Fictious Airways

**Slide 1 – Cover Slide**

Hi Everyone, my name is Alan Danque. I will be your Fictious Airways presenter for today.

Before we begin, I would like to thank you all for attending our presentation on “How we

improved flight safety.”

**Slide 2 – Who is Fictious Airways**

Fictious Airways is a world class airline that provides air travel to well known locations around the globe. From vacation hot spots, to industrious cities in Asia, to financial markets in Europe, and to technology companies in the United States. Fictious Airways can get you to your travel destination.

**Slide 3 – Crash fatalities reporting in the news media**

The air travel industry has had its share of good times. However, after widespread news of multiple airline crash fatalities was released over a year and a half ago. A looming sense of concern over air travel safety has wreaked havoc on the air travel industry around the world.

**Slide 4 - How has safety concerns impacted air travel?**

As the concern for air travel safety makes its way around the world, usual air travelers also decide to reduce their air travel. This is proven by the number of months per monthly flights this year compared to last.

**Slide 5 - With fear of travel comes our fear of bankruptcy.**

And with the decline in air travel came reduction of income, and the fear of potential bankruptcy with no way financially keep operations running.

**Slide 6 - A new Data Science team was assembled to assess the problem and identify a solution.**

Fictious Airways needed to better assess the problem and determine actionable choices that will help improve the customer view of the Fictious Airways brand. To attempt to accomplish this goal, they set out to hire a new team of data scientists to analyze the situation, study all metrics and recommend possible solutions.

**Slide 7 - How many crashes has each aircraft been involved in?**

               The first analysis reviewed by the new team of data scientists was an analysis of the number of crashes for each of the types of aircraft owned by Fictious Airways. During this analysis, they found some interesting information that indicated over half of the types of planes owned by Fictious Airways contributed to a majority of the 297 crashes between all their planes. This helped hint that there were specific planes that be more likely contributing to the fatalities experienced.

**Slide 8 - Does the age of our aircraft contribute to crash fatalities?**

               They then decide to analyze if the age of the plane was a factor that led into the increased fatality counts when involved in a plane crash. It was then - that they identified a key metric they called, “survival rate”. With this metric, there were able to understand if the age of the plane contributed toward increased fatalities or otherwise the survival rate of a plane crash. They found that although the oldest plane has a survival rate less than 30%, the second oldest plane still had a survival rate above 60%. And that some of the newer planes also had a survival rate lower than 30%.

**Slide 9 - Does the location affect the crash fatalities?**

               Next the data science team decided to review if the location of crashes was a contributing factor toward the fatalities counts per plane crash. In this review they found more evidence that there were specific planes that had higher fatality counts in certain countries  -noted by the size and color coded aircraft of the pie chart distribution of each spatially marked location on this global map.

**Slide 10 - What do our recorded crash metrics tell us about our aircraft?**

               The data science team decided it was time to start analyzing each of the planes involved in crashes. They started reviewing their 737-200 aircraft since it was involved in the most crashes. However, even though this aircraft was involved in the most crashes, it still had a survival rate above 60% - the data scientist decided to gather and analyze all the crash metric they had available on a heat map. This allowed them to be able to understand the levels of intensity of each metric to help understand how these metrics are affected by each of the aircraft owned by Fictious Airways. They then saw the answer to their question on why the 737-200 had the most crashes however, had a much better survival rate - above 60%. They concluded that this plane usually carried the most passengers and that if it was involved in a crash – the aircraft had a better survival rate.

**Slide 13 - Is there a pattern with specific types of aircraft that contribute to the ratio of chances of survival over fatality?**

               To better visualize what was identified by the heat map regarding the interesting trends of the higher than 60% survival rate of the 737-200 , the data science team rendered a horizontal bar chart that compared the amount of survivors vs fatalities. They decided that this visualization made it obvious to see the sheer magnitude of survivors to fatality counts.  However, they still felt they needed to better visualization to share with the executives that clearly helps them understand what the data is intending to tell them.

**Slide 12 - How does our survival counts stack up against fatality counts?**

               The differences of magnitude shown on the horizontal bar charts was the part of the story visualization that the data science team felt was needed to share with the executive team. The then decided to change the horizontal bar chart visualization to a stacked bar chart to better convey the survival counts and fatality counts for each of their plane types. They felt that this visualization made it much easier to see the larger proportions of fatalities versus survivors for the 3 types of aircraft they wanted to share with the executive team.

**Slide 13 - Revealing the new survival rate metric for each aircraft.**

               To visualize the comparison of the differences between the ratios of fatality counts versus the counts of survivors, they rendered a bullet chart that helped visualize the gauged ranges between aircraft with survival rates over 60% and the planes that have a survival rate below %30 in a sorted view with the highest survival rates on top to lowest on the bottom.  This visualization helps to clearly relay the importance of the 3 targeted planes that were contributing to the higher fatality rates therefore low survival rates when involved in a crash. Furthermore, this analysis helped support the importance of an aircraft gauging metric in which they were already calling the “survival rate”.

**Slide 14 - How does this new survival rate metric contribute to Fictious Airways’ overall survival rate?**

               Now that they had identified a metric that better gauges the rate of survival per plane, they decided to apply the same measurement using the combined survival rates for each plane that Fictious Airways owned to measure the company as a whole. This was done by aggregating all the aircraft survival rate scores together. Here they found that their overall survival rate score was %50 percent. Therefore, meaning that a passenger had a 50% survival rate when flying with Fictious Airways in the event of an airplane crash.

**Slide 15 - How we improved our survival rate? Which aircraft should be targeted to be removed to improve overall survival rate?**

               To communicate the progress of their analysis with the executive team of Fictious Airways, they decided to use an overly simplified color coded table map that used the same colors as rendered in the bullet chart that showed a list of the aircraft they owned and the survival rate identified for each of their planes. To indicate the highest level of urgency, they decided to color code the 3 aircraft with survival rates lower than %30 with the color of dark red like darkened blood. Their intention was to highlight the need to publicly decommission the use of these planes immediately.

**Slide 16 - How did we further assess the aircraft identified for decommission?**

               To provide supportive evidence on their findings regarding the 3 planes that needed to be decommissioned, they analyzed the fatality counts between the aircraft crew members and the passengers. This helped highlight the high counts of fatalities among aircraft crew members and passenger of these 3 types of planes.

**Slide 17 - How does the overall survival rate look after removing the identified aircraft?**

               To forecast the overall airline survival rate score, after having decommissioned the 3 planes. The data science team presented the possible improvement to the company survival rate in which can be shared with the public to help increase confidence in traveling with Fictious Airways.

**Slide 18 - Improved Survival Rate!**

               The Executive Team decided to act on the suggestions presented by the Data Science team and was able to materialize improved survival rate score that was forecasted earlier for the company. This led to increased confidence in the Fictious Airways brand of air travel and thus preventing bankruptcy.

**The End.**