Safest way to travel and the Safest Airlines

By Shefers Sarkar

Purpose of this project is to analysis of airline safety. The visualization story follows incidents, fatal accidents, and fatalities between 1985 and 2014. Score are adjusted by Available Seat. KM per week flown by each airline with a large emphasis on airlines that have flown longer with fewer to no incidents.

Datasets:

Data sets were used for calculating various analytics for the dashboard. Airline Safety, Fatalities per airline, Incident per airline are few for the worksheet I have created with the data sets. The dataset was downloaded from aviation safety network. It includes data from 1984-1999 years and 2000-2014 years containing number of fatal accidents and fatalities between the time. It also includes airlines and distance covered by available seats per week in the airline. Below is the Airline safety data after cleaning.

Data Set

Airline	Incidents 1985-1999	Fatal Accidents 1985-..	Fatalities 1985-1999	Incidents 2000-2014	Fatal Accidents 2000-..	Fatalities 2000-2014	Total Adjusted Fatali
Aer Lingus	2.0	0.0	0.0	0.0	0.0	0.0	0
Aeroflot*	76.0	14.0	128.0	6.0	1.0	88.0	1
Aerolineas ..	6.0	0.0	0.0	1.0	0.0	0.0	0
Aeromexico*	3.0	1.0	64.0	5.0	0.0	0.0	1
Air Canada	2.0	0.0	0.0	2.0	0.0	0.0	0
Air France	14.0	4.0	79.0	6.0	2.0	337.0	1
Air India*	2.0	1.0	329.0	4.0	1.0	158.0	5
Air New Zea..	3.0	0.0	0.0	5.0	1.0	7.0	0
Alaska Airli..	5.0	0.0	0.0	5.0	1.0	88.0	0
Alitalia	7.0	2.0	50.0	4.0	0.0	0.0	0
All Nippon ..	3.0	1.0	1.0	7.0	0.0	0.0	0
American*	21.0	5.0	101.0	17.0	3.0	416.0	1
Austrian Air..	1.0	0.0	0.0	1.0	0.0	0.0	0
Avianca	5.0	3.0	323.0	0.0	0.0	0.0	8
British Airw..	4.0	0.0	0.0	6.0	0.0	0.0	0
Cathay Paci..	0.0	0.0	0.0	2.0	0.0	0.0	0
China Airlin..	12.0	6.0	535.0	2.0	1.0	225.0	9
Condor	2.0	1.0	16.0	0.0	0.0	0.0	0
COPA	3.0	1.0	47.0	0.0	0.0	0.0	0
Delta / Nort..	24.0	12.0	407.0	24.0	2.0	51.0	0
Egyptair	8.0	3.0	282.0	4.0	1.0	14.0	5
El Al	1.0	1.0	4.0	1.0	0.0	0.0	0
Ethiopian A..	25.0	5.0	167.0	5.0	2.0	92.0	5
Finnair	1.0	0.0	0.0	0.0	0.0	0.0	0
Garuda Ind..	10.0	3.0	260.0	4.0	2.0	22.0	4
Gulf Air	1.0	0.0	0.0	3.0	1.0	143.0	4
Hawaiian Ai..	0.0	0.0	0.0	1.0	0.0	0.0	0
Iberia	4.0	1.0	148.0	5.0	0.0	0.0	1
Japan Airlin..	3.0	1.0	520.0	0.0	0.0	0.0	3
Kenya Airw..	2.0	0.0	0.0	2.0	2.0	283.0	10
KLM*	7.0	1.0	3.0	1.0	0.0	0.0	0

Human cannot fly only birds do. I believe back of our mind we still struggling to believe that a heavy object can fly while carrying cargos, lots of human inside it from one place to another. A car drive on rode which is on earth, the surface we know and walk on all the time, this gives us some sort of comfortless to our mind. Safer way to travel airplane vs car is a lifelong argument.

Though logically I believe this argument shouldn't be exist. Airplane is just another form of transportation. But in real life it is very heavily exist and therefore I am writing this post.

As I have mentioned at the beginning that human cant fly, when we are travelling via airplane, our subconscious mind think that if there anything happen now, 35 thousand feet above the ground, there will be a free fall from there to earth and we will not survive. I know this is not logical, but you can ask yourself, how many times you have thought of that while travelling on air? While driving on a road we can see our good old dirt or asphalt road right there, which provide some sort comfort to our mind. It's a matter of perception, public opinion, preconceived notions, and sensitivity. People are conditioned by the news and public opinion to believe that airplane crashes happen frequently and are always horrific.

Let's not forget Airplanes are built on cutting edge technology which rely on heavily computerized systems. There is even a term exist called "Airplane Grade". Airplane manufacturer hugely relies on Automation. Not only the manufacturing process are automated but the technologies assisting pilot operating the aircraft are too with very high-end computer and applications. The International Air Transport Association reports that there was just one major accident for every 5.4 million flights in 2018. Which means odds of being in a plane crash are very low. Technologies are getting advance every day therefore the airline travel is getting even safer. New regulations, higher training standards, and better technology are all contributing to improved flight safety. Planes today have better engines and backup systems than they once did. The automation of a plane can often make up for any human errors, giving us a system that gets a little more foolproof every year.

In contrary the person who drives car are often distracted with many things and there are very few technologies out there to assist them. For an example, many car accidents happen due to texting and driving. But still people pickup their phone while they are behind the wheel. But if we hear any stories of airplane accident, our emotions triggered. If you've never been in a car accident due to texting and driving, it might not be scary to pick up your phone while you're behind the wheel. But, if all you hear about airplanes in the news are scary stories about people dying in freak accidents, your emotional brain is triggered and can link airplanes to terrible events. Car accidents, on the other hand, seldom get reported. But even when they do, these events don't affect us as much because we ride cars every day without incident.

Data from NHTSA (2008):

1. Total Auto-Related: 34,017

2. Deaths to Drivers: 19,220

3. Deaths to Auto Passengers: 7,397

4. Pedestrian Deaths: 4,378

DATA FROM NTSB (Deaths on 14 CFR 121 (Airlines)):

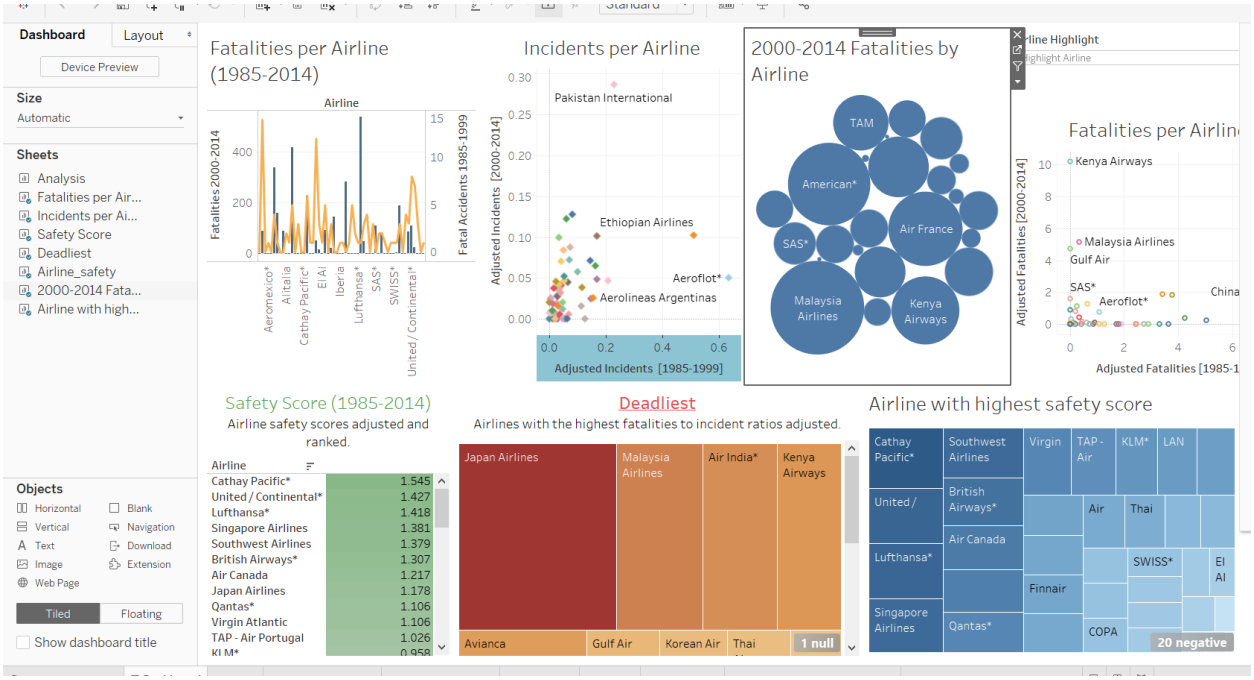
1. In 2009: 45

2. In 2008: 0

3. In 2007: 0

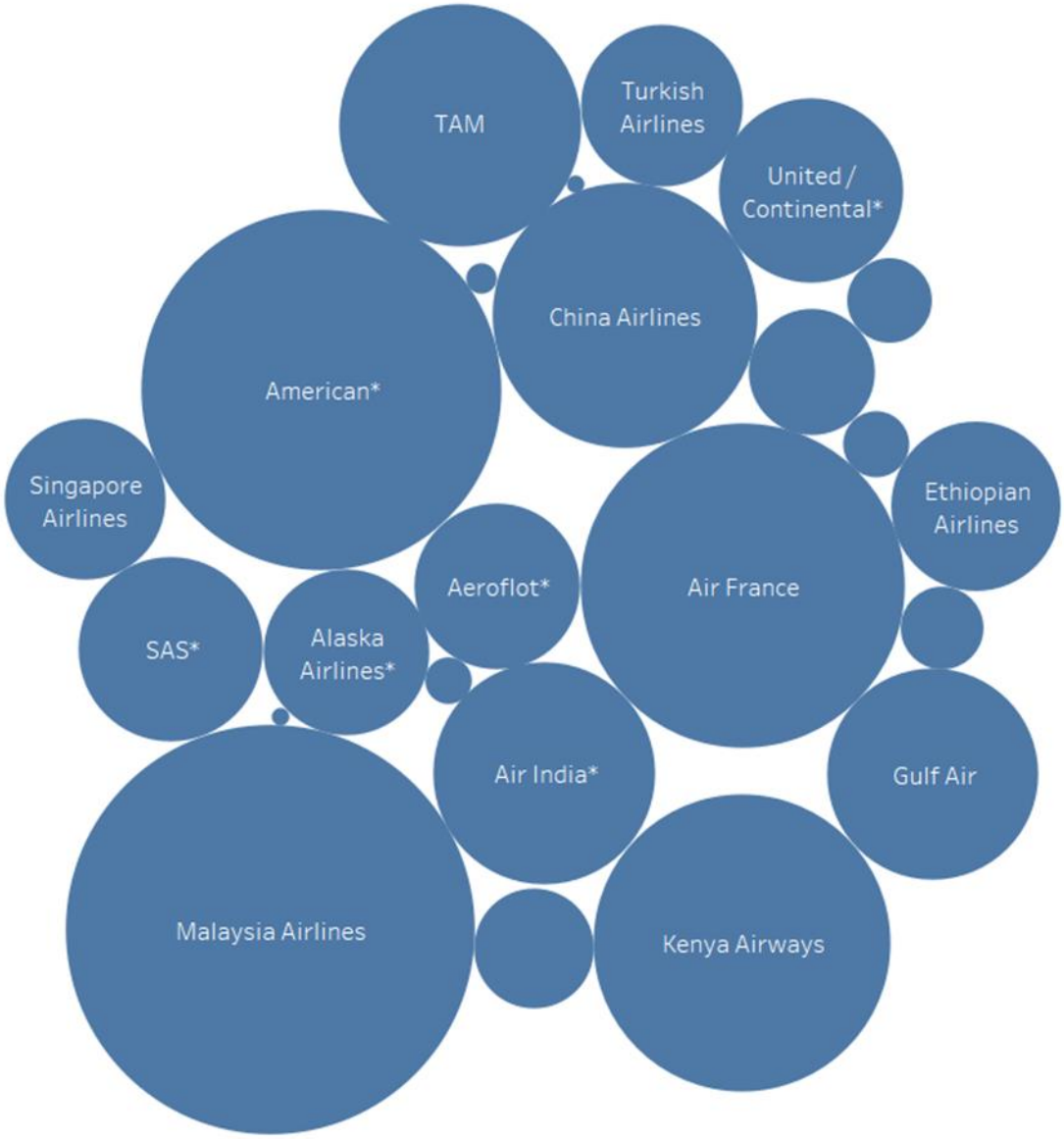
4. In 2006: 47

Dashboard

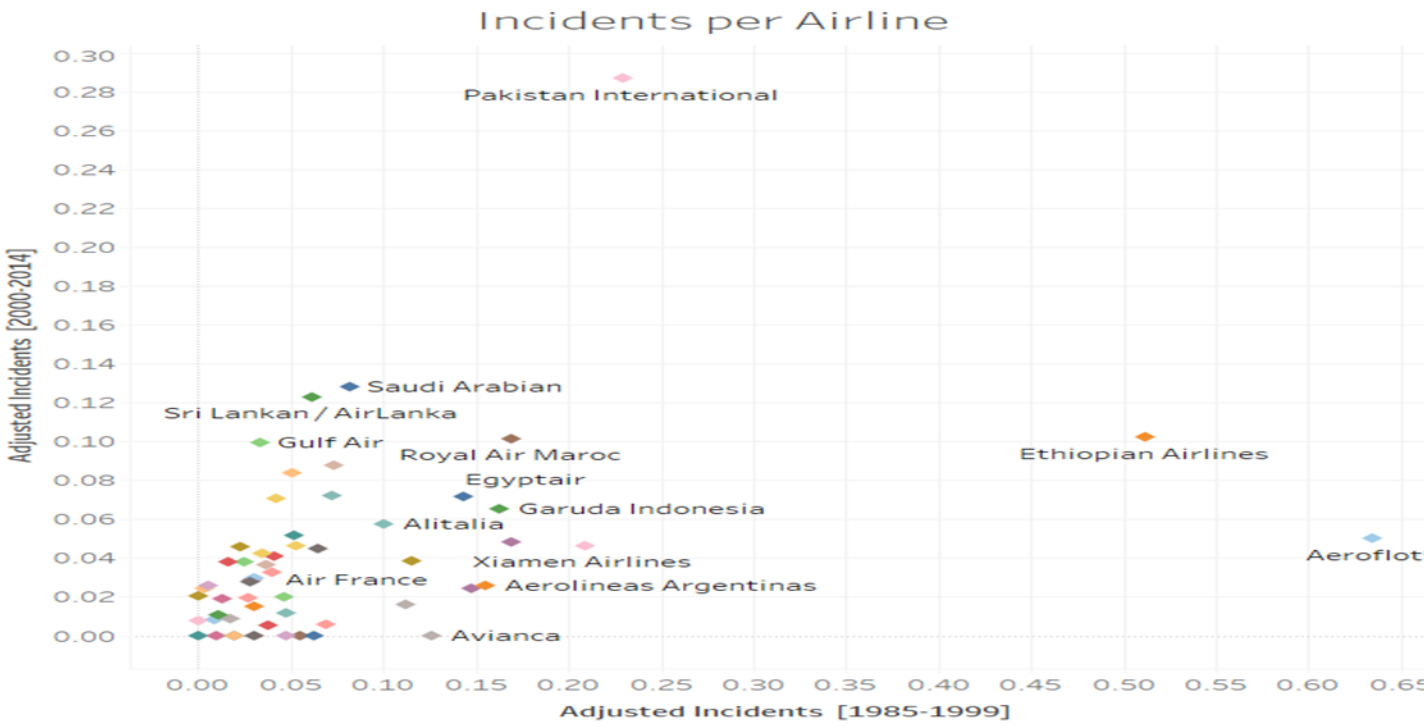


2000-2014 Fatalities by Airline

Sheet 7



Airline. Size shows sum of Fatalities 2000-2014. The marks are labeled by Airline.

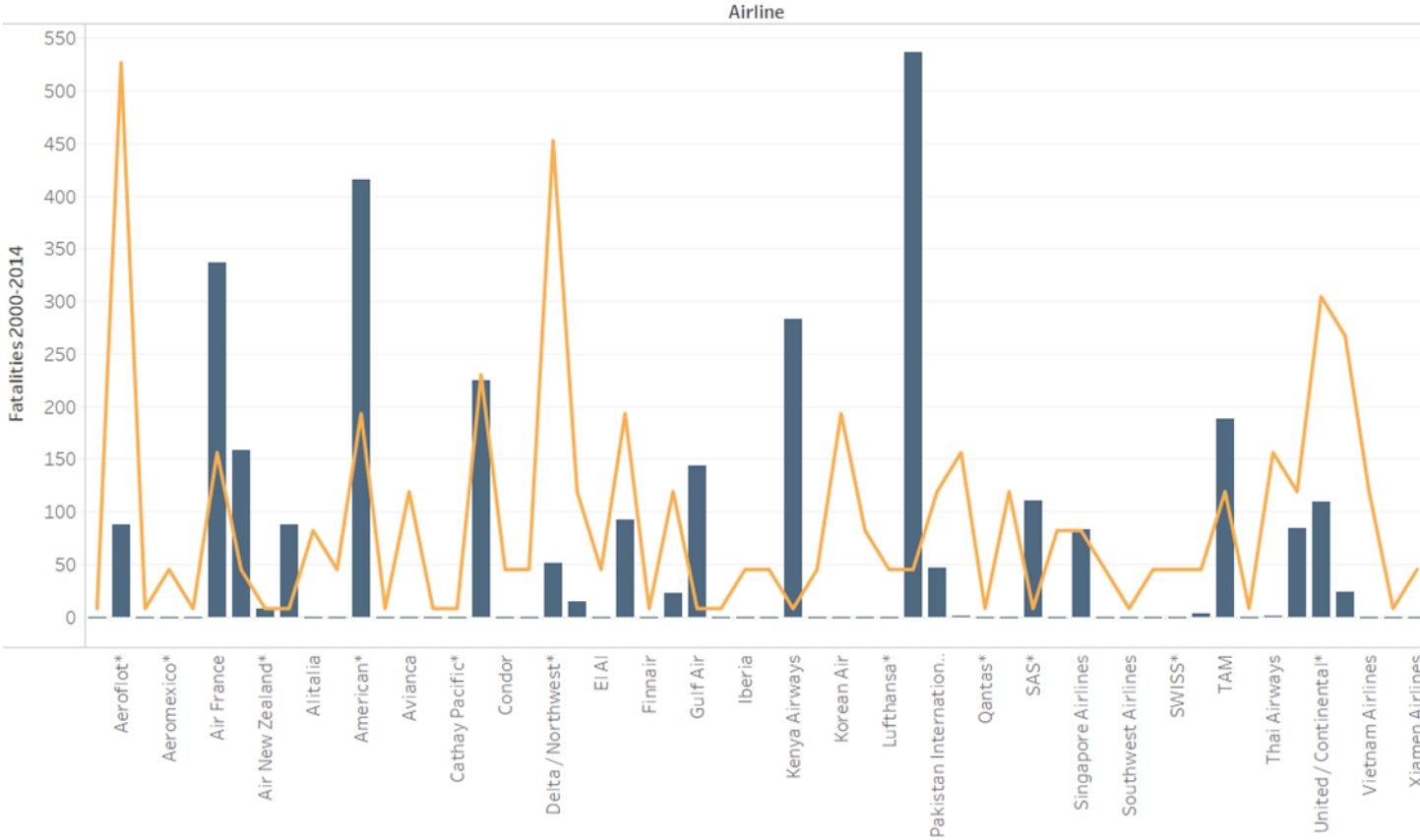


Sum of Adjusted Incidents [1985-1999] vs. sum of Adjusted Incidents [2000-2014]. Color shows details about Airline. The marks are labeled by Airline.

Airline

- Aer Lingus
- Aeroflot*
- Aerolineas Argentinas
- Aeromexico*
- Air Canada
- Air France
- Air India*
- Air New Zealand*
- Alaska Airlines*
- Alitalia
- All Nippon Airways
- American*
- Austrian Airlines
- Avianca
- British Airways*
- Cathay Pacific*
- China Airlines
- Condor
- COPA
- Delta / Northwest*
- Egyptair
- El Al
- Ethiopian Airlines
- Finnair
- Garuda Indonesia
- Gulf Air
- Hawaiian Airlines
- Iberia
- Japan Airlines
- Kenya Airways
- KLM*
- Korean Air
- LAN Airlines
- Lufthansa*
- Malaysia Airlines
- Pakistan International
- Philippine Airlines
- Qantas*
- Royal Air Maroc
- SAS*
- Saudi Arabian
- Singapore Airlines
- South African
- Southwest Airlines
- Sri Lankan / AirLanka
- SWISS*
- TACA
- TAM
- TAP - Air Portugal
- Thai Airways
- Turkish Airlines
- United / Continental*
- US Airways / America West*
- Vietnam Airlines
- Virgin Atlantic
- Xiamen Airlines

Fatalities per Airline (1985-2014)

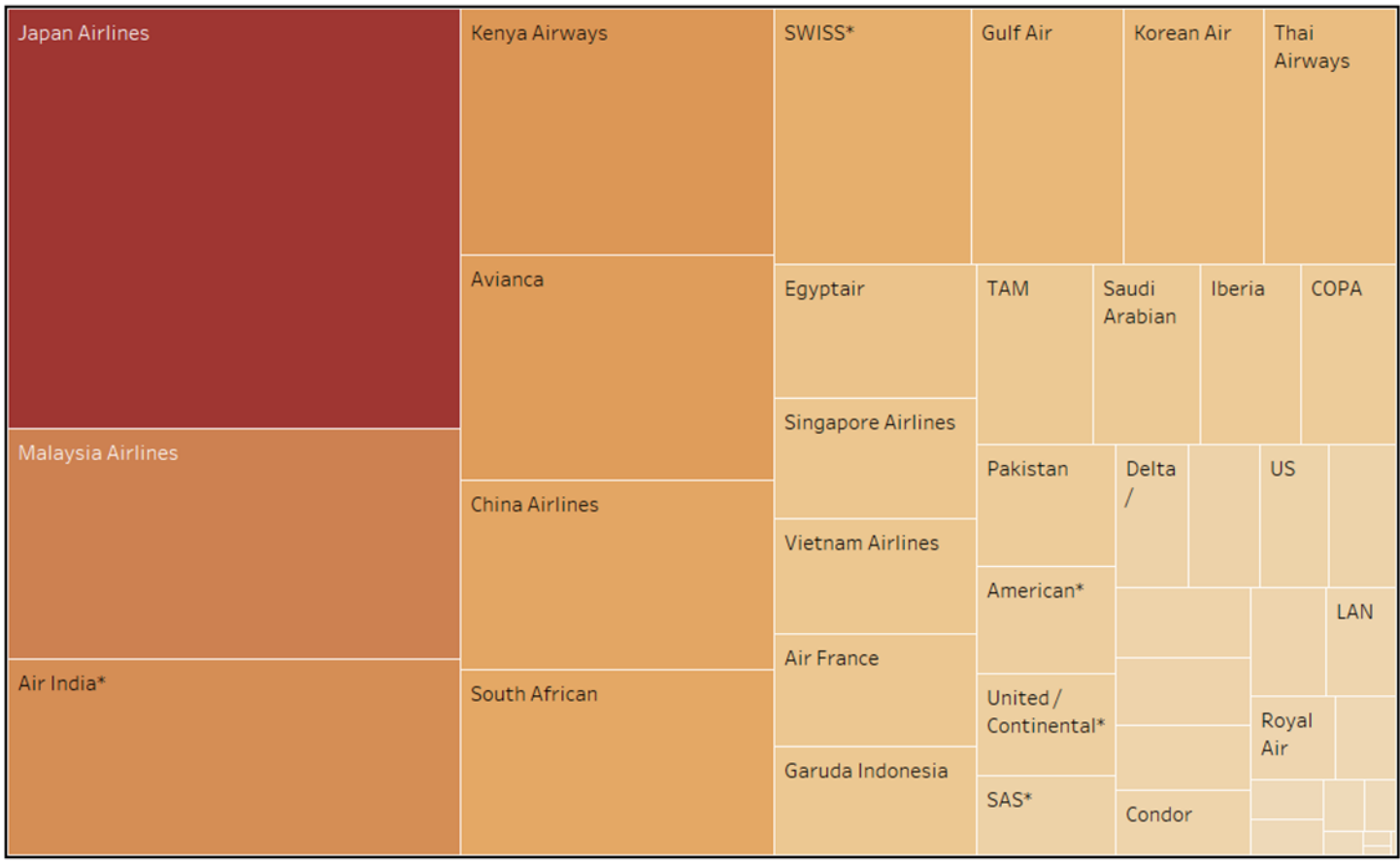


The trends of Fatalities 2000-2014 and Fatal Accidents 1985-1999 for Airline. Color shows details about Fatalities 2000-2014 and Fatal Accidents 1985-1999.

Measure Names
- Fatal Accidents 1985-1999
- Fatalities 2000-2014

Deadliest

Airlines with the highest fatalities to incident ratios adjusted.



Airline. Color shows sum of Deadliest. Size shows sum of Deadliest. The marks are labeled by Airline.

Deadliest

0.0 173.3