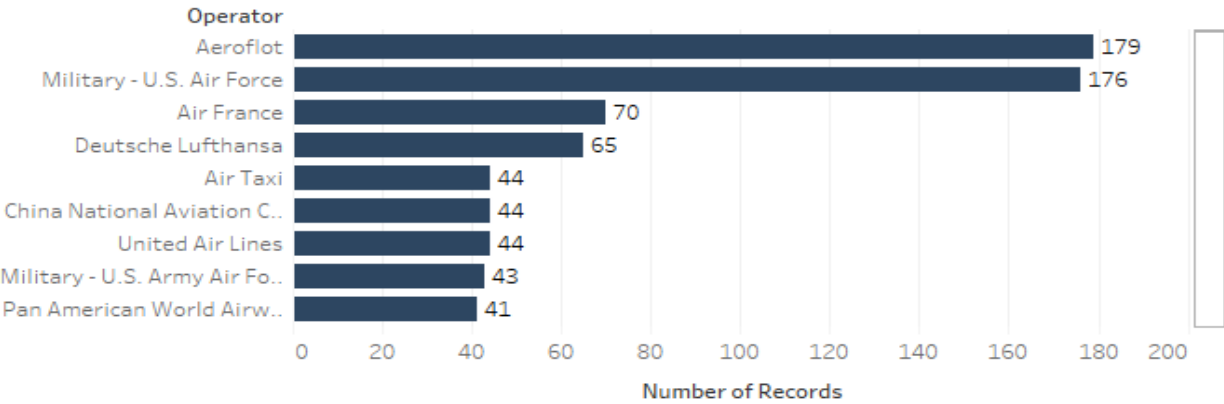
Most Affected Countries



ALAS! THEY CRASHED

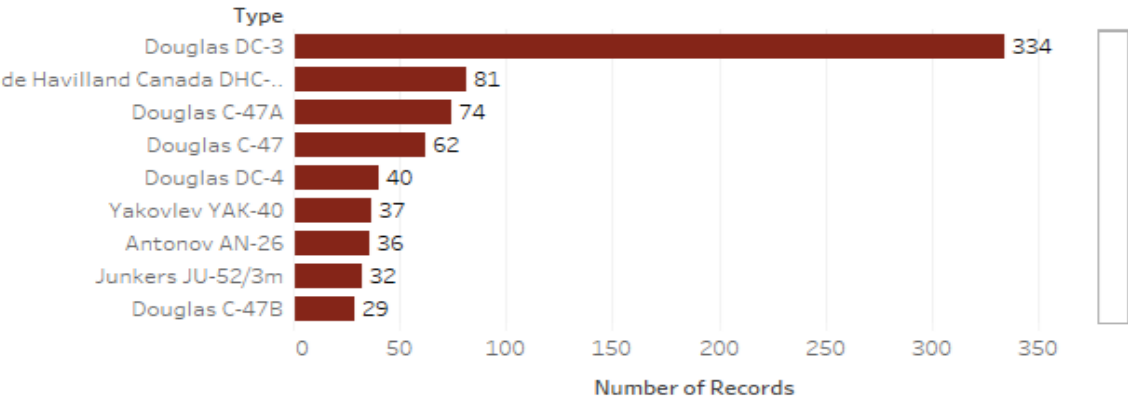
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Number of Crashes by Operators



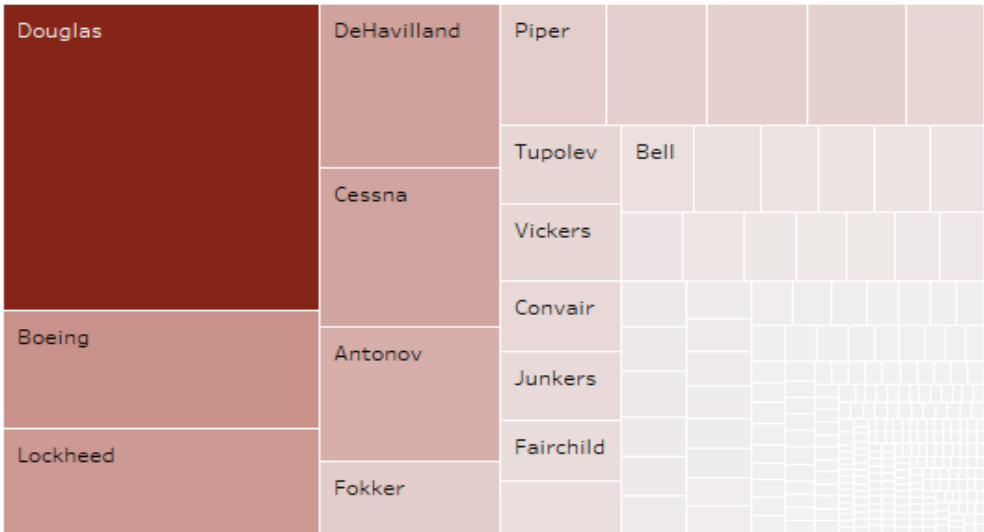
Aeroflot and U.S Air Force saw the largest number of their planes crash during the given period.

Most Crashed Airplanes



Model DC-3 by Douglas Aircrafts saw the largest number of crashes.

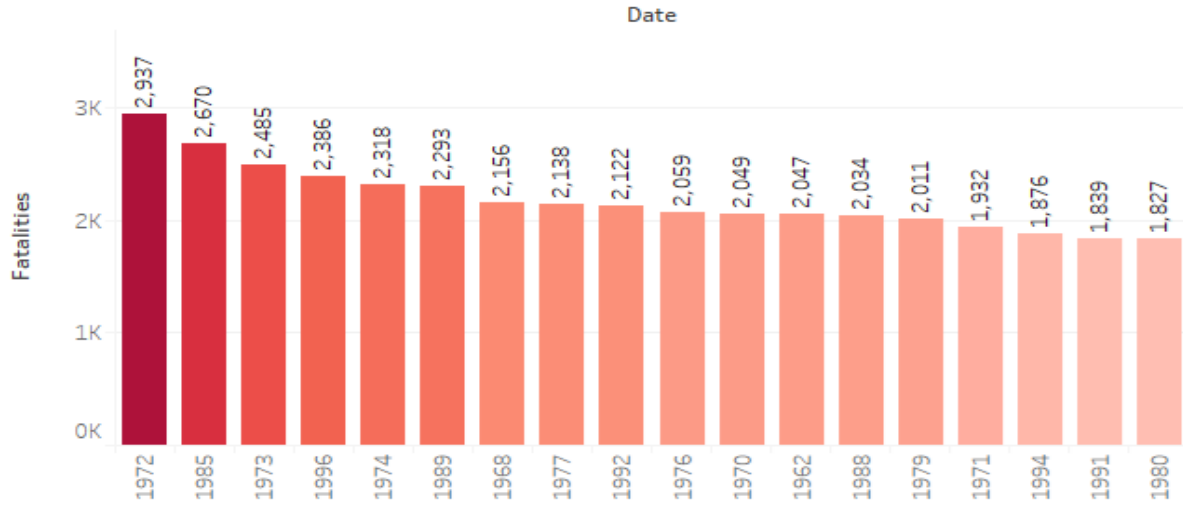
Aircraft Companies that Suffered the Most



Number of Crashes
1 979

Douglas Aircrafts suffered the largest number of
cirplane crashes, followed by Boeing and Lockheed.

Highest in-air Fatalities



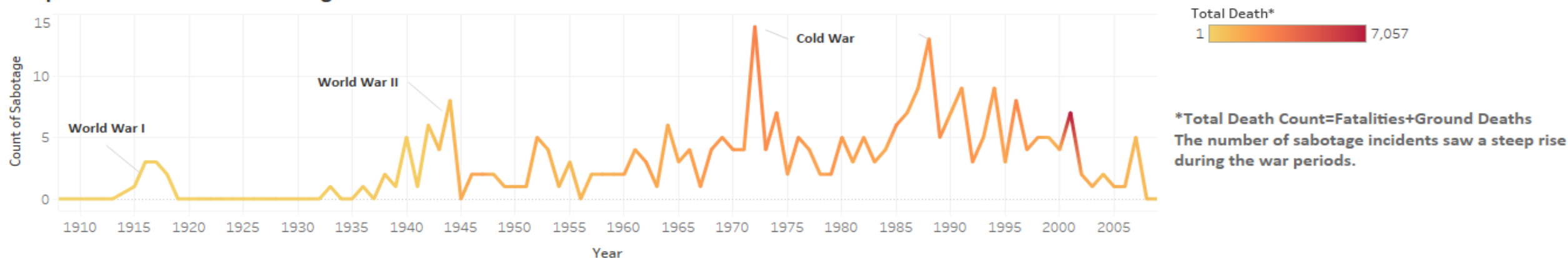
1972 saw the highest number of fatalities in airplane
crashes. The year falls in the Cold War period.

Fatalities
1,827 2,937

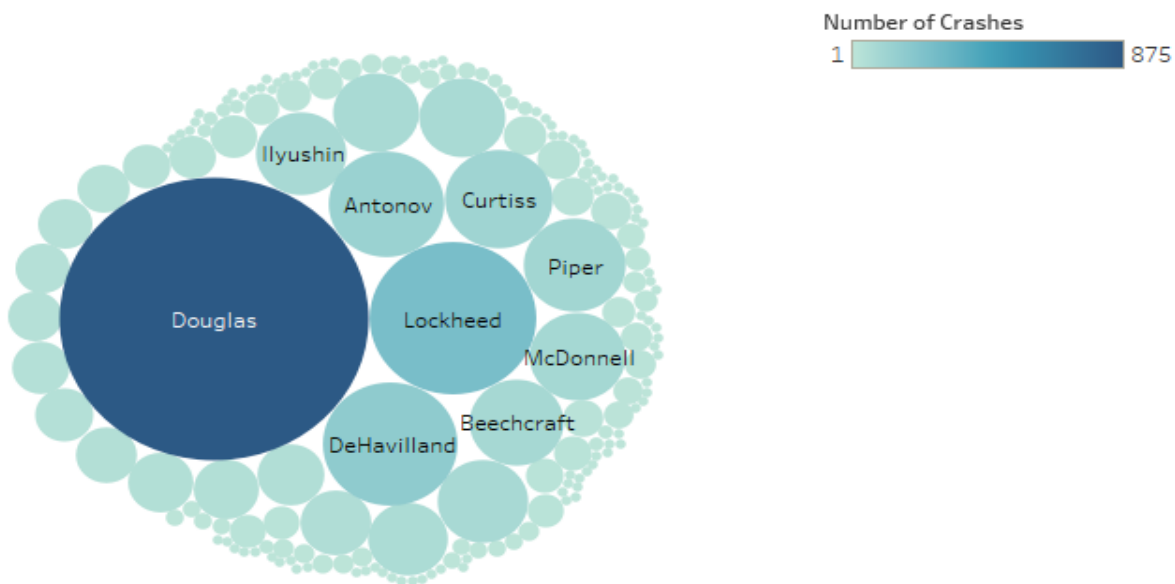
...AND THE SKY WAS PAINTED RED

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Airplane Crashes due to Sabotage



Highest Crashed Airplane Manufacturers during Wars



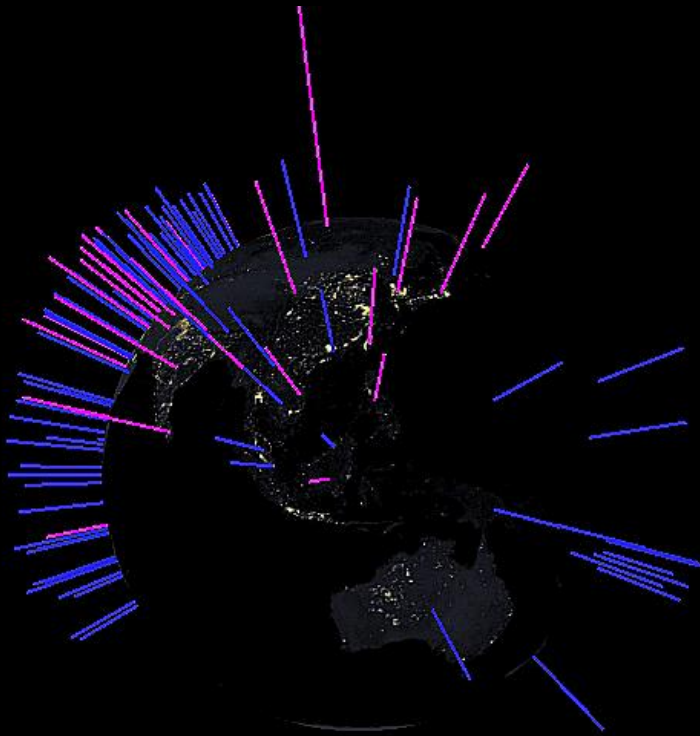
Douglas Aircrafts reigstered the highest number of crashes during wars.

Rise in Number of Accidents during Wars



There was a notable rise in air accidents during the WW1, WW2 and Cold War periods.

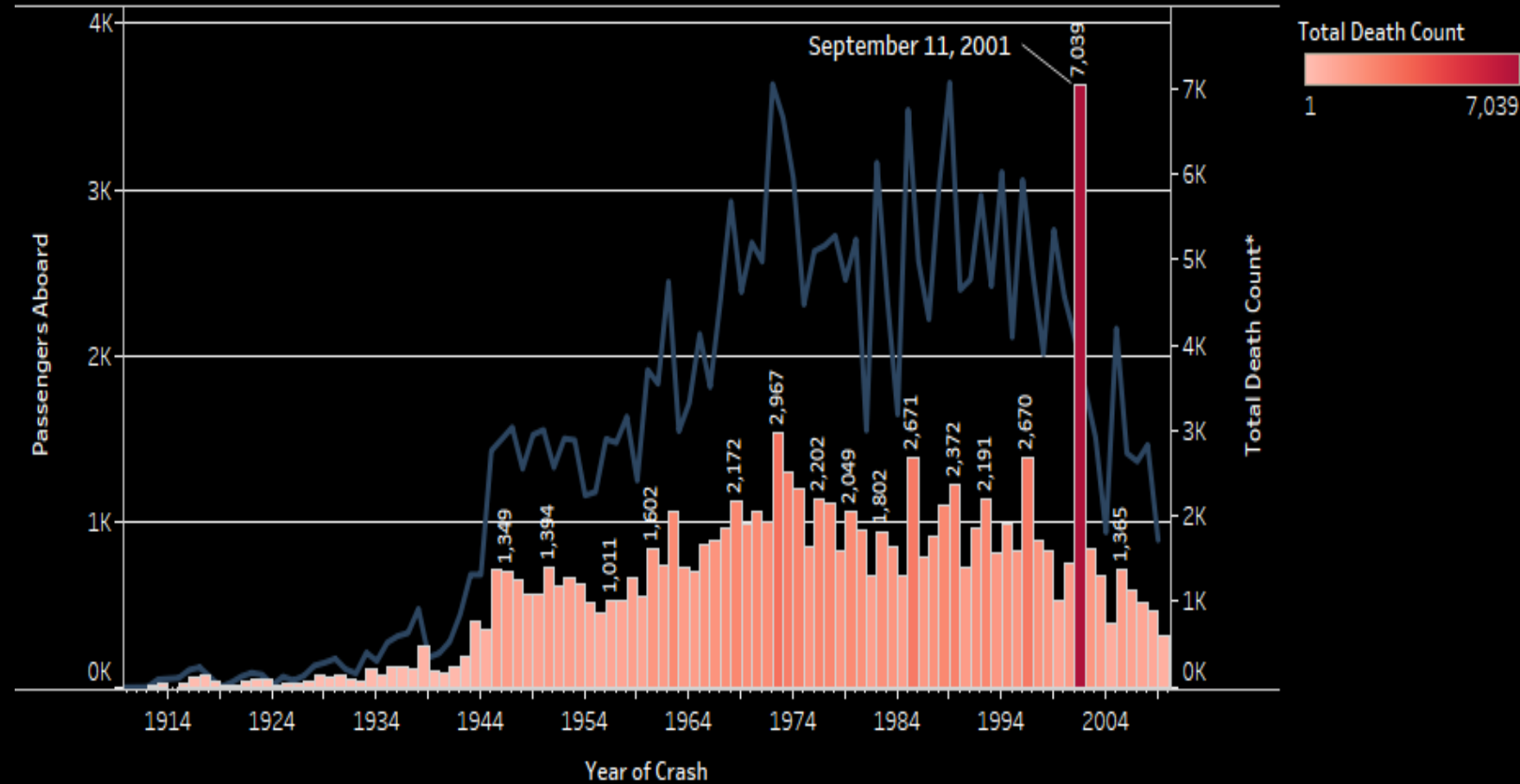
Total Death Count at all Locations



Total Death Count



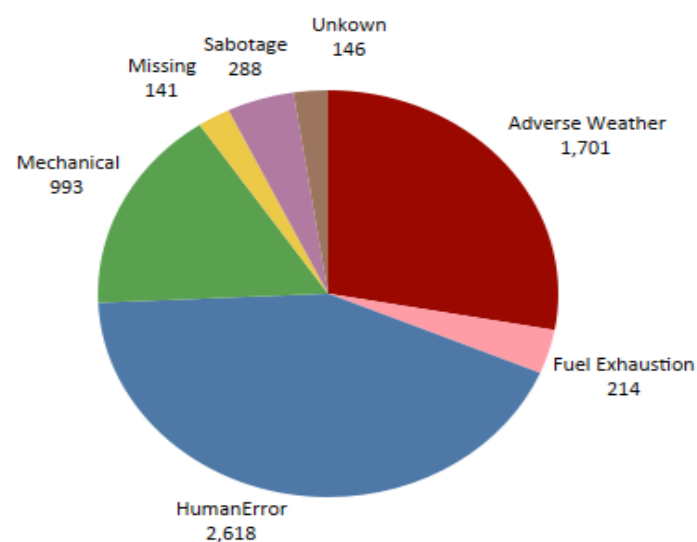
The 9/11 Anomaly



*Total Death Count=Fatalities in air+Fatalities on ground

The plot for total death count shows an unusual trend in the year 2001. This marks the biggest crash in aviation history, the 9/11 attacks at World Trade Center.

Causes Of Crash



Around 50% of airplane crashes happen because of human error.

The graph displays two data series over time. The red line, representing human error, starts near zero in 1910, remains low until the 1920s, then rises to a peak of approximately 38 in 1945. It fluctuates between 20 and 40 until the 1970s, then rises again to a peak of about 60 in 2002 before declining. The blue line, representing adverse weather, also starts near zero, remains low until the 1930s, then rises to a peak of approximately 38 in 1945. It fluctuates between 20 and 40 until the 1970s, then rises again to a peak of about 60 in 1992 before declining.

Year	Accidents due to Human Error (Red Line)	Accidents due to Adverse weather (Blue Line)
1910	0	0
1915	0	0
1920	0	0
1925	0	0
1930	10	10
1935	15	15
1940	10	10
1945	38	38
1950	25	25
1955	20	20
1960	25	25
1965	30	30
1970	35	35
1975	30	30
1980	35	35
1985	30	30
1990	35	35
1995	30	30
2000	35	35
2005	20	20

Crashes due to human error occur in the presence of adverse weather conditions in a majority of cases.

WHY DO THEY CRASH?

An investigation into the Causes of Airplane Crashes >>>>>>>>>>

PILOT ERROR
Pilots are sometimes the only cause due to their technical negligence.
Eg- Pennsylvania, where the plane struck high ground while en-route.

CREW ERROR
Crew negligence and fatigue has caused several mishaps due to miscommunication/confusion **314**



ENGINE FAILURE
Premature application of flaps, premature descent or manufacturing defects have led to engine failure **330**

Impairment-of-communications procedures and prescribed holding procedures brought down a Douglas near Utah on 18th Dec 1977	ELECTRICAL FAILURE	8

On 3rd Sept 1925, as a consequence of violent thunderstorms and imbalance in atmospheric pressure, a plane was broken into two.

HIJACK AND TERRORISM

Significant number of crashes have occurred as a consequence of hijackings and acts of terrorism.

77

There have been several cases when the plane has abruptly vanished from the radar. The mystery of the Bermuda Triangle still stands unresolved.



MID-AIR COLLISION

97 Lack of coordination between the two pilots and auto pilot malfunction

FUEL EXHAUSTION

214 Improper fuel cross feed procedures, failure to monitor fuel gauge have lead to fuel starvation and crash like Convair CV-580 Ohio, USA on 3rd Aug 2014

STRUCTURAL FAILURE
318 In Ukraine, on 18th June 1972, structural failure and separation of both wings due to crack in the center wing section killed all 122 aboard

POOR VISIBILITY
1133 Fog, mist, rain, clouds, excessive precipitation, icing and other adverse weather conditions have lead to various crashes due to bad visibility

SNOW ICING
258 A plane in China crashed on 21st Feb 1947 after it ran into heavy icing, as a consequence of which one wing broke off

WARS
234

Between the years 1908 and 2008, the aviation has been affected by various wars like World War 1 (WW1), WW 2 , Cold War, etc.

UNKNOWN REASONS

146 Apart from the aforementioned plausible causes, there have been many other mysterious cases of aviation disasters.



Total Aboard
144551

On ground
8%

Total
Fatalities
105479

On board
92%

Survivors
39072

Number of Fatalities during Wars

337

World War I
1914-18

3472

World War II
1939-45

73007

Cold War
1947-91

Aboard to Abode

Airplane crashes between 1908 and 2009

...Hope to fly you safe the next time!

THANK YOU!

About 70% of total fatalities
of the entire database have
occurred during this period

Total Plane
Crashes
5268

50%
due to
Human
Error



Most Crashed
War Plane
Douglas C-47A

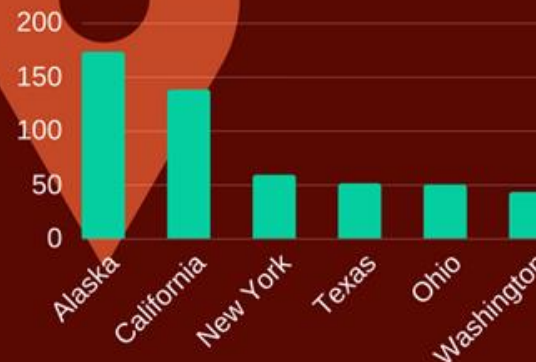
Most Affected
Passenger Airline
Aeroflot



Worst years
for aviation

The biggest crash
magnet

USA



1972

1985

1973

1996

1974

1989

1968