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Advancement in Aviation

Flight Data Monitoring



A 2013 report by the International Civil Aviation Authority shows that scheduled domestic and international flights accounted for around 3.1 billion passengers, which is higher than the 2.9 billion flown in 2012. People are opting air travel as a faster and safer means of travel and transportation. However, with the amount of flight operations increasing to account for the demand of the passengers, there could be more risk of incidence and accidents.

At Buddha Air, we continually strive to achieve world class safety standards by adhering to the requirements stipulated by regulatory authorities. We believe passenger safety, security and

service satisfaction is of paramount importance.

One of the many ways we have enhanced and ensured safety at Buddha Air is through the implementation of Flight Data Monitoring (FDM) effectively from January 2014. FDM is the proactive use of digitally recorded data obtained from routine operations. It is a method of capturing, analyzing and visualizing data generated by our aircraft during flight – from one destination to another. The analysis of the data from FDM improves the quality and the safety of flights. This is a confidential and non-punitive system to identify and minimize flight safety hazards.

Flight Data Management (FDM)

The many benefits of implementing FDM are:

- Operational safety
- Aircraft performance
- Aircraft system performance
- Crew performance
- Company procedures
- Training programs
- Training effectiveness
- ATC system operation
- Airport Operational Issues

Technology



We operate more than 50 flights every day to domestic and international sectors. From these flights, different data mainly altitude, speed, flight path and engine trend are acquired. The data is then retrieved for analysis where it is processed for statistical reports, trend analysis and risk assessment. FDM has the capability to thoroughly understand flight operations by tracking trends and investigating circumstances related to minor incidents. From the collection, assessment and

analysis of the data, we are able to detect flaws before they lead to major incidents. This also helps us to develop preventive and/or corrective actions like increased training or changes in in-flight operating procedures. Once the remedial actions are implemented, we will continually monitor the data to test the effectiveness and improvement.

Flight Data Monitoring (FDM)

- The FDM data for Beechcraft are analyzed by highly qualified, trained and expert employees from engineering, operations and technical department.
- The FDM data of 100% flight movements for ATR are sent to CASSIOPEE - an aviation service provided by Sagem. It has been leading the market for Flight Data Monitoring for its innovation in the field and expert flight safety and flight operations consultants. The data sent is received within 2 hours, for further analysis by the FDM Staff at Buddha Air.



Turbulence: What You Need To Know

Turbulence is the most common cause that creates anxiety and fear among passengers. However, can turbulence be an actual cause of aircraft crashes, or is it just an overly creative and dramatic manifestation of television and films?

Turbulence is a weather phenomenon responsible for the abrupt sideways and vertical jolts that passengers and cabin crew experience during flight. The irregular movement of air causing air masses of different speed, temperature and direction to meet each other causes it.

However, turbulence is rarely a threat to commercial passenger aircrafts. These aircrafts are designed to withstand turbulence with a 150% safety margin and are also equipped with modern aviation technology. So, when passengers and cabin crew experience turbulence, an aircraft will be structurally sound, with little or no damage to the exterior. In fact, there has only been one major disaster where an aircraft broke apart due to turbulence, and that was in 1966. Nowadays, reports of major turbulence disasters are rarely seen and heard.

Here are some important things you need to know about turbulence:

1. The weather is a major contributor for



experiencing turbulence. When you are flying under extreme weather conditions like storms or cloudy weather, different air pressures are created which results in strong winds moving in

It is always advisable to keep your seatbelts fastened, even when the seatbelt sign is off. Just do not fasten it too tight that it makes you uncomfortable. As turbulence can sometimes occur without warning, the seatbelt is the best way to avoid getting thrown around in the aircraft.

different directions.

2. Light turbulence can occur when the weather is sunny and there is good visibility because the calm winds can create warm air bubbles or rising currents that causes turbulence.
3. Smaller aircrafts experience more turbulence due to size and weight difference, but they are built to withstand turbulence to a greater level and are sometimes even safer than larger aircrafts.
4. The most unpredictable type of turbulence is Clear Air Turbulence (CAT). It occurs

on clear days, where no clouds are visible. This type of turbulence cannot be detected by air traffic control or aircraft radar. It is caused by air moving in different speed and directions at different places.

5. Pilots do not fly directly into turbulence





Before any flights begin their journey, pilots are given PIREP which is a flight report with information about preflight plans, accurate weather forecasts with areas of expected turbulence and the latest reports of turbulence from airborne aircrafts. By following weather patterns, pilots predict the flight path and routes which should be flown to avoid turbulence.

and they opt for a smoother route. But turbulences can be 160km long and wide so some disturbance is unavoidable.

6. Pilots can predict turbulence in areas where there are mountains or hills. The air flowing over mountains creates downdrafts.
7. Pilots usually fly slowly at turbulence penetration speed to minimize turbulence experienced by the passengers and cabin crew.
8. When you experience turbulence, pay close attention to the announcements and instructions of the cabin crew.

Emergency Exit Row Seat Requirements

Emergency evacuations are ordered as precautionary measures for all the people to evacuate the aircraft in a safe and timely manner through the emergency exit doors of the aircraft. Passengers sitting near the emergency exit row will be requested to assist during an emergency evacuation under the instructions and guidance of the cabin crew. This facilitates rapid evacuation and ensures the safety of all the people onboard.

The following requirements must be fulfilled for passengers requesting a seat near the exit row:

1. The passenger must be 15 years or older. Minors (people under 15 years) are not permitted to sit at/near emergency doors. Passengers must be physically capable to manually open the emergency door of the aircraft.
2. The passenger does not require additional help from other passengers or the cabin crew.
3. The passenger is capable of assisting the cabin crew during an emergency evacuation such as opening and closing the aircraft door.
4. The passenger is able to understand the instructions of the cabin crew and the evacuation procedure and verbally convey the information to the other passengers.
5. The passenger does not have



to assist an accompanying passenger during an emergency evacuation. This includes passengers who are accompanying small children, elderly or disabled passengers.

6. The passenger has mobility, strength and dexterity in his/her legs, arms and hands.
7. The passenger is able to read and understand instructions related to emergency evacuation.
8. The passenger must consent to provide assistance during an emergency evacuation.

Causes of flight delays

Every airliner, whether it is domestic or international has faced unintentional flight delays. An airport needs to run smoothly and efficiently so that they can handle all the passengers and cargo in a scheduled manner. But sometimes, due to unforeseen conditions, delays occur. Flight delays are unavoidable circumstances, and the best any airlines can do when they do occur is minimize the delay time. In worst case scenarios, flights are cancelled, but this is not the most preferred manner of dealing with flight delays. Unfortunately, Nepal also has faced many problems of flight delays in its domestic and international terminals. So why are flight delays so frequent for domestic and international flights to Nepal?

Nepal has flourished over the years from the quaint kingdom it once was. Despite the dramatic economic and political changes in Nepal, people's interest to travel to Nepal has been constantly increasing. Tourism in Nepal has risen to new heights, consequently increasing the number of international and domestic

flights operating in Nepal to accommodate the demands. The high demand has led to more airline operators providing their services to Nepal.

Tribhuvan International Airport (TIA), the only international airport in Nepal has the responsibility of managing the air traffic flow to and from Kathmandu. The TIA has apron capacity (area where aircrafts are parked, boarded, loaded and unloaded and refueled) for nine international aircrafts and seventeen domestic aircrafts. However, there is also a steady increase in the number of aircrafts operating in the domestic sector. This leads to a problem of limited parking capacity for domestic airlines.

The increase in international and domestic flights has caused the volume of air traffic in Kathmandu to increase resulting in the TIA to face heavy congestion. Priority status is given for international flights to be



BAD WEATHER

- less visibility
- raining & thunderstorm



AIR TRAFFIC

- increasing international & national flights
- few air route

flown on time due to the limitation of apron capacity. This causes domestic flights like ours to be rescheduled. Once a single flight is rescheduled, subsequent flights also have to change their flight times accordingly.

There are circumstances when flight delays are inevitable – the most common is bad weather conditions. When weather conditions are not optimal for flight, the route we take to fly to our sectors is limited. Even if we are flying to different sectors, only one route is available from Kathmandu to the other sectors we operate in. Also, the weather conditions in the other sectors have to be optimal for successful approach and landing of our aircrafts. A bad weather in other sectors results in the airports opening late, causing a delay in our flights.

A weather related delay leads to a vicious cycle of air traffic and apron congestion problem. This holds true for airlines operating the international and domestic sectors. A weather related delay at one destination may cause international and domestic flights to be rescheduled to facilitate the arrival or departure time of the delayed aircraft.

Rescheduling a flight due to bad weather or heavy congestion of traffic in the air and apron area is done

by the air traffic controllers. Every flight we operate falls under two basic flying rules, Visual Flight Rules (VFR – regulations where pilots use visual navigation under clear weather conditions) and Instrument Flight Rules (IFR – regulations where pilot use instruments in cockpit for navigation). We need to get clearance of our flight plan from the Air Traffic Control (ATC). This flight plan includes parameters like whether the flight is VFR or IFR, cruising altitude, fuel load, departure time, etc. Only after ATC approval, does our flight get clearance for takeoffs. In instances of bad weather, or any circumstances where our aircraft cannot fly with the intended flight plan, changes are needed, which may take time for approval from the ATC.

The inevitable circumstances of flight delays occur, so that there are no air traffic or bay area congestion at airports. This ensures smoother and safer flights for passengers, crews and airliners. At Buddha Air, we strive to ensure the safety of our passengers, crew and aircrafts. When our flights are delayed, we ensure that we operate under the rules and requirements defined by the aviation authorities.

● Photos: **Rohan Shrestha**/Technical Department, *Buddha Air*



CONGESTED AIRPORT

- no. of aircrafts increased
- insufficient parking space



Buddha Air's Frequent Flyer Program



BENEFITS FOR

Platinum Royal Club Members

- Fly free to qualifying destinations
- A quota of seats will be reserved up to 24 hours before a flight. If these seats are not redeemed within the given time, they will be allocated to the first passenger on our waiting list.
- Quicker check-in at airport counters.
- Extra baggage allowance of up to 5kg.
- 10% Extra mileage points awarded on scheduled flights.
- Cancellation charges will NOT be charged, if Platinum Members cancel their flight within 3 working hours before the flight.

Royal Club is our loyalty program that rewards our frequent flyers. Regarded as one of the best loyalty programs in Nepal, our Royal Club has been successfully gaining membership since it was implemented in September 2002.

By signing up for a membership with Royal Club, you are rewarded with many benefits and privileges. The more you fly, the more mileage points you accumulate. These points can later be exchanged for free tickets to the qualifying destinations, cash vouchers to go on a shopping spree and even going on holidays to resorts and hotels. Furthermore, a membership benefits your spouse and children as well! With enough miles, you get to issue free tickets in their name too.

We have made things easy for you to join our Royal Club. Just fill up a Royal Club Membership form; free

of cost at our airport counter. Once that is submitted, you will receive a temporary membership card. This card should be presented at the check-in counter the next time you fly with us. You can start earning mileage points from your very first flight. A permanent card will be delivered to you via courier at the given address.

At Buddha Air, we offer two types of Royal Club Membership. The first is the Gold Membership Royal Club, which is what you receive when you first join our frequent flyer program. Once you collect 7500 mileage points or more, you are eligible to upgrade to Royal Club Platinum Membership, valid for 2 years. If you choose to upgrade, a brand new silver colored card will be issued to you. You get to renew your Platinum Membership only after earning 7000 mileage points during the Platinum membership period. If not, you will be reverted back to Gold Membership – without the hassle of renewing your Gold Membership again.

What are you waiting for? Join our Royal Club to get free tickets to your preferred destination, preferential services and attractive vouchers and gifts. For even more information about our Royal Club, please visit our website at <http://www.buddhaair.com/royal-club/royal-club-1.html>

Service Area	Silver	Platinum
Validity	Permanent	2 Years
Reserved Seat Quota	No	2*
Cash Voucher Rate	1:08	1:09
Extra Baggage Allowance	5 KG	10 KG
Cancellation	Normal	Upto 3 Hours**

* Two seats on each sector are reserved for up to 24 hours prior to the flight time

** Cancellation up to three working hours before the flight time will be entertained