

# ATFM Implementation in Nepal

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CIVIL AVIATION  
AUTHORITY OF NEPAL



## *A brief Aviation History Nepal*

- Aviation history in Nepal began in 1949 (70 years ago) with the landing of Beech Bonanza 4 seater small aircraft.
- 1958 A.D : Royal Nepal Airlines started schedule services.
- 1960 A.D : Nepal Attained ICAO Membership .
- 1998 A.D : CAA Nepal established.

## Main Functions of CAA Nepal

- Permitting Airlines Operation.
- Airworthiness Certification and Manpower licensing ,Regulating Air Transport , Air Navigation Services and Aerodromes.
- Constructing, Operating and Maintaining Airports.
- Operation of Safe , Efficient and Expeditious Flights.

## Airports in Nepal

- One - International Airport
- Four - Domestic Hub Airports -
- Forty four - Other Domestic Airports

Total = 49 Airports

16 Domestic airports are not in operation among 44 Domestic airports.

## Airports under construction

### ➤ 3 International Airports +6 Domestic Airports .

- Gautam Buddha Intl. Airport, Lumbini ( will come in operation from next year )
- Pokhara Intl. Airport (under construction, planned to complete by 2021)
- Nijgadh Intl. Airport , ( mega project , model airport in South Asia. Expected to come in operation by 2025



# Domestic Airlines in Nepal

Rotor Wing – 9

Fixed Wing – 10

Aviation recreational clubs-75 (4 Ultra lights+1 Ballon+70Paragliders)

# International Airlines Operating In Nepal

1.	Bangladesh	Biman Bangladesh Airlines
2.	Bhutan	Druk air(royal Bhutan airlines)/Tashi Air(Bhutan air)
3.	China	China Eastern airlines China southern airlines Air china Sichuan airlines Tibet airlines
4.	Hong Kong	Dragon air
5.	India	Air India/ Indigo Air
6.	Korea	Korean air
7.	Malaysia	Malaysian Airlines/ Malindo Air

8.	Nepal	Buddha air,Nepal airlines Himalayan airlines
9.	Oman	Oman Air,Salam air,
10.	Qatar	Qatar airways
11.	Singapore	Silk Air
12.	Thailand	Thai airways ,Thai lion
13.	Turkey	Turkish airlines
14.	U.A.E	Air Arabia,Etihad Airways,Fly Dubai  3 more international airlines -- Jazeera Airways , spicejet ,and Vistara airlines got permission to operate flights to Nepal for 2019 /2020 .



TRIBHUVAN INTERNATIONAL AIRPORT

INTERNATIONAL  
OPERATIONS/  
AIRLINES COMPLEX



YIELD

ADVERTISE  
IN AIRPORT  
4488623  
9801030415



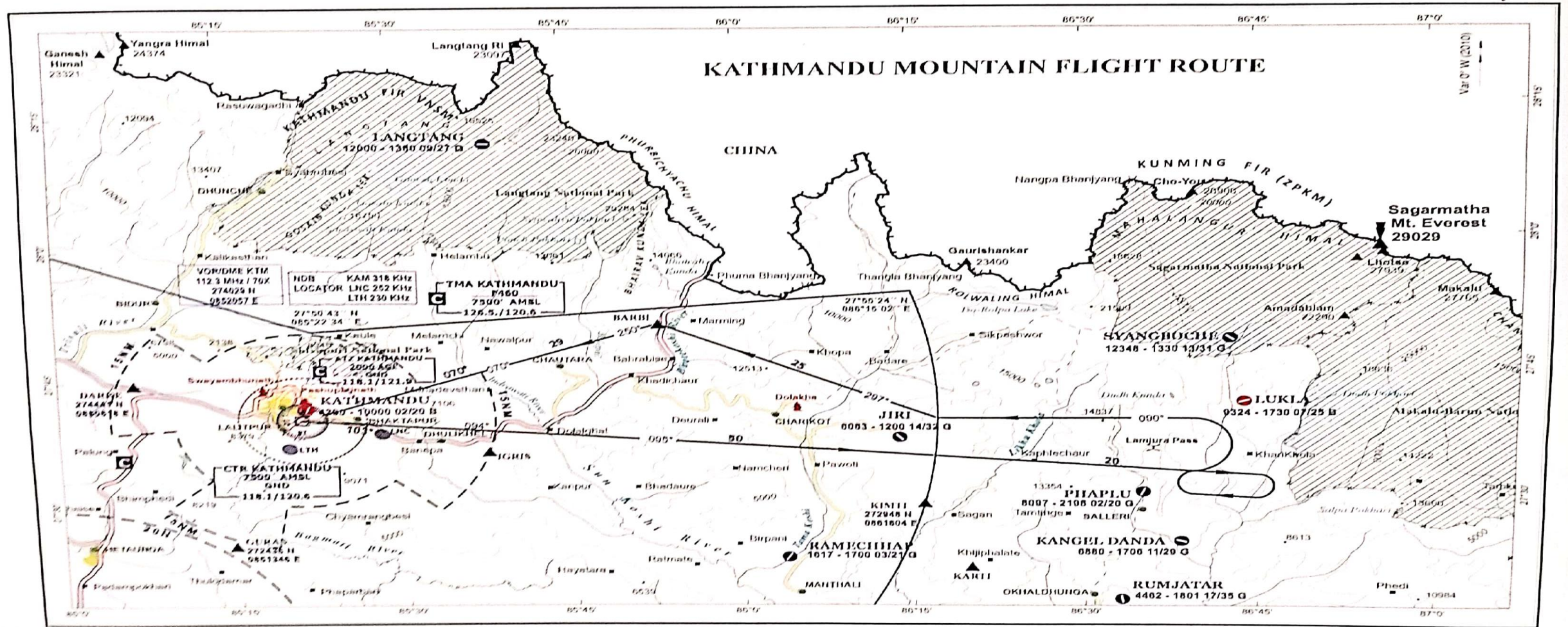




## ***Tribhuvan (Kathmandu ) International Airport Nepal***

- Only one international airport of Nepal.
- busiest airport in terms of passengers' movement.
- It is the only air-gate to Nepal from international destinations and links with all domestic airports.
- From the perspective of flying , Nepal with tough topographical constraints , divers' weather is considered to be one of the challenging region.

Every day Dozen of tourist mountain flights fly in the Northern Himalayas for sight seen (mountain flights ) at FL 190-270.

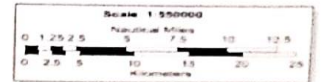


**Existing High level mountain flight route**

1. After take off from VOR/DME KTM, climb northeast at 1000 FPM to 12000.
2. Proceed northeast to 12000, climbing to 12000.
3. Descend to 12000, then climb to 12000.
4. Maintain 12000, then climb to 12000.
5. At 12000, turn left descending to 11200, then climb to 12000.
6. At 12000, turn right descending to 11200, then climb to 12000.
7. Maintain 12000, then climb to 12000.

**Notes**

1. Aircraft proceeding outbound must follow R095 strictly or remain south of R095.
2. Inbound aircraft to track north of R095 as far as possible considering weather and turbulence.
3. This route is designed specifically for Beechcraft, Jet Stream and ATR aircraft.
4. Increase of circling due to weather/operational requirement make a right orbit at 8000, KTM descend to FL230.
5. Outbound and inbound tracks to be followed even in the case of abortive flight. Alternate course to be approved by the ATC.
6. Avoiding high terrain and remaining VMC during flight is pilot responsibility.





# TIA's Air Traffic Forecast

- Currently TIA handles about 500+ aircraft movements per day
- Annual international passengers movement of 5 million (approximately )
- Domestic passengers 3 million. (Approx)
- In the year 2028-2029, there will be 8-9 million international Passengers.



# Tribhuvan International Airport Master Plan



# Main Focus of Master Plan

- Airside Infrastructures
- Landside Infrastructures



## *Future Plan of TIA (CAAN)*

- Implementation of ACDM /ATFM at TIA .
- Airport operation will be for 24 hours .  
(Now Airport operation is for 21hours )

## ATS SYSTEM

- In VNKT we have RNP-AR Approach, STAR and SID will be available very soon designed by Navblue (Airbus ), VOR/DME Approach ,and Localizer Approach (going to installation ).
- In near future within next 5 years , all the conventional route will be change in RNP route as well as RNP STAR and SID for all airports .

## ATS SYSTEM

- Gautam Buddha Intl. Airport will be in operation by next year.
- This airport will be the appropriate alternate airport for TIA.
- In this Airport VOR/DME and ILS cat 2 approach procedure will be available.
- RNP approach also will be available in near future

## *ATFM Implementation Activities*

- TIA has faced a rapid increase of flights and results airfield and airspace congestion .
- Major concern of TIA for Airport users and operators is **Flight Delay** .
- The rapid growth of air traffic movements at TIA has outpaced its design capacity.
- Travelers experience delayed flights, missed connections, ground congestion, parking shortages, and long wait times in the terminal building.

## *ATFM Implementation Activities*

- *We have focused that phase wise implementation of ATFM in Nepal helps us ,*
  - to Improve understanding of other partners' needs.
  - to Create an effective communication platform.
  - to Improve the way we communicate with other partners.
  - to Reduce workload and contribute to lower probability of errors.
  - to Create a better working environment.
  - to Improve customer satisfaction.
  - to Improve the overall image of our airport.
  - to Ensure higher quality of service.



## *ATFM Implementation Activities*

- In 2019 TIA has organized several meetings and interaction programs with concerned stakeholders .
- We communicated the objectives of TIA office for the implementation of ACDM/ATFM
- In 2019 we have established FMU (flight management unit ),at approach control unit .
- We are using simple prototype software (local software)in desktop computer of FMU and a telephone line for communication.
- Before providing the flight permission we also use the data of traffic volume on that time and use the slot system as per declared capacity .

## *ATFM Implementation Activities*

- CAAN (TIA) has a contract with a consultant agency to prepare a roadmap on phase wise implementation of ATFM.
- The Agency has submitted an inception report and will submit a final report in near future.
- Indian ATFM experts are involved in this task.
- Beside that , when ATCs faces heavy traffic congestion, we deploy an additional ATC staff just to calculate ETA of domestic departure,. This helped to predict future congestion hours.
- Now we are using local simple software that has helped ATCs to predict congestion hours and they started GDP(ground delay program ) for Kathmandu as well as for other domestic airports.
- Till now no such cross border coordination has been take place.

## *ATFM Implementation*

- On behalf of participants we are very grateful to EASA organizing this type of useful ATM/ATFM workshop in Kathmandu.
- In this workshop key officials including active ATCs of CAA Nepal are participating and they are directly concerned to implement ATFM program .
- We heartily welcome to EASA experts as well as to all participants of South Asia.
- We assure this Regional Workshop on ATM “ Key Principles and requirements for ATFM in South Asia” Kathmandu 12-14 Nov 2019 will be fruitful.
- Expecting continuous support /assist from EASA for such type of useful program in coming days .

The End ... Thanking You Sir s