CIVIL AVIATION AUTHORITY OF NEPAL

ATM DEPARTMENT

AIR TRAFFIC SERVICES OPERATION MANUAL

DHANGADHI CIVIL AVIATION OFFICE

(ATSOM, DHCAO)

First Edition

Sept, 2018

FOREWORD

Pursuant to the Introduction A (i) of Manual of Standard Air Traffic Services (MATS) Nepal Second Edition 2014, this Air Traffic Services Operations Manual referred herein after ATSOM has been developed by ATM Department, CAAN in coordination with Dhangadhi Civil Aviation Office (DHCAO). This ATSOM incorporates the provisions of MATS Nepal, relevant Civil Aviation Requirements, and provision of related ICAO Annexes and Documents.

This ATSOM prescribes the detail processes and procedures for Air Traffic Services under the jurisdiction of Dhangadhi Tower for the safety, regularity and efficiency of air navigation applicable for Dhangadhi Airport. ATS personnel are required to comply with the provisions of this manual to perform their operational responsibilities.

This manual is approved by Director General of Civil Aviation Authority of Nepal and issued under his authority which comes into effect from ..18Th..Sept.. 2018.

Director General

Civil Aviation Authority of Nepal

Babar Mahal, Kathmandu

AMENDMENT RECORD

Amendments and Corrigenda to this "Air Traffic Services Operations Manual, DHCAO" are regularly issued by Director General of CAAN, Nepal. The space below is provided to keep a record of such amendments.

RECORD OF AMENDMENTS AND CORRIGENDA

AMENDMENT					CORRIGENDA			
No.	DATE APPLICABLE	DATE ENTERED	ENTERED BY		No.	DATE APPLICABLE	DATE ENTERED	ENTERED BY

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CHAPTER 1

INTRODUCTION

1.1. Background

1.1.1. This "Air Traffic Services (ATS) Operation Manual for Dhangadhi Civil Aviation Office", made under the provision of Manual of Standard Air Traffic Services Nepal (MATS Nepal) Second Edition 2014, Chapter Introduction, Para (A) (i), refers to the Procedures and methods to be used in Dhangadhi Civil Aviation Office in providing Air Traffic Services. This document is referred as ATSOM, DHCAO in short.

1.1.2. In the circumstance where there is any inconsistency between the provision of MATS Nepal and the ATSOM-DHCAO, the MATS Nepal prevails.

1.1.3. This ATSOM-DHCAO supersedes SOP for ATS operation presents in Dhangadhi Tower.

1.2. Related Documents

The provisions in this document should be read in conjunction with:

a) Civil Aviation Requirements (CAR-11) –Air traffic Services
b) Civil Aviation Requirements (CAR-2) –Rules of the Air.
c) Civil Aviation Requirements (CAR-12) – Search and Rescue
d) Civil Aviation Requirements (CAR-15) – Aeronautical Information Services;
e) Civil Aviation Requirements (CAR-19) – Safety Management
f) Manual of Standard Air Traffic Services, (MATS. Nepal)
g) ICAO Air Traffic Services Planning Manual (Doc 9426);
h) ICAO Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM) (Doc 4444);
i) ICAO Regional Supplementary Procedures (Doc 7030);
j) AIP Nepal, AICs, AIP Supplement, DGCA Directives and Advisory Circulars.
k) ICAO Annex 10 –Aeronautical Telecommunications, Volume I – Radio Navigation Aids, Volume II –Communications Procedures;
l) ICAO Safety Management Manual Doc 9859
m) Manual of Standard Licensing/ Rating of Air Traffic Control Personnel, Third edition, 2015

1.3. Differences Published in AIP

Differences from ICAO Standards, Recommended Practices and Procedures are published in AIP Nepal.

1.4. ATSOM, DHCAO Documentation Change Management

1.4.1. Dhangadhi Civil Aviation Office has the responsibility for the technical contents of this ATSOM which can be amended and issued after the approval from the Director General, CAAN.

1.4.2. The need to change procedures in this ATSOM can arise for any of the following reasons:

a) To ensure safety

b) To ensure standardization.

c) To respond to changes in MATS, Nepal.

d) To respond to changes in other safety standards of CAAN.

e) To respond to ICAO prescription.

f) To accommodate proposed initiatives or new technologies.

CHAPTER 2

DEFINITIONS

When the following terms are used in the present document they have the following meanings:

Aerodrome control service. Air traffic control service for aerodrome traffic.

Aerodrome traffic. All traffic on the maneuvering area of an aerodrome and all aircraft flying in the vicinity of an aerodrome.

Note.— An aircraft is in the vicinity of an aerodrome when it is in, entering or leaving an aerodrome traffic circuit.

Aerodrome traffic circuit. The specified path to be flown by aircraft operating in the vicinity of an aerodrome.

Air traffic. All aircraft in flight or operating on the maneuvering area of an aerodrome.

Air traffic control clearance. Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

Note 1.— For convenience, the term "air traffic control clearance" is frequently abbreviated to "clearance" when used in appropriate contexts.

Note 2.— The abbreviated term "clearance" may be prefixed by the words "taxi", "take-off", "departure", "en-route", "approach" or "landing" to indicate the particular portion of flight to which the air traffic control clearance relates.

Air traffic control service. A service provided for the purpose of:

a) Preventing collisions:
   1) Between aircraft, and
   2) On the maneuvering area between aircraft and obstructions; and

b) Expediting and maintaining an orderly flow of air traffic.

Air traffic control unit. A generic term meaning variously, area control centre, approach control unit or Control tower.

Air traffic service (ATS). A generic term meaning variously, flight information service, alerting service, air traffic advisory service, air traffic control service (area control service, approach control service or aerodrome control service).

Alerting service. A service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.

Approach control unit. A unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more aerodromes.

Ceiling. The height above the ground or water of the base of the lowest layer of cloud below 6000 m (20 000 ft) covering more than half the sky.

Control zone. A controlled airspace extending upwards from the surface of the earth to a specified upper limit.

Duty. Any task that an air traffic controller is required by the air traffic services provider to perform. These tasks include those performed during time-in-position, administrative work and training.

Duty period. A period which starts when an air traffic controller is required by an air traffic services provider to report for or to commence a duty and ends when that person is free from all duties.

Emergency phase. A generic term meaning, as the case may be, uncertainty phase, alert phase or distress phase.

Estimated off-block time. The estimated time at which the aircraft will commence movement associated with departure.

Estimated time of arrival. For IFR flights, the time at which it is estimated that the aircraft will arrive over that designated point, defined by reference to navigation aids, from which it is intended that an instrument approach procedure will be commenced, or, if no navigation aid is associated with the aerodrome, the time at which the aircraft will arrive over the aerodrome. For VFR flights, the time at which it is estimated that the aircraft will arrive over the aerodrome.

Expected approach time. The time at which ATC expects that an arriving aircraft, following a delay, will leave the holding fix to complete its approach for a landing.

Note.— The actual time of leaving the holding fix will depend upon the approach clearance

Flight information service. A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights.

Flight plan. Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.
Note.- Specifications of flight plan and the Model Flight Plan Form are contained in Appendix 2.

Special VFR flight. A VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC.

Traffic information. Information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight and to help the pilot avoid a collision.

CHAPTER – 3

ABBREVIATIONS

Unless otherwise stated, abbreviations in this ATSOM have the meanings as follows:

A	
ACC	Area Control Centre
AMHS	Automatic Message Handling System
ANSSSD	Air Navigation Service Safety Standards Department
ARP	Aerodrome Reference Point
ATSOM	Air Traffic Services Operations Manual
ATZ	Aerodrome Traffic Zone
C	
CAR	Civil Aviation Requirement (Nepal)
CNS	Communications, Navigation and Surveillance
CTR	Control zone
D	
DGCA	Director General of Civil Aviation
F	
FIR	Flight information region
FIS	Flight Information Services
G	
GND	Ground
H	
HJ	Sunrise to sunset
I	
ISDN	Integrated Service Digital Network
M	
MAP	Aeronautical maps and charts
MSL	Mean sea level
P	
PAPI	Precision Approach Path Indicator
R	
RCC	Rescue co-ordination center
S	
DHCAO	Dhangadhi Civil Aviation Office
T	
TWR	Control tower
W	
WDI	Wind Direction Indicator

CHAPTER 4

4.1. ORGANISATION STRUCTURE OF DHANGADHI CIVIL AVIATION OFFICE

4.1.1. Dhangadhi Civil Aviation Office (DHCAO) is an entity directly under Air Navigation Service Directorate, Civil Aviation Authority of Nepal (CAAN). It's main goal is to ensure safe, efficient and orderly movement of air traffic operating within Kathmandu FIR under its jurisdiction. (Ref. 5.4).

4.1.2. Organization structure of DHCAO is presented in Appendix-A

4.1.3. Aerodrome control tower has been established at Dhangadhi Airport and is designated as Dhangadhi Tower.

4.1.4. Dhangadhi Aerodrome Control Tower provides Aerodrome Control Service and Approach Control Service together with flight information service and alerting service within control zone under its jurisdiction and within the area of responsibility as given in 5.5.3 and 5.5.4

4.1.5. The Hours of ATS Operation

16 Nov – 15 Feb: 0415 – 1015 UTC
Feb 16 – 15 Nov: 0415 – 1115 UTC

Note: Any changes or amendments are notified through NOTAM and subsequently through AIP amendment. Refer Appendix E for last VFR time of Dhangadhi .

4.1.6. Airport Chief of the DHCAO will also play supervisory role that has the sole responsibility for safe, efficient conduct of flight operation in Dhangadhi Tower.

4.1.7. Airport Chief will determine the number of operational staff required for operation hours on the basis of total number of working positions, rest period, duty period and weekly off period. Number of operational staff for Dhangadhi Tower is shown in the organization chart as specified in Appendix A.

4.1.8. Before proceeding with the actual work of ATC it is necessary to know the administrative procedures associated with the provision of ATC. When prior instructions have not been issued, the administrative rules included in this manual are applicable.

4.1.9. The movement of persons or vehicles including towed aircraft on the maneuvering area of an aerodrome is controlled by the control tower as necessary to avoid hazard to them or to aircraft landing, taxiing or taking off.

CHAPTER 5

GENERAL PROVISIONS FOR AIR TRAFFIC SERVICES

5.1. OBJECTIVES OF THE AIR TRAFFIC SERVICES

The objectives of the air traffic services will be as mentioned in chapter 2, article 2.2 of CAR 11.

5.2. DIVISION OF THE AIR TRAFFIC SERVICES

The **Dhangadhi TWR** will provide three category of ATS services: Air traffic control service, Flight information service and Alerting service with the objectives as mentioned in chapter 2, article 2.3.1(b), 2.3.1(c), 2.3.2 and 2.3.4. of CAR 11 as per the requirement.

5.3. CLASSIFICATION OF AIRSPACES

5.3.1. ATS airspaces within the jurisdiction of Dhangadhi TWR are classified and designated as following:

Class C: IFR and VFR flights are permitted, IFR flights are provided with air traffic control service, VFR flights are provide with air traffic control service for separation from IFR, IFR flights are separated from other IFR and VFR flights, VFR and VFR receive traffic information.

Dhangadhi Control Zone (CTR) and Aerodrome Traffic Zone (ATZ) have been classified and designated as Class C airspace.

5.3.2. Requirements for flights within each class of airspace will be as shown in following table:

Class	Type of flight	Separation provided	Services Provided	Speed Limitation	Radio Communication requirement ATC	Subject to an ATC Clearance
C	IFR	IFR from IFR IFR from VFR IFR from SVFR	Air traffic control service	NA	Continuous two-way	Yes
	VFR	NIL	Air traffic control service for separation from IFR.	250 KTS IAS below 10000 ft	Continuous two-way	Yes
			VFR/ VFR Traffic information (Traffic avoidance advise on request)			
			Separation will be provided between SVFR Flights.			

Table-1

Note: The Area of jurisdiction of Dhangadhi TWR other than Dhangadhi CTR and ATZ has been delegated as per Letter of agreement (LOA) between Dhangadhi TWR and Nepaljung TWR. LOA between Dhangadhi Tower and Nepaljung TWR is attached in Appendix B.

5.4. JURISDICTION OF DHANGADHI TOWER

5.4.1. The jurisdiction of Dhangadhi Control Tower will be as follows:

a. Control Zone (CTR):

Lateral Dimension: An area bounded by (28"42'2L257"N; 080"18'15.672"E) then along an arc of a circle of 15 NM radius centered at Dhangadhi ARP to (28'49'08.656"N; 080o51'26.962"8) to (28"46'31.769"N; 080'57'39.722"E) then along an arc of a circle of 20 NM radius centered at Dhangadhi ARP to (28"36'24.255"N; 080"55'20.666"E) to (28'38'33.781"N; 080"50'13'347"E) then along an arc of a circle of 15 NM radius centered at Dhangadhi ARP to (28'33'56.357'N; 080"46'09.673"E) and along Kathmandu FIR (VNSM) lo (28" 42'21 .25 7'N; 08 0" 1 8' I 5' 672"E)'

Vertical Dimension: from Ground Level to 9500ft AMSL.

b. Aerodrome Traffic Zone (ATZ):

An area of a circle of 5 NM radius centered at Dhangadhi ARP and to the South upto VNSM FIR. Vertical limit from ground Level to 2000ft AGL.

5.5. APPLICATION OF AIR TRAFFIC CONTROL SERVICE

5.5.1. Dhangadhi control zone and aerodrome traffic zone Air Traffic Control (ATC) Service will provide:

a) to all IFR flights;
b) to all VFR flights;
c) to all special VFR flights;
d) to all aerodrome traffics

5.4.2. Dhangadhi control tower is providing aerodrome control service and approach control service as combined under the responsibility of Dhangadhi Tower.

5.4.3. The responsibility for the provision of air traffic control service, will be provided by Dhangadhi tower under the area of its jurisdiction mentioned in 5.4.

5.4.4. The responsibility for the provision of Flight information service and alerting service will be provided by control tower within the jurisdiction of its airspace as mentioned in 5.4.

5.6. FLIGHT RULES AND PROVISION OF SEPARATION

5.6.1. VFR flights will not be authorized to take off or land at any controlled aerodrome or enter the aerodrome traffic zone or traffic pattern.

a) When the ceiling is less than 1500ft. (450m) or,

b) When the ground visibility is less than 5 Km

Note: For the purpose of permitting VFR flight, weather observations may be made over the entire horizon or only in the sector used by the flight.

5.6.2. By the application of the prescribed separation standards and procedures. Greater standards will be applied if considered necessary and specifically

a) For the avoidance of wake turbulence, or
b) Exceptional circumstances.

5.6.3. Separation minima may be reduced in the vicinity of aerodromes if:

a) Adequate separation can be provided by the aerodrome controller when each aircraft is continuously visible to the controller, or

b) Each aircraft is continuously visible to pilot-in-command of the other aircraft concerned and the pilots report that they can maintain their own separation, or

c) In the case of one aircraft following another, the pilot-in-command of the succeeding aircraft reports that he has the other aircraft in sight and can maintain separation.

5.6.4. VFR traffic will be provided with

a) Separation from IFR traffic
b) Traffic information of other VFR traffic and on request, traffic avoidance advice.

5.6.5. Where a separation standard does not exist, a controller will issue traffic information when in his opinion, traffic proximity warrants it. The traffic information provided will contain sufficient of the following to assist the pilot in identifying the other aircraft.

a) Call sign of the aircraft
b) Direction of flight
c) Type of the aircraft
d) Cruising level of aircraft and estimated time over the reporting point nearest to where the level will be crossed.

5.6.6. Traffic sequencing and separation will be provided between all aircraft in the circuit and landing and taking off.

5.6.7. The separation of military aircraft will be maintained in the same manner as for civil aircraft, except that when required by relevant military authority, different standards as specified by that authority will be applied between military aircraft.

5.7. FLIGHT PLANING

5.7.1 A flight plan will be submitted to the Dhangadhi Tower in respect of the following flights:

a) All VFR/IFR flights operating from Dhangadhi Airport.
b) Any flight or portion thereof, to be provided with air traffic control service

5.7.2 The flight plan submitted to Dhangadhi Tower will be signed and filed by the pilot-in-command or authorized representative at least sixty minutes prior to departure (the estimated off block time) using the ICAO flight plan form.

5.7.3 In the event of delay of 60 minutes for domestic fights in excess of EOBT, the flight plan will be amended or a new flight be submitted and old flight plan canceled, whichever is applicable.

5.7.4 Flights in compliance with VFR flights will insert VFR (V) and during on en-route, if the flight initially will be operated under the IFR, followed by one or more subsequent changes of flight Rules , insert Y and if under the VFR, followed by one or more subsequent changes of flight Rules , insert Z.

5.7.5 The total number of persons on board (passengers plus crew) will be stated in the flight plan or through radio telephony.

5.7.6 In addition, pilots are required to pass the total number of persons (POB) to the concerned ATC unit when requesting engine start-up during departure.

5.7.7 No flight plans will be filed for routes deviating from the published ATS route structure unless prior permission has been obtained from the appropriate ATS unit.

5.7.8 When a flight is planned to operate in aerodrome traffic circuit or local/ training flight, flight plan will be submitted to ATS units.

5.7.9 Whenever a flight, for which a flight plan has been submitted, is cancelled, Dhangadhi Tower will be informed immediately.

5.7.10 Changes to a current flight plan for a controlled flight during flight will be reported or requested, subject to the provisions in CAR 2, 3.6.2 (Adherence to flight plan).

5.7.11 While conducting a flight of a military nature like a group flight or para-drop or dummy drop, the pilot in command will always file a flight plan to the appropriate ATS unit and obtain an ATC clearance before conducting the operation.

5.8. AIR TRAFFIC CONTROL CLEARANCES

5.8.1. Clearances are issued solely for expediting and separating air traffic and are based on known traffic conditions which affect safety in aircraft operation. Such traffic conditions include not only aircraft in the air and on the maneuvering area over which control is being exercised, but also any vehicular traffic or other obstructions not permanently installed on the maneuvering area in use.

5.8.2. If an air traffic control clearance is not suitable to the pilot-in-command of an aircraft, the flight crew may request and, if practicable, obtain an amended clearance.

5.8.3. The issuance of air traffic control clearances by air traffic control units constitutes authority for an aircraft to proceed only in so far as known air traffic is concerned. ATC clearances do not constitute authority to violate any applicable regulations for promoting the safety of flight operations or for any other purpose; neither do clearances relieve a pilot-in-command of any responsibility whatsoever in connection with a possible violation of applicable rules and regulations.

5.8.4. Dhangadhi Control tower will issue such ATC clearances as are necessary to prevent collisions and to expedite and maintain an orderly flow of air traffic.

5.8.5. ATC clearances will be issued early enough to ensure that they are transmitted to the aircraft in sufficient time for it to comply with them.

5.8.6. When a flight plan specifies that the first portion of a flight will be subject to ATC, and that the subsequent portion will be uncontrolled, the aircraft will normally be cleared to the point at which the controlled flight terminates.

5.8.7. When an aircraft files, at the departure aerodrome, flight plans for the various stages of flight through intermediate stops, the initial clearance limit will be the first destination aerodrome and new clearances will be issued for each subsequent portion of flight from the unit under whose area jurisdiction lies.

5.8.8. Clearances will contain positive and concise data and will, as far as practicable, be phrased in a standard manner.

5.8.9. Clearances will, except as provided for in Chapter 6, Section 6.3.2. concerning standard departure clearances, contain the items in the order as specified in article 6.3.2.3 of MATS, Nepal-2014 as applicable.

5.8.10. Instructions included in clearances relating to levels will consist of items as specified in article 11.4.2.5.2.2, chapter 11 of MATS 2014, Nepal.

5.8.11. Dhangadhi Tower may request an adjacent ATC unit to clear aircraft to a specified point during a specified period.

5.8.12. After the initial clearance has been issued to an aircraft at the point of departure, it will be the responsibility of the Dhangadhi tower to issue an amended clearance whenever necessary and to issue traffic information, if required.

5.8.13. A clearance limit will be described by specifying the name of the appropriate significant point, or aerodrome, or controlled airspace boundary.

5.8.14. When prior coordination has been effected with units under whose control the aircraft will subsequently come, or if there is reasonable assurance that it can be effected a reasonable time prior to their assumption of control, the clearance limit will be the destination aerodrome or, if not practicable, an appropriate intermediate point, and coordination will be expedited so that a clearance to the destination aerodrome may be issued as soon as possible.

5.8.15. When the destination aerodrome is outside controlled airspace, Control tower responsible for the last controlled airspace through which an aircraft will pass will issue the appropriate clearance for flight to the limit of that controlled airspace.

5.8.16. Dhangadhi Tower may request Nepaljung TWR to clear aircraft to a specified point during a specified period.

5.8.17. After the initial clearance has been issued to an aircraft at the point of departure, it will be the responsibility of the Dhangadhi tower to issue an amended clearance whenever necessary and to issue traffic information, if required.

5.8.18. A clearance limit will be described by specifying the name of the appropriate significant point, or aerodrome, or controlled airspace boundary.

5.8.19. When prior coordination has been effected with units under whose control the aircraft will subsequently come, or if there is reasonable assurance that it can be effected a reasonable time prior to their assumption of control, the clearance limit will be the destination aerodrome or, if not practicable, an appropriate intermediate point, and coordination will be expedited so that a clearance to the destination aerodrome may be issued as soon as possible.

5.8.20. When the destination aerodrome is outside controlled airspace, Dhangadhi tower responsible for the last controlled airspace through which an aircraft will pass will issue the appropriate clearance for flight to the limit of that controlled airspace.

5.8.21. The route of flight will be detailed in each clearance when deemed necessary. The phrase "cleared via flight planned route" may be used to describe any route or portion thereof provided the route or portion thereof is identical to that filed in the flight plan and sufficient routing details are given to definitely establish the aircraft on its route. The phrases "cleared via (designation) departure" or "cleared via (designation) arrival" may be used when standard departure or arrival routes have been established and published in Aeronautical Information Publications (AIP) Nepal.

5.8.22. The phrase "cleared via flight planned route" will not be used when granting a re-clearance.

5.8.23. Subject to airspace constraints, ATC workload and traffic density, and provided coordination can be affected in a timely manner; an aircraft will whenever possible be offered the most direct routing.

Note – See article 6.3.2.3 of MATS, Nepal-2014 pertaining to standard clearances for departing aircraft and article 6.5.2.3 of MATS, Nepal-2014 pertaining to standard clearances for arriving aircraft.

5.8.24. When issuing a clearance covering a requested change in route or level, the exact nature of the change will be included in the clearance.

5.8.25. When traffic conditions will not permit clearance of a requested change, the word "UNABLE" will be used. When warranted by circumstances, an alternative route or level will be offered.

5.8.26. **Read back Clearance**

5.8.26.1. The flight crew will read back to the air traffic controller safety-related parts of ATC clearances and instructions which are transmitted by voice. The items as specified in article 4.5.7.5.1 of MATS, Nepal-2014 will always be read back.

5.8.26.1. Other clearances or instructions will be read back or acknowledged in a manner to clearly indicate that they have been understood and will be complied with.

5.8.26.1. The controller will listen to the read back to ascertain that the clearance or instruction has been correctly acknowledged by the flight crew and will take immediate action to correct any discrepancies revealed by the read back.

5.8.27. **Change from IFR to VFR Flight**

5.8.27.1. Change from IFR flight to VFR flight will only be acceptable when a message initiated by the pilot-in-command containing the specific expression "CANCELLING MY IFR FLIGHT", together with the changes, if any, to be made to the current flight plan, is received by by Dhangadhi TWR. Dhangadhi TWR will not invite to change from IFR flight to VFR flight to be made either directly or by inference.

5.8.27.2. No reply, other than the acknowledgment "IFR FLIGHT CANCELLED AT ... (time)", will be made by the controller.

5.8.27.3. When Dhangadhi tower is in possession of information that IMC are likely to be encountered along the route of flight, a pilot changing from IFR flight to VFR flight if practicable, will be advised.

5.8.27.4. The Dhangadhi TWR receiving notification of an aircraft's intention to change from IFR to VFR flight will, as soon as practicable thereafter, so inform all other ATS units to whom the IFR flight plan was addressed, except those units through whose regions or areas the flight has already passed.

5.9. HORIZONTAL AND VERTICAL SPEED CONTROL

5.9.1. In order to facilitate a safe and orderly flow of traffic, aircraft may be instructed to adjust speed in a specified manner. Flight crews will be given adequate notice of planned speed control.
Note 1.— Application of speed control over a long period of time may affect aircraft fuel reserves.

5.9.2. Speed control instructions shall remain in effect unless explicitly cancelled or amended by the controller.
Note: Cancellation of any speed control instruction does not relieve the flight crew of compliance with speed limitations associated with airspace classification as specified in Annex 11-Air Traffic Services, Appendix 4.

5.9.3. In order to establish a desired spacing between two or more successive aircraft, the controller will first reduce the speed of the last aircraft, or increase the speed of the lead aircraft, then adjust the speed(s) of the other aircraft in order.

5.9.4. In order to maintain a desired spacing using speed control techniques, specific speeds need to be assigned to all the aircraft concerned.

5.9.5. Descending and arriving aircraft will, when practicable, be authorized to absorb a period of notified terminal delay by cruising at a reduced speed for the latter portion of its flight.

5.9.6. Speed control will not be applied to aircraft after passing a point 4 NM from the threshold on final approach.

5.9.7. An aircraft may be instructed to expedite climb or descent as appropriate to or through a specified level, or may be instructed to reduce its rate of climb or rate of descent.

5.9.8. Aircraft will be advised when a rate of climb/descent restriction is no longer required.

5.9.9. Aircraft will be advised when a speed control restriction is no longer required.

5.10. ALTIMETER SETTING PROCEDURES

5.10.1. For flights within Kathmandu FIR, the vertical position of aircraft will be expressed in terms of altitudes at or below the transition altitude and in terms of flight levels at or above the transition level. While passing through the transition layer, vertical position will be expressed in terms of flight levels when climbing and in terms of altitudes when descending.

5.10.2. A common transition altitude of 13500ft. has been established for the entire Kathmandu Flight Information Region.

5.10.3. A transition level of FL 150 has been established for the entire Kathmandu Flight Information Region.

5.10.4. All aircraft operating in Dhangadhi control zone will use Dhangadhi QNH supplied by Dhangadhi TWR.

5.10.5. Change of Altimeter setting from DH QNH to 1013.2 hpa during climb will be in the transition layer.

5.10.6. Change of Altimeter setting form 1013.2 HPA to Dhangadhi QNH during descend will be in the transition layer.

5.10.7. Flight operating at or below transition altitude will change Kathmandu QNH to Dhangadhi QNH and vice versa at Dhangadhi Control Zone boundary.

5.10.8. Cruising within the transition layer is not permitted.

5.10.9. A QNH altimeter setting will be made available to aircraft by approach/aerodrome control in the routine take off and climb instructions.

5.10.10. Vertical displacement of aircraft during climb will be effected by reference to altitude until reaching the transition altitude above which vertical displacement will be effected by reference to flight level.

5.10.11. Aircraft en-route (irrespective of whether IFR or VFR) will be flown at flight levels or altitudes where appropriate.

5.10.12. For the purposes of en-route vertical separation between IFR and VFR flights in controlled airspace and flights in uncontrolled airspace, reference should be made to the following:

a) Quadrantal system of cruising levels at or below 13,500ft
b) Semi-circular system of cruising levels at or above FL150

5.10.13. A QNH altimeter setting will be made available in the routine approach and landing instructions.

5.10.14. Vertical displacement of aircraft during approach is effected by reference to flight level until reaching the transition level below which vertical displacement is effected by reference to altitude.

5.10.15. *Minimum cruising level for IFR flights*: Except when specifically authorized, cruising levels below the minimum flight altitudes established will not be assigned.

5.10.16. *Provision of altimeter setting information*: Dhangadhi Tower will at all times have available for transmission to aircraft in flight, on request, the information required to determine the lowest flight level which will ensure adequate terrain clearance on routes or segments of routes for which this information is required.

5.10.17. A QNH altimeter setting will be included in the descent clearance when first cleared to an altitude below the transition level, in approach clearances or clearances to enter the traffic circuit, and in taxi clearances for departing aircraft, except when it is known that the aircraft has already received the information.

5.10.18. Altimeter settings provided to aircraft will be rounded down to the nearest lower whole HPA.

5.11. POSITION REPORTING

5.11.1. **Transmission of position reports**

5.11.1.1. On routes defined by designated significant points, position reports will be made by the aircraft when over or as soon as possible after passing, each designated compulsory reporting point. Additional reports over other points may be requested by the Dhangadhi tower.

5.11.1.2. The controller responsible for obtaining the position report will also be responsible for checking its details and in particular the pilots estimate for the next position report.

5.11.1.3. If a position report is not received at the expected time, subsequent control will not be based on the assumption that the estimated time is accurate. Immediate action will be taken to obtain the report if it is likely to have any bearing on the control of other aircraft.

5.11.1.4. Estimates for all subsequent reporting points within the jurisdiction of the unit concerned will be amended in accordance with the pilot's revised estimated ground speed.

5.11.1.5. If the controller is aware of any facts likely to be useful to the pilot in estimating ground speeds over any route segment e.g. head or tail wind components found by other aircraft, he/she will inform the pilot accordingly. If practicable, this should be done before the pilot makes his/ her estimates for the rout segment concerned.

5.11.1.6. The level in the position report will be in accordance with that authorized and if different, will be checked at once with the aircraft itself. If there is any doubt about the

actual level occupied by the reporting aircraft, action will be taken immediately to safeguard other aircraft. If it is found that the aircraft is occupying a level different from that authorized, appropriate instructions will be issued to maintain separation standards.

Note: - A pilot is required to report his/her level with all frequency changes. These will be checked if omitted by the pilot.

5.11.2. Contents of Voice Position Reports

5.11.2.1. The position reports required by 5.13.1.1. will contain the elements of information, as specified in article 4.11.2.1, Chapter 4 of MATS 2014, Nepal.

5.11.2.2. *Radiotelephony procedures for air-ground voice communication channel changeover*: When so prescribed by DHCAO, the initial call to Control tower after a change of air-ground voice communication channel will contain the elements as specified in article 4.11.3. Chapter 4 of MATS 2014, Nepal.

5.11.3. Reporting of Operational and Meteorological Information

5.11.3.1. When operational and/or meteorological information is to be reported, by an aircraft en route at times where position reports are required in accordance with 5.13.1.1, the special aircraft observations will be reported as special air-reports as soon as practicable.

5.11.3.2. Special air-reports will be made by all aircraft whenever the conditions mentioned in article 4.12.2.1, of MATS, Nepal-2014 are encountered or observed.

5.11.3.3. When receiving special air-reports by voice communications, Dhangadhi Tower will forward them without delay to their associated meteorological watch offices and concerned flights.

5.12. VVIP MOVEMENT HANDLING PROCEDURE

5.12.1. In order to facilitate the movement of VVIP aircraft into and out of Kathmandu FIR and to conform to the times shown in the Ceremonial Reception Schedule, Dhangadhi control Tower is authorized to provide special priority for all VVIP fights over all other normal traffic within their areas of responsibility,

5.12.2. The term "VVIP FLIGHT" over Nepal refers to the flight carrying on- board the under mentioned:

a) The President
b) The Vice President
c) The Prime Minister

5.12.3. Flights within Nepal of other reigning sovereigns, Head of the States and the Prime Minister of foreign countries designated by the Government of Nepal to be VVIP may also be afforded "VVIP Flight" status.

5.12.4. The Airport Chief, and/or Air Traffic Services Chief, DHCAO will inform all concerned relating to VVIP flight some or all of the following details:

a) Period and area of restrictions imposed on other fights.
b) Call sign and type of aircraft,
c) Point of departure/destination
d) Embarkation/disembarkation site
e) EOBT and ETA
f) Ceremonial details
g) Any other pertinent information

5.12.5. Message received from VVIP on-board will be kept highly confidential and will reported to Airport Manager.

5.12.6. The following procedures will be enforced when a VVIP FLIGHT is notified.

a) A NOTAM based on the schedule of the VVIP flight movement will be issued in advance.
b) No aircraft except in emergency be allowed to land or depart from the aerodrome or operate in the aerodrome traffic circuit for the period specified in the NOTAM.

Note: The airport Chief may adjust the timing to ensure that there are no disturbances during ceremonial period at the airport.

5.12.7. Operation within Controlled Airspace

Standard separation will be provided in controlled airspaces. Vertical separation minimum will be 1000ft at all levels.

5.12.8. Operation outside Controlled Airspace

No other aircraft will be cleared to operate in the block of uncontrolled airspaces 1000ft below and above the cruising level and 10NM on either side of the intended route of the VVIP flight.

CHAPTER 6

PROCEDURES FOR AERODROME CONTROL SERVICE

DHANGADHI AERODROME CONTROL TOWER	
CALL SIGN	DHANGADHI TOWER
VHF FREQUENCY (ADC)	122.3MHZ
HF FREQUENCY	5805.5 KHZ

Table-2

Note: Details Information about the Dhangadhi Airport (VNDH) and its Operation are mentioned in Part: AD 2 of AIP, Nepal.

6.1. ATC SERVICES PROVIDED BY DHANGADHI TOWER

6.1.1. Aerodrome control service and approach control service are provided by Dhangadhi tower to all aerodrome traffics in ATZ and within Control zone.

6.1.2. Dhangadhi tower will issue information and clearances to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic on and in the vicinity of an aerodrome with the object of preventing collision(s) between:

a) aircraft flying within the designated area of its responsibility;
b) aircraft operating on the maneuvering area;
c) aircraft landing and taking off;
d) aircraft, vehicles and personnel operating on the maneuvering area;
e) aircraft on the maneuvering area and obstructions on that area.

6.1.3. Dhangadhi Tower will maintain a continuous watch on all flight operating on or in the vicinity as well as vehicles and personnel on the maneuvering area of Dhangadhi aerodrome. Watch will be maintained by visual observation. Traffic will be controlled in accordance with the procedures set forth herein and all applicable traffic rules specified by the Civil Aviation Authority of Nepal.

6.1.4. The functions of an Dhangadhi Aerodrome Control tower is as follows:

a) Dhangadhi aerodrome controller, normally responsible for operations on runway and aircraft flying within the area of responsibility of the Dhangadhi Control tower;

b) Dhangadhi aerodrome controller, normally responsible for traffic on the maneuvering area of Dhangadhi aerodrome.

c) Aerodrome controller, normally responsible for delivery of start-up and ATC clearances to all flights operating in Dhangadhi aerodrome .

6.1.5. Dhangadhi Tower Controllers will maintain a continuous watch on all appropriate radio frequencies and conduct all air-ground communications in accordance with these instructions and those contained in the AIP.

6.1.6. Company messages concerned with the safety of the aircraft will be accepted for transmission. The transmission of other company messages will be at the discretion of the Dhangadhi controller. Messages unless concerned with the immediate safety of the aircraft will not be passed to the aircraft which has been cleared for take-off and has entered the runway. Transmission of these messages will be delayed until the aircraft is airborne.

6.1.7. An aircraft operating locally may be required to report Dhangadhi Tower at specified time or position at nominated reporting points.

6.2. ALERTING SERVICE PROVIDED BY DHANGADHI TOWER

6.2.1. Dhangadhi tower is responsible for alerting the rescue and fire-fighting services whenever:

a) an aircraft accident has occurred on or in the vicinity of the aerodrome; or,
b) information is received that the safety of an aircraft which is or will come under the jurisdiction of the Dhangadhi tower may have or has been impaired; or
c) requested by the flight crew; or
d) when otherwise deemed necessary or desirable

6.2.2. Aircraft which fail to report after having been transferred to Dhangadhi tower, or, having once reported, cease radio contact and in either case fail to land five minutes after the expected landing time, will be reported to the Kathmandu ACC and/or to the Rescue Coordination Centre.

6.3. SELECTION OF RUNWAY-IN-USE

6.3.1. The term “runway-in-use” will be used to indicate the runway at a particular time is considered by the Dhangadhi tower to be the most suitable for maximum use by the types of aircraft expected to land or take-off at the aerodrome.

6.3.2. Normally, an aircraft will land and take off into the wind unless safety, the runway configuration, meteorological conditions and air traffic conditions determine that a different direction is preferable. In selecting the runway-in-use, however, Dhangadhi Tower will take into consideration, besides surface wind speed and direction, other relevant factors such as the aerodrome traffic circuits, the length of runways, and the approach and landing aids available.

6.3.3. If the runway-in-use is not considered suitable for the operation involved, the flight crew may request Dhangadhi ATC for permission to use another runway and, if circumstances permit, will be cleared accordingly.

6.3.4. Dhangadhi Tower controller will nominate for use, the runway which appears to be most suitable, taking into consideration:

a) type of aircraft
b) effective length of the runway

c) wind velocity / downwind component
d) weather phenomena including such things as wind gradients turbulence effects and position of sun
e) disposition of the traffic
f) if work load and traffic conditions permit, local instructions on "preferred runways'' in particular wind conditions to avoid noise nuisance and runway deterioration.

6.3.5. Dhangadhi Tower controller may authorize a departure from a runway intersection when requested by the pilot or may offer an intersection departure to assist traffic flow for those types of aircraft not exceeding STOL Type aircrafts. The pilot will be advised of the remaining runway length if such information is not readily available to the pilot.

6.4. SELECTION OF CIRCUIT DIRECTION

6.4.1. The turn and circuit direction will be specified by the Dhangadhi aerodrome controller for particular traffic needs.

6.4.2. The pilot in command is responsible for advising the Dhangadhi controller when a particular turn is essential to the safety of the aircraft for any reasons. This does not necessarily preclude the issue of instructions in anticipation of a pilot's advice.

6.5. ENTRY OF TRAFFIC CIRCUIT

6.5.1. The clearance to enter the traffic circuit will be issued to an aircraft approaching the landing area in accordance with current traffic circuits but traffic conditions do not yet allow a landing clearance to be issued. Depending on the circumstances and traffic conditions, an aircraft may be cleared to join at any position in the traffic circuit.

6.5.2. An arriving aircraft executing an instrument approach will normally be cleared to land straight in unless visual maneuvering to the landing runway is required.

6.6. INFORMATION TO AIRCRAFT BY DHANGADHI TOWER

6.6.1. Dhangadhi Tower will provide Fight information service to all aircraft which are likely to be affected by the information and which are:
a) provided with air traffic control service;
b) Otherwise known to the relevant air traffic services units

6.6.2. Flight information service will include the provision of pertinent:
a) Weather information;
b) information on changes in the serviceability of navigation aids;
c) information on changes in condition of aerodromes and associated facilities, including information on the state of the aerodrome movement areas when they are affected by snow ice or significant depth of water;
d) weather conditions reported or forecast at departure, destination and alternate aerodromes;
e) any other information likely to affect safety.

6.7. AERODROME AND METEOROLOGICAL INFORMATION

6.7.1. Prior to take-off aircraft, the information of element as specified in article 7.4.1.2.1 and 7.4.1.2.2, Chapter 7 of MATS 2014, Nepal will be advised in the order listed, with the exception of such elements which it is known the aircraft has already received.

Note.— Significant meteorological conditions in this context include the occurrence or expected occurrence of cumulonimbus or thunderstorm, moderate or severe turbulence, wind shear, hail, moderate or severe icing, severe squall line, freezing precipitation, dust storm, tornado in the take-off and climb-out area.

6.7.2. Prior to entering the traffic circuit or commencing its approach to land, Dhangadhi Tower will provide all aircraft with the elements of information as specified in article 7.4.1.2.3, Chapter 7 of MATS 2014, Nepal in the order listed as applicable with the exception of such elements which it is known the aircraft has already received.

6.7.3. Aerodrome Weather Observations

6.7.3.1. Dhangadhi Aerodrome Controller will be the sole authority responsible for opening or closing an aerodrome to arrivals and departures. Pilots will be advised of observed weather conditions necessary for the purpose of landing and take-off and of significant weather, i.e. any weather phenomenon which might affect flight visibility or presence of a hazard to an aircraft.

6.7.3.2. Dhangadhi Aerodrome controller will use his own observations for determining whether the prevailing conditions are above or below the minima prescribed for aircraft operations.

6.7.3.3. When observing weather conditions, Dhangadhi aerodrome controller may either make his observations over the whole of the visual horizon (general observations) or restrict the area considerations to that enclosing the probable flight path of the aircraft (sector observations). Sector observations may be made in any direction in order to accommodate both fixed and rotary wing operations.

6.7.3.4. In the specific cases covered by the following subparagraphs, the aerodrome controller will make either sector or general observations as specified.

a) Observations for the purpose of closing the aerodrome and for authorizing a flight will be sector observations.

b) Observations made in response to a request by another unit will be general observations.

6.7.3.5. Weather observation for departure and landing will includes such of the element of the items as are significant to the circumstance as mentioned in article 7.4.1.3.7, Chapter 7 of MATS 2014, Nepal.

6.7.3.6. Final decision on weather analysis, closure and open of aerodrome rests on aerodrome controller on duty.

6.8. ESSENTIAL LOCAL TRAFFIC INFORMATION

6.8.1. Information on essential local traffic will be issued in a timely manner in the judgment of the aerodrome controller, such information is necessary in the interests of safety, or when requested by aircraft.

6.8.2. Essential local traffic will be considered to consist of any aircraft, vehicle or personnel on or near the maneuvering area or traffic operating in the vicinity of the aerodrome, which may constitute a hazard to the aircraft concerned.

6.8.3. Essential local traffic will be described so as to be easily identified.

6.9. RUNWAY INCURSION OR OBSTRUCTED RUNWAY

6.9.1. In the event Dhangadhi aerodrome controller, after a take-off clearance or a landing clearance has been issued, becomes aware of a runway incursion or the imminent occurrence thereof, or the existence of any obstruction on or in close proximity to the runway likely to impair the safety of an aircraft taking off or landing, appropriate action will be taken as follows:

a) cancel the take-off clearance for a departing aircraft;
b) instruct a landing aircraft to execute a go-around;

6.9.2. In all cases inform the aircraft of the runway incursion or obstruction and its location in relation to the runway.

6.9.3. Any occurrence involving an obstruction on the runway or a runway incursion, pilots and controllers will complete an air traffic incident report in accordance with the ICAO model air traffic incident report form mentioned in Appendix 5 of MATS, Nepal-2014.

6.10. WAKE TURBULENCE AND HELICOPTERS OPERATION

6.10.1. *General Caution*: In issuing clearances or instructions, Dhangadhi controllers will take into account the hazards caused by propeller slipstream to taxiing aircraft, to aircraft taking off or landing, particularly when intersecting runways are being used, and to vehicles and personnel operating on the aerodrome.

6.10.2. *Note.— The propeller slipstream can produce localized wind velocities of sufficient strength to cause damage to other aircraft, vehicles and personnel operating within the affected area.*

6.10.3. Wake turbulence separation minima will be based on a grouping of aircraft types into three categories according to the maximum certificated take-off as specified in article 4.9.1.1. Chapter 4 of MATS 2014, Nepal.

6.10.4. Helicopters will be kept well clear of light aircraft when hovering or while air taxiing.

6.10.5. When it is requested or necessary for a helicopter to proceed at a slow speed above the surface, normally below 37 km/h (20 kts) and in ground effect, air taxiing may be authorized except for the larger and heavier helicopters (e.g. MI8).

6.10.6. Instructions which require small aircraft or helicopters to taxi in close proximity to taxiing helicopters will be avoided and consideration will be given to the effect of turbulence from taxiing helicopters on arriving and departing light aircraft.

6.11. ABNORMAL AIRCRAFT CONFIGURATION AND CONDITION

6.11.1. Whenever an abnormal configuration or condition of an aircraft, including conditions such as landing gear not extended or only partly extended, or unusual smoke emissions from any part of the aircraft, is observed by or reported to the Dhangadhi aerodrome controller, the aircraft concerned will be advised without delay.

6.11.2. When requested by the flight crew of a departing aircraft suspecting damage to the aircraft, the departure runway used will be inspected by Dhangadhi Controller without delay and the flight crew be advised in the most expeditious manner as to whether any aircraft debris or bird or animal remains have been found or not.

6.12. ESSENTIAL INFORMATION ON AERODROME CONDITIONS

6.12.1. Essential information on aerodrome conditions is information necessary to safety in the operation of aircraft, which pertains to the movement area or any facilities usually associated therewith. For example, construction work on a taxi strip not connected to the runway-in-use would not be essential information to any aircraft except one that might be taxied in the vicinity of the construction work. As another example, if all traffic will be confined to runways, that fact will be considered as essential aerodrome information to any aircraft not familiar with the aerodrome.

6.12.2. Essential information on aerodrome conditions will include information relating to the elements as specified in article 7.5.2, Chapter 7 of MATS 2014, Nepal.

Note. — Up-to-date information on the conditions on apron may not always be available to the Dhangadhi control tower. The responsibility of the control tower in relation to aprons is limited to the transmission to aircraft of the information which is provided to it by the authority responsible for the apron i.e the airline operators.

6.12.3. Essential information on Dhangadhi aerodrome conditions will be given to every aircraft, except when it is known that the aircraft already has received all or part of the information from other sources. Dhangadhi Tower will give those information in sufficient time for the aircraft to make proper use of it, and the hazards will be identified as distinctly as possible.

Note.— "Other sources" include NOTAM and the display of suitable signals.

6.12.4. When a previously non-notified condition pertaining to the safe use by aircraft of the maneuvering area is reported to or observed by the Dhangadhi controller, the Airport Chief will be informed and operations on that part of the maneuvering area terminated until otherwise advised.

6.13. MESSAGES CONTAINING INFORMATION ON AERODROME CONDITIONS

6.13.1. Whenever information is provided on aerodrome conditions, this will be done in a clear and concise manner so as to facilitate appreciation by the pilot of the situation

described. It will be issued whenever deemed necessary by Dhangadhi controller on duty in the interest of safety, or when requested by an aircraft.

6.13.2. Information that water is present on a runway will be transmitted to each aircraft concerned, on the initiative of the controller.

6.14. CONTROL OF AERODROME TRAFFIC

6.14.1. As the view from the flight deck of an aircraft is normally restricted, Dhangadhi Controller will ensure that instructions and information which require the flight crew to employ visual detection, recognition and observation are phrased in a clear, concise and complete manner.

6.14.2. The positions of aircraft as specified in article 7.6.2 and as mentioned in figure 7-1, Chapter 7 of MATS 2014, Nepal, in the traffic and taxi circuits are the designated positions where the aircraft normally receive Tower clearances. The aircraft will be watched closely as they approach those positions so that proper clearances may be issued without delay.

6.14.3. Where practicable, all clearances will be issued without waiting for the aircraft to initiate the call.

6.14.4. **Taxi Clearance**

6.14.4.1. Prior to issuing a taxi clearance, Dhangadhi Tower controller will determine where the aircraft concerned is parked. Taxi clearances will contain concise instructions and adequate information so as to assist the flight crew to follow the correct taxi routes with appropriate designators, to avoid collision with other aircraft or objects and to minimize the potential for the aircraft inadvertently entering an active runway.

6.14.4.2. When a taxi clearance contains a taxi limit beyond a runway, it will contain an explicit clearance to cross or an instruction to hold short of that runway.

6.14.5. **Taxiing on Runway-In-Use**

6.14.5.1. For the purpose of expediting air traffic, aircraft may be permitted to taxi on the runway-in-use, provided no delay or risk to other aircraft will result.

6.14.5.2. If Dhangadhi control tower is unable to determine that a vacating or crossing aircraft has cleared the runway, the aircraft will be requested to report when it has vacated the runway. The report will be made when the entire aircraft is beyond the relevant runway-holding position.

6.14.6. **Use of Runway-Holding Positions**

6.14.6.1. Aircraft will not be held closer to a runway-in-use than at a runway-holding position.

6.14.6.2. Aircraft will not be permitted to line up and hold on the approach end of a runway-in-use whenever another aircraft is affecting a landing, until the landing aircraft has passed the point of intended holding.

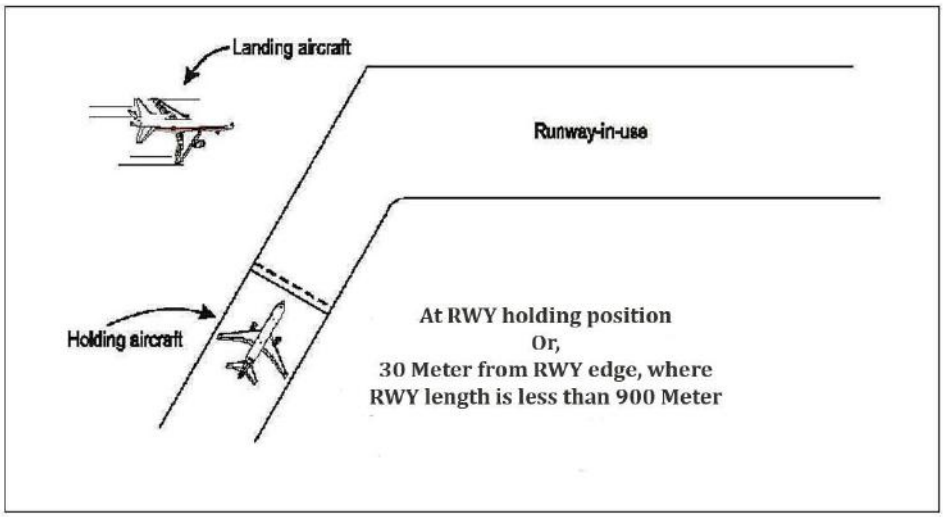


Fig-1: Method of holding aircraft

6.15. CONTROL OF OTHER THAN AIRCRAFT TRAFFIC

6.15.1. *Entry to the Maneuvering Area*: The movement of pedestrians or vehicles on the maneuvering area will be subject to authorization by the Dhangadhi control tower. Hence they will be required to obtain authorization from the Dhangadhi control tower to enter the maneuvering area. Notwithstanding such an authorization, entry to a runway or runway strip or change in the operation authorized will be subject to a further specific authorization.

6.15.2. *Priority on the Maneuvering Area*: All vehicles and pedestrians will give way to aircraft which are landing, taxiing or taking off, except that emergency vehicles proceeding to the assistance of an aircraft in distress will be accorded priority over all other surface movement traffic. In the latter case, all movement of surface traffic will, to the extent practicable, be halted until it is determined that the progress of the emergency vehicles will not be impeded.

6.15.3. When an aircraft is landing or taking off, vehicles will not be permitted to hold closer to the runway-in-use than:

a) at a taxiway/runway intersection — at a runway holding position; and
b) at a location other than a taxiway/runway intersection — at a distance equal to the separation distance of the runway-holding position.

6.15.4. **Communication Requirements and Visual Signals**

6.15.4.1. All vehicles employed on the maneuvering area will be capable of maintaining two-way radio communication with the Dhangadhi control tower, except when the vehicle is only occasionally used on the maneuvering area and is:

a) accompanied by a vehicle with the required communications capability, or
b) employed in accordance with a pre-arranged plan established with the Dhangadhi control tower.

6.15.4.2. When employed in accordance with a plan pre-arranged with Dhangadhi control tower, constructional and maintenance personnel will normally required to be capable of maintaining two-way radio communication via walkie-Talkie set with the Dhangadhi tower.

6.15.4.3. In the case of radio communication failure, the lighting signals and its meaning are as indicated in article 7.6.3.1.5.1 of MATS, Nepal-2014, will be transmitted to aircraft by Dhangadhi Tower as applicable.

6.16. CONTROL OF DEPARTING AIRCRAFT

6.16.1. *Departure sequence***:** Departures will normally be cleared in the order in which they are ready for take-off, except that deviations may be made from this order of priority to facilitate the maximum number of departures with the least average delay. Factors which will be considered in relation to the departure sequence include as an example mentioned in article 7.9.1 of MATS, Nepal-2014.

6.16.2. General Procedures for Departing Aircraft

6.16.2.1. Departing aircraft may be expedited by suggesting a take-off direction which is not into the wind. It is the responsibility of the pilot-in-command of an aircraft to make a take-off or wait for take-off in a preferred direction.

6.16.2.2. Clearances for departing aircraft will specify, when necessary for the separation of aircraft, direction of takeoff and turn after take-off; heading or track to be made good before taking up the cleared departure track; level to maintain before continuing climb to assigned level; time, point and/or rate at which a level change will be made; and any other necessary maneuver consistent with safe operation of the aircraft.

6.16.2.3. *Separation of departing aircraft*: Except as provided in Chapter 5, article 5.8 of MATS, NEPAL-2014, a departing aircraft will not normally be permitted to commence take-off until the preceding departing aircraft has crossed the end of the runway-in-use or has started a turn or until all preceding landing aircraft are clear of the runway-in use. ***Note:*** *See Figure below:*

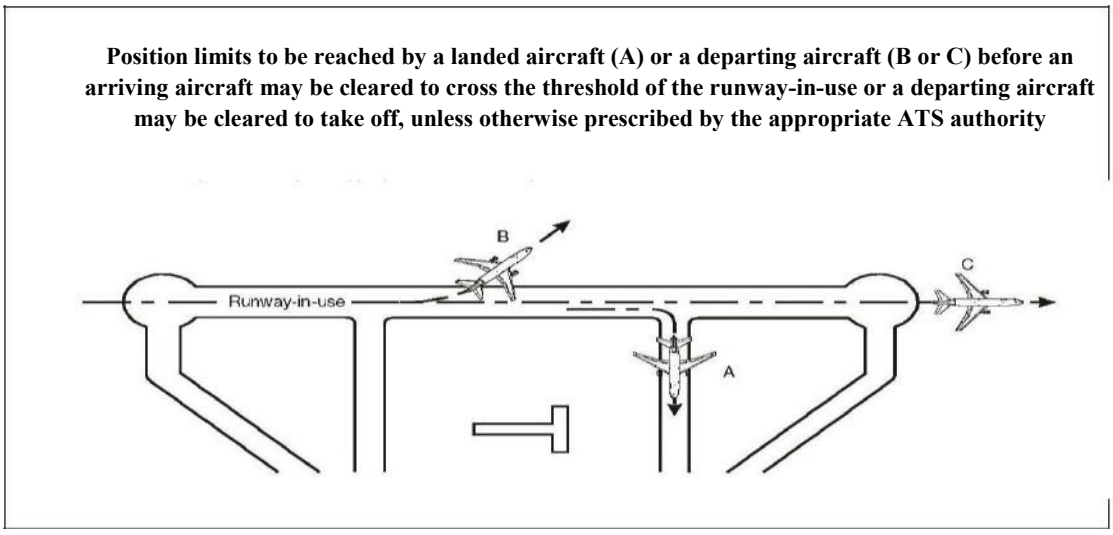


Fig 2: Separation between departing and arriving aircraft

6.16.3. **Engine starting procedures**

6.16.3.1. In order to maintain an orderly flow of traffic, the pilots of departing aircraft request a startup clearance to Dhangadhi Tower. When requesting a startup clearance, a pilot will indicate the runway he/she requires to use if limited to a particular runway and name of destination airport.

6.16.3.2. If it is anticipated that traffic conditions may cause a delay before issuance of a taxi clearances of more than 6 minutes, pilots will be issued with a recommended startup time.

6.16.3.3. *Clearance delivery*: Dhangadhi Tower will deliver standard ATC clearance to all departing aircraft prior to issue taxi clearance.

6.16.3.4. **Taxi Clearance and Provision of Information for Departure Traffic**

6.16.3.4.1. *Taxi Clearance*: Taxi clearance will be issued for the purpose of

a) providing the pilot with guidance to the appropriate runway.
b) providing routes which will involve the minimum of conflict with other traffic.
c) protecting other aircraft from the jet blast of heavy jets, helicopter downwash.

6.16.3.4.2. Dhangadhi Tower Controllers will not issue conditional taxi instructions that are dependent upon the movement of an arriving aircraft on or approaching the runway or a departing aircraft established on a take-off roll, e.g., do not say "cleared to line up and hold behind the landing traffic or line up and hold after departing traffic except when the aircraft or vehicles concerned are seen by the appropriate controller and pilot.

6.16.3.4.3. **Taxi information**

6.16.3.4.3.1. At the discretion of the Dhangadhi aerodrome controller, pilots in command of aircraft requesting permission to run up on the runway in use may be permitted. However when a suitable alternate is available, aircraft will normally be required to use this area, and will only be permitted to run up on the runway if it is certain that this will not delay arriving or other departing aircraft.

6.16.3.4.3.2. An aircraft operating on the ground will be warned of jet blast or downwash of helicopters.

6.16.3.5. **Take off information**

6.16.3.5.1. Dhangadhi Tower controller will provide to each aircraft under his/her control, the following information for take-off purposes as required:

a) The mean and maximum crosswind components;
   i. when the mean component equals or exceeds 8 knots for single-engine aircraft and 12 knots for multi-engine aircraft; or
   ii. when requested by the pilot.
b) The cross wind component may be interpolated.

6.16.3.6. **Intersection Departure**

6.16.3.6.1. An intersection departure is a departure from a point of intersection of a runway or taxiway with the active runway.

6.16.3.6.2. A pilot wishing to use less than the available full length of the runway will nominate his/her intentions whilst taxiing. Intersection departure may be initiated by the controller to expedite traffic for those type of aircraft not exceeding STOL type of aircrafts keeping in mind the type of aircraft, runway length available and wind condition etc. In any intersection departure, the controller will advise the pilot of the remaining length available before issuing take-off clearance. The responsibility for accepting an intersection departure rest solely on the pilot in command.

6.16.3.6.3. Phraseology will be as follows:

(Aircraft identification) RUNWAY (runway designator) INTERSECTION DEPARTURE FROM TAXIWAY INTERSECTION (taxiway designator) AVAILABLE or APPROVED, REMAINING LENGTH (feet) AVAILABLE.

6.16.3.6.4. **Take-off clearance**

6.16.3.6.4.1. An aircraft will be cleared to enter the runway and take-off in accordance with the priorities and maintaining the separation specified in this manual.

6.16.3.6.4.2. The take-off clearance will be issued when the aircraft is ready for take-off and at or approaching the departure runway and the traffic situation permits. To reduce the potential for misunderstanding, the take-off clearance will include the designator of the departure runway.

6.16.3.6.4.3. In the interest of expediting traffic, a clearance for immediate take-off may be issued to an aircraft before it enters the runway. On acceptance of such clearance the aircraft will taxi out to the runway and take off in one continuous movement.

6.16.3.6.4.4. Any requirement after departure will be communicated to the pilot before Takeoff.

6.16.3.6.4.5. When a taxing aircraft of heavier weight is followed by an aircraft of lesser weight, Dhangadhi Tower controller will not issue a line up immediate departure clearance that will require the aircraft of heavier weight to use more than normal taxing power to enter the runway.

6.16.3.6.4.6. Before clearing an aircraft for take-off, and immediately before it commences to take-off the aerodrome controller will make a visual check from the control tower to determine, as far as practicable, whether obstructions exist on or near the take-off area (runway strip). If there is any obstruction in respect of which continued operation has not been authorized or is not possible, Dhangadhi Tower controller will withhold or cancel the clearance until the obstruction is removed.

6.16.3.6.4.7. When departure separation is based on the position of a preceding landing aircraft and conditions preclude the Dhangadhi Tower controller from clearly observing that the landing aircraft vacated and is taxing away from the runway, conformation

of this maneuver will be obtained from the pilot in command prior to issuance of the take-off clearance.

6.16.3.6.4.8. Operation will normally be confined to the runway most suitable for the majority of the current traffic.

6.16.3.6.4.9. The expression TAKE-OFF will only be used in radiotelephony when an aircraft is cleared for take-off or when cancelling a take-off clearance. they will be used as the last word of the take-off clearance except that an instruction specifying a turn or circuit direction to be made after departure will be placed after the words "TAKE-OFF".

6.16.3.6.4.10. Before Authorizing a Take-off, Dhangadhi aerodrome controller will, by his/her own visual observations, be reasonably satisfied that the weather conditions in the sector of airspace enclosing the normal path of a civil aircraft's take-off and initial climb are not below the minima applicable to the particular flight.

6.16.3.6.4.11. An aircraft will not be cleared for take-off when weather conditions do not meet the requirement or when in the opinion of the Tower controller, the cumulative effects of small amounts of cloud at various levels below the minimum ceiling constitute a hazard in regard to obstructions in the take-off and initial climb area.

6.16.3.6.4.12. An aircraft will also not be cleared for take-off when hazardous weather conditions are expected to exist. Such conditions might be a violent wind change, a heavy rain storm, or known sever convective turbulence moving over the runway during take-off or affecting the flight path after airborne.

6.17. CONTROL OF ARRIVING AIRCRAFT

6.17.1. Determining of aircraft position

6.17.1.1. As necessary, aircraft will be requested to report their positions by reference to navigation aids, by a distance and direction (e.g. 5 miles NE) from the aerodrome, or by reference to one of the legs of a traffic circuit. Locally known place names will be used which are readily discernible on the appropriate aeronautical chart. Where established, visual fix points may be used for position reporting purposes.

6.17.1.2. In addition to a radio watch, the Dhangadhi aerodrome controller will maintain, as far as practicable, a continuous watch with the unaided eye and, if necessary with binoculars, for the purpose of determining the position and ensuring the safety of aircraft. In particular, attention will be paid to an aircraft suffering radio failure.

6.17.1.3. A controller's visual determination of the relative distance of aircraft close to each other can be seriously in error, even to the extent of reversing the position of the two aircraft. This is particularly so when two aircraft of similar sizes are being considered.

6.17.1.4. In providing visual separation, Dhangadhi Aerodrome controllers will rely primarily on separation in azimuth, and not by distance or height. Visual separation by judgment of relative distance or height will be used only when the margins are so wide that there is no possibility of the aircraft being close to each other. Corroborative evidence from the pilot of one aircraft of the relative position of another aircraft will be obtained whenever possible before the application of visual separation.

6.17.1.5. Visual determination of position is not complete until aircraft identity has been established to the extent required for the adequate provision of traffic information or visual separation. Positive identifying action will be taken by the controller before providing visual separation between arriving aircraft during the hours of daylight as follows:

a) Identification by type, or distinguished markings if the same type; or
b) Change the heading of one the aircraft concerned.

6.17.1.6. The Dhangadhi Tower controller may instruct a following aircraft to sight-and-follow a preceding aircraft. In exercising such control, it is essential that the pilot of the following aircraft correctly identifies the aircraft he/she is to follow. To assist pilot in proper identification, the controller will;

a. Specify the type if the aircraft to be followed and if an unfamiliar type a brief description of the aircraft;
b. Provide accurate position information on the preceding aircraft using direction and distance or position in the circuit; geographical features will only be used if depicted on relevant charts or the feature is regularly used in the control of locally operating aircraft; and
c. Advise the pilot of the following aircraft of his number in the landing sequence.

6.17.1.7. In the case of formation flights by military operation, the controller will advise only the leader of the formation, and he individual aircraft will be responsible for landing. Before issuing any control clearance requiring that the pilot of one aircraft keep another in sight, the Dhangadhi aerodrome controller will bear in mind the following limitations to the pilot's ability to do this:

a) the field view from the cockpit:
b) the contrast formed by an aircraft with its background;
c) glare from the sun;
d) Restriction on visibility which may not be currently apparent to the pilot e.g. loss of forward visibility following descent into a haze layer.

6.17.1.8. Dhangadhi aerodrome controller will issue an alternative clearance if there is any doubt about the ability of the pilot to see the position of the other aircraft for the duration of the originally proposed clearance.

6.17.2. **Regulation of circuit traffic**

6.17.2.1. Arriving aircraft will enter the traffic circuit in a landing sequence as instructed by Dhangadhi aerodrome controller.

6.17.2.2. For each type of aircraft engaged in airline operation, there is a normal circuit pattern which is largely dictated by the operating characteristics of the particular type. Thus, in spacing arriving aircraft during a landing sequence, controllers will pay due regard to these different circuit patterns. Nevertheless, to prevent cumulative delays to following aircraft, a pilot may be requested to make a short approach. Circuit diagram is mentioned in AIP.

6.17.2.3. If an aircraft suffering radio failure enters the traffic circuits in such a manner that the Dhangadhi aerodrome controller is doubtful whether sufficient spacing from

another aircraft can be maintained, Dhangadhi Tower controller will request the radio equipped aircraft to give way.

6.17.3. Landing information and landing clearances

6.17.3.1. Landing information

6.17.3.1.1. Dhangadhi aerodrome controller will provide each aircraft under his/her control the following information as applicable for landing purposes with the exception of such elements, which it is known, the aircraft have already received:

a) runway;
b) wind velocity, QNH and temperature;
c) known significant weather information;
d) aerodrome surface conditions and the presence of birds;
e) the mean and maximum crosswind components:
when the mean component equals or exceeds 8 knots for single-engine aircraft or 12 knots for multi-engine aircraft; or when requested by the pilot;
f) any discernible downwind component;
g) possibility of wake turbulence.

6.17.3.1.2. Aircraft flying at low speed, especially near the point of take-off and landing, create turbulence in their wake. The severity of the turbulence created is proportional to the weight of the aircraft, and the degree to which a following aircraft will be affected is proportional to the difference in weights involved. This turbulence may have very serious effects upon succeeding aircraft, particularly those of significantly lesser weight. Whenever practicable, the aerodrome controller will advise aircraft of the expected occurrence of hazards caused by turbulence wake, by use of the phrase "CAUTION- WAKE TURBULANCE" however, as the occurrence and persistence of turbulent wake hazards cannot be predicated accurately it may not be possible to issue advice on such hazards at all times. Nevertheless, the prescribed separation standards for wake turbulence avoidance will always be applied as per this manual.

6.17.3.2. Landing Clearance

6.17.3.2.1. Before clearing an aircraft to land, and before the aircraft is committed to a landing, Dhangadhi aerodrome controller will make a visual check from the control tower to determine, as far as practicable whether obstructions exist on or near the landing area (runway strip).

6.17.3.2.2. Except as provided in para 6.18.3.2.1. Landing clearance will be issued to a pilot when the separation required has been established but not before either of the following conditions:

a) The aircraft has been sighted by the aerodrome controller, either approaching the end of the downwind leg, on base leg, or on the final leg of the circuit pattern, alternatively,

b) if a circling approach has been made, in an approximately equivalent position to the foregoing.

6.17.3.2.3. An aircraft will also not be cleared to land when hazardous weather conditions are expected to exist.

6.17.3.2.4. Dhangadhi Aerodrome controller will advise aircraft of any discernible down wind. This will be done at a time, which permits the pilot in command to nominate and land on another runway.

6.17.3.2.5. When the landing area is occupied by another aircraft, or is obstructed, the pilot of the approaching aircraft will be instructed as follows:

a) if it is assessed that the landing area will become available but a landing clearance cannot be issued immediately - CONTINUE APPROACH (follow later with the appropriate clearance) ; or

b) a landing aircraft will not be permitted to cross the beginning of the RWY on its final approach until the preceding departing aircraft crosses the end of the runway-in-use or has started a turn or until a preceding landing aircraft is clear of the runway in use; or

c) an aircraft may be cleared to land when there is reasonable assurance that the separation in (6.18.3.2.5,b) will exist. To reduce the potential for misunderstanding, the landing clearance will include the designator of landing runway.

d) if it is apparent that the landing area will not be available GO ROUND or, if in a position to do so, -ORBIT. (Instructions to commence a second approach or hold will follow).

6.17.3.2.6. When separation is based on the position of a preceding landing aircraft and conditions preclude the Dhangadhi aerodrome controller from clearly observing that the landing aircraft has vacated and is taxing away from the runway, conformation of this maneuver will be obtained from the pilot in command prior to issuance of the clearance to land.

6.17.3.2.7. Any special clearance or information relating to vacating off the runway after landing will, if practicable, be given with the landing clearance. The phraseology will be followed by “if feasible”.

6.17.4. Taxi after landing

6.17.4.1. Taxi clearance will be issued governing entry to and movement on the taxiway for the purpose of:

a) applying priorities as laid down in this manual;
b) providing the pilot with guidance to the apron area;
c) providing routes which would involve the minimum of conflict with other traffic;
d) protecting other aircraft from the jet blast of heavy jets and downwash of helicopters;

6.17.4.2. An aircraft known or believed to be the subject of unlawful interference or which for other reasons needs isolation from normal aerodrome activities will be cleared to designated isolated parking position. In Dhangadhi Airport, isolated parking position

has not been assigned; the aircraft will be cleared to a position in an area or areas as advised by the Airport Chief or in his absence by designated Tower Duty Officer. The taxi clearance will specify the taxi route to be followed up to the parking position. This route will be selected with a view to minimizing any security risks to the public, other aircraft and installations at the aerodrome. A pilot-in-command who is unfamiliar with the aerodrome may request "GUIDANCE TO TERMINAL". In providing this guidance, the controllers will issue specific instructions relating to taxiing of the aircraft. The taxi route to be followed will be progressively described, each section being specified in sufficient time for the pilot to recognize turning points, etc, and to take action. Taxiway letters, numbers or local designator, e.g. "Southern taxiway" will not be used.

6.17.4.3. Taxi clearances will not relate to movement on the apron areas, nevertheless, available essential information referring to her aircraft entering or leaving the same apron area will be given to an aircraft approaching the apron area.

6.17.4.4. An aircraft operating on the ground will be warned of helicopter downwash as appropriate.

6.17.5. **Landing and roll-out maneuvers**

6.17.5.1. When necessary or desirable in order to expedite traffic, a landing aircraft may be requested to:

a. land beyond the touchdown zone of the runway;
b. vacate the runway at a specified exit taxiway;
c. expedite vacating the runway.

6.17.5.2. In requesting a landing aircraft to perform a specific landing and/or roll-out maneuver, the type of aircraft, runway length, location of exit taxiways, reported braking action on runway and taxiway, and prevailing meteorological conditions will be considered.

6.17.5.3. If the pilot-in-command considers that he or she is unable to comply with the requested operation, the controller will be advised without delay.

6.17.5.4. When necessary or desirable, e.g. due to low visibility conditions, a landing or a taxiing aircraft may be instructed to report when a runway has been vacated. The report will be made when the aircraft is well clear of the runway.

6.18. ORDER OF PRIORITY

6.18.1. An aircraft landing or in the final stages of an approach to land will normally have priority over an aircraft intending to depart from the same or an intersecting runway.

6.18.2. If an aircraft enters an aerodrome traffic circuit without proper authorization Dhangadhi Tower, it will be permitted to land if its actions indicate that it so desires. If circumstances warrant, aircraft which are in contact with the Dhangadhi controller, may be instructed to give way so as to remove the hazard introduced by such unauthorized operation as soon as possible. In no case will permission to land be withheld indefinitely.

6.18.3. In cases of emergency, it may be necessary, in the interests of safety, for an aircraft to enter a traffic circuit and affect a landing without proper authorization. Dhangadhi Controllers will recognize the possibilities of emergency action and render all assistance possible.

6.18.4. Priority will be given to an aircraft as per the order mentioned in chapter 7, article 7.7.3.3. and 7.8 of MATS Nepal-2014.

6.19. RUNWAY CLOSURE

6.19.1. If the effect of any conditions (e.g. weather, navigation aids availability, airspace restrictions, etc.) creates the situation where no approach to land can be made, then the Runway will be closed for landing.

6.19.2. Similarly, when special circumstance exist which in the opinion of the aerodrome controller on duty, would make a landing or take-off hazardous, the controller will close the Runway to landing, take-off or all operations as appropriate.

6.19.3. The decisions to make a landing or take- off in cross wind or down wind conditions, wet runway or when the presence of birds has been notified, rest solely with the pilot–in–command.

6.19.4. When the Dhangadhi aerodrome is closed to aircraft for landing, take-off or all operations, the Dhangadhi aerodrome controller will notify all aircraft which are affected and which are listening on the appropriate tower frequency.

6.20. USE OF CLOSED RUNWAY IN EMERGENCY

6.20.1. When the Dhangadhi Runway is closed, and if a pilot declares an emergency or after advice from the aerodrome controller of any known alternatives courses of action, states that it will be safer to land than to adopt alternative action, all assistance to land at the aerodrome will be afforded to him and the incident will be reported as an Incident Report.

6.20.2. In the situation as mentioned in 6.20.1, ATC phraseology that can be used are: **RUNWAY** (runway number) **CLOSED/UNSAFE. UNABLE TO ISSUE LANDING CLEARANCE. LANDING WILL BE AT YOUR OWN RISK**.

6.21. SUSPENSION OF VISUAL FLIGHT RULES OPERATIONS.

6.21.1. Any or all VFR operations within control zone may be suspended by Dhangadhi Tower or as and when instructed by Chief of Dhangadhi Airport *whenever safety requires such action.*

6.21.2. All such suspensions of VFR operations will be accomplished through Dhangadhi Tower.

6.21.3. The following procedures will be observed by Dhangadhi tower whenever VFR operations are suspended:

- hold all VFR departures;
- recall all local flights operating under VFR or obtain approval for special VFR operations;

- notify all concerned ATS units as appropriate of the action taken;
- notify all operators, or their designated representatives, of the reason for taking such action, if necessary or requested.

6.22. SPECIAL VFR FLIGHT PROCEDURE

6.22.1. Special VFR flights is a VFR flights cleared by ATC to operate within Dhangadhi control zone in meteorological conditions below VMC provided:

a) traffic conditions permit.
b) the ground visibility is not less than:
c) 1000 meters for rotary wing aircraft
d) 2000 meters for fixed-wing aircraft.
e) between sunrise to sunset at the request of the pilot

6.22.2. The aircraft will be flown clear of cloud and in-sight of surface.

6.22.3. The request for Special VFR flights will be approved by Dhangadhi Tower. Request for such authorization will be handled individually.

6.22.4. Separation will be effected between Special VFR flights in accordance with prescribed separation minima.

6.22.5. Special VFR flight will not be authorized if there is any doubt to the Dhangadhi ATC that an aircraft may not be able to fly clear of clouds and in sight of surface.

6.22.6. Weather observations made for the purpose of authorizing a flight to be conducted under special VFR will be general observations.

6.22.7. Only one SVFR flight will be authorized to operate within a specified sector.

Note: Due to the topographical feature of the Nepal, Controllers, during the monsoon season, will consider the monsoon factor before clearing the flight in special VFR conditions.

6.23. AERONAUTICAL GROUND LIGHTS

6.23.1. All aeronautical ground lights will be operated:

a) continuously during the hours of darkness or during the time the centre of the sun's disc is more than 6 degrees below the horizon, whichever requires the longer period of operation, unless otherwise provided hereafter or otherwise required for the control of air traffic;

b) at any other time when their use, based on meteorological conditions, is considered desirable for the safety of air traffic.

6.23.2. Lights on and in the vicinity of aerodrome that are not intended for en-route navigation purposes may be turned off, subject to further provisions hereafter, if no likelihood of either regular or emergency operation exists, provided that they can be again brought into operation at least one hour before the expected arrival of an aircraft.

6.23.3. **Approach lighting**

Approach lighting includes such lights as simple approach lighting systems, precision approach lighting systems, visual approach slope indicator systems, circling guidance lights, approach light beacons and runway alignment indicators.

6.23.3.1. In addition to 6.23.1approach lighting will also be operated:

a) By day when requested by an approaching aircraft;
b) When the associated runway lighting is operated.

6.23.3.2. The lights of a precision approach path indicator system will be operated during the hours of daylight as well as of darkness and irrespective of the visibility conditions when the associated runway is being used.

6.23.4. **Runway lighting**

In Dhangadhi aerodrome, Runway lighting includes such lights as edge, and threshold lights.

6.23.4.1. Runway lighting will not be operated if that runway is not in use for landing, take-off or taxiing purposes, unless required for runway inspections or maintenance.

6.23.4.2. The lights of runway will remain lighted after take-off as long as is considered necessary for the return of the aircraft due to an emergency occurring during or immediately after take-off.

Note: When obstacle lighting is operated simultaneously with runway lighting, particular care should be taken to ensure that it is not turned off until no longer required by the aircraft.

6.23.5. **Taxiway lighting**

Taxiway lighting in Dhangadhi includes: edge lights only.

6.23.5.1. Where required to provide taxi guidance, taxiway lighting will be turned on in such order that a continuous indication of the taxi path is presented to taxiing aircraft. Taxiway lighting or any portion thereof may be turned off when no longer needed.

6.23.6. **Monitoring of visual aids**

6.23.6.1. Dhangadhi aerodrome controllers will make use of automatic monitoring facilities, when provided, to ascertain whether the lighting is in good order and functioning according to selection.

6.23.6.2. In the absence of an automatic monitoring system or to supplement such a system, the aerodrome controller will visually observe such lighting as can be seen from the aerodrome control tower and use information from other sources such as visual inspections or reports from aircraft to maintain awareness of the operational status of the visual aids.

6.23.6.3. On receipt of information indicating a lighting fault, the aerodrome controller will take such action as is warranted to safeguard any affected aircraft or vehicles, and initiate action to have the fault rectified.

6.24. STRIP MARKING

6.24.1. Dhangadhi Control TWR is using paper strip for individual flight.

6.24.2. The progress strip for all outbound departure flights will be maintained in yellow color and arrival flights in blue color.

6.24.3. Strip marking will be accomplished in accordance with procedures detailed in *Appendix D.*

6.24.4. The abbreviations and symbols as prescribed in Appendix H are authorized for the use in making entries on flight progress strips in copying or writing traffic

CHAPTER 7

PROCEDURE FOR APPROACH CONTROL SERVICE

7.1. RESPONSIBILITY

The responsibility of the Dhangadhi Tower for the provision of approach control service is to provide air traffic control service to controlled flights arriving at, or departing from Dhangadhi Airport under the area of its jurisdiction 5.4.1. a) & b)

7.2. RADIO COMMUNICATION

Controllers will maintain a continuous watch on all appropriate radio frequencies and conduct all air ground communications in accordance with the instructions contained in the AIP. An aircraft operating locally may be required to report at scheduled times or at nominated reporting points. An aircraft holding at a holding point serving a destination airport which is closed to landing will be required to report at intervals not exceeding 15 minutes.

7.3. REDUCTION IN SEPARATION MINIMA IN THE VICINITY OF AERODROMES

7.3.1. In addition to the circumstances mentioned in Chapter 5, 5.11.1 of MATS Nepal-2014, the separation minima detailed in Chapter 5, 5.4.1 and 5.4.2 of MATS Nepal-2014, may be reduced in the vicinity of aerodromes if:

a) adequate separation can be provided by the aerodrome controller when each aircraft is continuously visible to this controller; or
b) each aircraft is continuously visible to flight crews of the other aircraft concerned and the pilots thereof report that they can maintain their own separation; or
c) in the case of one aircraft following another, the flight crew of the succeeding aircraft reports that the other aircraft is in sight and separation can be maintained.

7.4. PROCEDURES FOR DEPARTING AIRCRAFT

7.4.1. The Dhangadhi TWR will undertake separation between arriving and departing aircraft within the area of his/her responsibility. For this purpose, the controller will issue the release clearance, SID and additional restriction(s) within his/her area of responsibility to towers.

7.4.2. A clearance expiry time will be specified by the area control center if a delayed departure would conflict with traffic not released to the unit providing approach control service. If for traffic reason of its own, a unit providing approach control service has to specify in addition its own clearance expiry time, this will be in no case be later than that specified by Kathmandu ACC.

7.4.3. Control of departing aircraft may be transferred to the area control unit sooner than its arrival at control boundary if further control of it can be exercised without reference to the position of arriving aircraft.

7.4.4. Before applying lateral separation the controller will obtain a report from a departing aircraft that it has established flight on the assigned departure track.

7.4.5. Departure Clearance issued by controller will contain the items as mentioned in chapter 6, article 6.3.2.3 of MATS, Nepal-2014 as applicable.

7.4.6. Clearances to aircraft on a SID with remaining published level and/or speed restrictions will indicate if such restrictions are to be followed or are cancelled. The phraseologies as mentioned in article 6.3.2.4.1.of MATS, Nepal-2014 will be used as applicable with the specified meanings therein. If there are no remaining published level or speed restrictions on the SID, the phrase CLIMB TO *(level)* should be used.

7.4.7. To be commensurate with the orderly flow of air traffic, every effort should be made to permit aircraft departing on long distance flights to proceed on a healing with a few turn or other maneuvers as possible, and climb to crushing level without restriction. Heavy take-off loads render the early portion of flight very critical and this factor should be considered in the control of departing aircraft.

7.4.8. Departing aircraft may be expedited by suggesting a take-off direction which is not in to the wind. It is the responsibility of the pilot-in-command of an aircraft to decide between making such a take-off and waiting for normal take-off in preferred direction.

7.4.9. If departures are delayed to avoid excessive holding at destination, delayed flights will normally be cleared in an order based on their estimate time of departure, except that deviation from this order may be made to facilitate the maximum number of departures with least average delay.

7.4.10. ATC units should advise aircraft operators or their designated representatives when anticipated delays due traffic conditions are likely to be substantial and in any event when they are expected to exceed 30 minutes.

7.4.11. **Information for Departing Aircraft**

7.4.11.1.*Meteorological conditions:* Information regarding significant changes in the meteorological conditions in the take-off or climb-out area will be transmitted to the aircraft without delay, except when it is known that the aircraft already has received the information.

Note.— Significant changes in this context include those relating to surface wind direction or speed, visibility, or air temperature (for turbine-engined aircraft), and the occurrence of thunderstorm or cumulonimbus, moderate or severe turbulence, wind shear, hail, moderate or severe icing, severe squall line, freezing precipitation, severe mountain waves, sandstorm, dust storm etc.

7.4.11.2.*Operational status of visual or non-visual aids:* Information regarding changes in the operational status of visual or non-visual aids essential for take-off and climb will be transmitted without delay to a departing aircraft, except when it is known that the aircraft already has received the information.

7.5. PROCEDURES FOR ARRIVING AIRCRAFT

7.5.1. Before authorizing an instrument approach, the controller on duty will be reasonably satisfied that prevailing weather condition is not less than the specified weather minima for the instrument approach.

7.5.2. An aircraft will not be cleared to descend below the lowest holding altitude when the weather condition does not meet the requirements of Para 7.6.1.1 or when frequent occurrence of heavy rain squall, in the opinion of controller, warrant the closure of the aerodrome.

7.5.3. When weather conditions are marginal or fluctuating about the relevant minimum and the Tower controller is in doubt that the provisions of Para. 7.6.1.1 can be met, the controller will advise each aircraft of the prevailing conditions and permit operation to continue.

7.5.4. An aircraft will also not be cleared to continue an instrument descent below the lowest holding altitude when hazardous weather conditions are expected to exist.

7.5.5. When it becomes evident that delays will be encountered by arriving aircraft, operators or designated representatives will, to the extent practicable, be notified and kept currently informed of any changes in such expected delays.

7.5.6. Arriving aircraft may be required to report when leaving or passing a significant point or navigation aid, or when starting procedure turn or base turn, or to provide other information required by the controller, to expedite departing and arriving aircraft.

7.5.7. An IFR flight will not be cleared for an initial approach below the appropriate minimum altitude as specified in this manual and AIP nor to descend below that altitude unless:

a) the pilot has reported passing an appropriate point defined by a navigation aid or as a waypoint; or
b) the pilot reports that the aerodrome is and can be maintained in sight.

7.5.8. Arriving aircraft will normally be cleared to follow the appropriate STAR. The aircraft will be informed of the type of approach to expect and runway-in-use as early as possible.

7.5.9. **Standard clearances for Arriving aircraft**

7.5.9.1. Dhangadhi CAO will, wherever possible, establish standardized procedures for transfer of control between the ATC units concerned, and standard clearances for arriving aircraft.

7.5.9.2. Arrival Clearance issued by controller will contain the items as mentioned in chapter 6, article 6.5.2.3 of MATS, Nepal-2014 as applicable.

7.5.9.3. Clearances to aircraft on a STAR with remaining published level and/or speed restrictions will indicate if such restrictions are to be followed or are cancelled. The phraseologies as mentioned in article 6.5.2.4.1. of MATS, Nepal-2014 will be used as applicable with the specified meanings therein. If there are no remaining published level or speed restrictions on the STAR, the phrase DESCEND TO *(level)* should be used.

7.5.9.4. Transfer of communications to the aerodrome controller will be effected at such a point or time that information on essential local traffic, if applicable, and clearance to land or alternative instructions can be issued to the aircraft in a timely manner.

7.5.10. **Instrument Approach**

7.5.10.1. The Dhangadhi tower controller will specify the instrument approach procedure to be used by arriving aircraft. A flight crew may request an alternative procedure and, if circumstances permit, will be cleared accordingly.

7.5.10.2. If a pilot reports or it is clearly apparent to the ATC unit that the pilot is not familiar with an instrument approach procedure, the initial approach level or a specified point or a level at which the procedure will be carried out and the final approach track will be specified, except that only the last-mentioned need be specified if the aircraft is to be cleared for a straight-in approach. The frequency(ies) of the navigation aid(s) to be used as well as the missed approach procedure will also be specified when deemed necessary.

7.5.11. **Holding**

7.5.11.1. In the event of extended delays, aircraft will be advised of the anticipated delay as early as possible and, when practicable, be instructed or given the option to reduce speed en route in order to absorb delay.

7.5.11.2. When delay is expected, the Control tower will clear aircraft to the holding fix, and for including holding instructions, and expected approach time or onward clearance time, as applicable, in such clearances.

7.5.11.3. Holding and holding pattern entry will be accomplished in accordance with procedures published in AIPs. If entry and holding procedures have not been published or if the procedures are not known to a flight crew, the Dhangadhi Tower Controller will specify the designator of the location or aid to be used, the inbound track, radial or bearing, direction of turn in the holding pattern as well as the time of the outbound leg or the distances between which to hold.

7.5.11.4. Aircraft will normally be held at a designated holding fix. The required minimum vertical, lateral or longitudinal separation from other aircraft will be provided. Criteria and procedures for the simultaneous use of adjacent holding patterns will be in accordance with the procedure published in AIP.

Note.— See MATS, Nepal 2014, Chapter 5, Section 5.5, concerning separation of aircraft holding in flight.

7.5.11.5. Levels at a holding fix or visual holding location will as far as practicable be assigned in a manner that will facilitate clearing each aircraft to approach in its proper priority. Normally, the first aircraft to arrive over a holding fix or visual holding location will be at the lowest level, with following aircraft at successively higher levels.

7.5.11.6. When extended holding is anticipated, turbojet aircraft will, when practicable, be permitted to hold at higher levels in order to conserve fuel, while retaining their order in the approach sequence.

7.5.11.7. If an aircraft is unable to comply with the published or cleared holding procedure, alternative instructions will be issued.

7.5.11.8. For the purpose of maintaining a safe and orderly flow of traffic, an aircraft may be instructed to orbit at its present or at any other position, provided the required obstacle clearance is ensured.

7.5.12. **Approach sequence**

7.5.12.1. The approach sequence will be established in a manner which will facilitate arrival of the maximum number of aircraft with the least average delay. Priority will be given to the aircraft as specified in chapter 6, article 6.5.6.1.1 of MATS, Nepal-2014.

Note.— An aircraft which has encountered an emergency is handled as outlined in Chapter 15, Section 15.1 of MATS, Nepal-2014.

7.5.12.2. Succeeding aircraft will be cleared for approach:

a) when the preceding aircraft has reported that it is able to complete its approach without encountering instrument meteorological conditions; or
b) when the preceding aircraft is in communication with and sighted by the Control tower, and reasonable assurance exists that a normal landing can be accomplished; or
c) when timed approaches are used, the preceding aircraft has passed the defined point inbound, and reasonable assurance exists that a normal landing can be accomplished.

7.5.12.3. In establishing the approach sequence, the need for increased longitudinal spacing between arriving aircraft due to wake turbulence will be taken into account.

7.5.12.4. If the pilot of an aircraft in an approach sequence has indicated an intention to hold for weather improvement, or for other reasons, such action will be approved. However, when other holding aircraft indicate intention to continue their approach to land, the pilot desiring to hold will be cleared to an adjacent fix for holding awaiting weather change or re-routing. Alternatively, the aircraft will be given a clearance to place it at the top of the approach sequence so that other holding aircraft may be permitted to land. Coordination will be effected with any adjacent ATC unit or control sector, when required, to avoid conflict with the traffic under the jurisdiction of that unit or sector.

7.5.12.5. When establishing the approach sequence, an aircraft which has been authorized to absorb a specified period of notified terminal delay by cruising at a reduced speed en route, will, in so far as practicable, be credited with the time absorbed en route.

7.5.13. **Sequencing and spacing of instrument approaches**

7.5.13.1. The following procedure will be utilized as necessary to expedite the approaches of a number of arriving aircraft:

a) a suitable point on the approach path, which will be capable of being accurately determined by the pilot, will be specified, to serve as a checkpoint in timing successive approaches;

b) aircraft will be given a time at which to pass the specified point inbound, which time will be determined with the aim of achieving the desired interval between successive landings on the runway while respecting the applicable separation minima at all times, including the period of runway occupancy.

7.5.13.2. The time at which aircraft will pass the specified point will be determined by the control tower and notified to the aircraft sufficiently in advance to permit the pilot to arrange the flight path accordingly.

7.5.13.3. Each aircraft in the approach sequence will be cleared to pass the specified point inbound at the previously notified time, or any revision thereof, after the preceding aircraft has reported passing the point inbound.

7.5.14. **Interval between successive approaches**

In determining the time interval or longitudinal distance to be applied between successive approaching aircraft, the relative speeds between succeeding aircraft, the distance from the specified point to the runway, the need to apply wake turbulence separation, runway occupancy times, the prevailing meteorological conditions as well as any condition which may affect runway occupancy times will be considered.

7.5.15. **Expected approach time**

7.5.15.1. An expected approach time will be determined for an arriving aircraft that will be subjected to a delay of 10 minutes. The expected approach time will be transmitted to the aircraft as soon as practicable as and preferably not later than at the commencement of its initial descent from cruising level. A revised expected approach time will be transmitted to the aircraft without delay whenever it differs from that previously transmitted by 5 minutes or more.

7.5.15.2. An expected approach time will be transmitted to the aircraft by the most expeditious means whenever it is anticipated that the aircraft will be required to hold for 30 minutes or more.

7.5.15.3. The holding fix to which an expected approach time relates will be identified together with the EAT whenever circumstances are such this would not otherwise be evident to the pilot.

7.5.16. **Expected Onward Clearance time**

In the event an aircraft is held en route or at a location or aid other than the initial approach fix, the aircraft concerned will, as soon as practicable, be given an expected onward clearance time from the holding fix. The aircraft will also be advised if further holding at a subsequent holding fix is expected.
Note.— "Onward clearance time" is the time at which an aircraft can expect to leave the fix at which it is being held.

7.5.17. **Information for Arriving aircraft**

7.5.17.1. As early as practicable after an aircraft has established communication with the Dhangadhi tower, the elements of information as mentioned in article 6.6.1 of MATS, Nepal-2014, in the order listed, as applicable, will be transmitted to the aircraft, with the exception of such elements which it is known the aircraft has already received.

7.5.17.2. In applying the provisions in 7.5.17.1, it will be recognized that information published by NOTAM or disseminated by other means may not have been received by the aircraft prior to departure or during en-route flight.

7.5.17.3. If it becomes necessary or operationally desirable that an arriving aircraft follow an instrument approach procedure or use a runway other than that initially stated, the flight crew will be advised without delay.

7.5.17.4. At the commencement of final approach, the information as mentioned in article 6.6.4 of MATS, Nepal-2014 will be transmitted to aircraft as applicable.

7.5.17.5. During final approach, the information as mentioned in article 6.6.5 of MATS, Nepal-2014 will be transmitted without delay.

7.6. CONTROL OF AIRCRAFT AFTER MISSED APPROACH

7.6.1. A consecutive approach, following a missed approach, may be permitted at the discretion of the controller in circumstances justifying priority for the aircraft missing the approach e.g. low fuel state.

7.6.2. When a consecutive approach is likely to be required, appropriate lower levels in the holding pattern will be kept vacant until the approaching aircraft is assumed of a landing or is appropriately separated en-route its alternate.

7.6.3. When an aircraft will be authorized to make a second but not a consecutive approach, an altitude in the holding pattern will be reserved to accept the aircraft returning after missed approach. This altitude will be high enough in the holding aircraft sequence to allow the processing of the holding stack to continue without being interrupted by the return of the aircraft.

7.6.4. Such a reserved altitude will be released for other use as soon as the approaching aircraft is assured of a landing or is appropriately separated en-route to its alternate.

7.6.5. A following aircraft which has not commenced approach at the time a preceding aircraft initiates missed approach, will be held in the holding pattern until the controller is satisfied that he/she can readily separate the aircraft will it also miss its approach.

7.6.6. Appropriate clearance will be given to an aircraft which has initiated a missed approach to maintain separation and to direct is along the prescribed track and subsequently to a departure track to alternate or to return to the holding point and a new EAT will be advised as soon as practicable.

7.6.7. Will separation so require, an aircraft may be required to climb on track different from that prescribed in the instrument approach procedure, provided such tracks meet adequate terrain clearance.

7.7. TRAFFIC INFORMATION IN CONTROLLED AIRSPACE

7.7.1. Essential local traffic information

7.7.1.1. Information on essential local traffic known to the controller will be transmitted without delay to departing and arriving aircraft concerned.

7.7.1.2. Essential local traffic will be described so as to be easily identified.

7.7.1.3. Significant traffic information will be issued by a controller to the pilots of aircraft concerned in the following situations:

a) When planned tracks of VFR flight with less than 1000ft vertical separation will cross
b) When opposite and same direction VFR flight are climbing and descending through the level of other VFR flight.

7.7.2. **Traffic information**

7.7.2.1. Traffic information will also be issued to pilots of aircraft concerned when:

a) the aircraft are operating with less than prescribed separation minima due to emergency or other cases.
b) any significant traffic advised by the appropriate ATS unit in respect of aircraft leaving controlled airspace.

7.7.2.2. In restricted or danger areas, traffic information will not be provided to or in respect of aircraft using the area for the purpose for which it is established.

7.7.3. **Significant traffic information**

7.7.3.1. Significant traffic information may contain any or all of the following items:

a) call sign of aircraft;
b) aircraft type;
c) levels;
d) direction of flight;
e) Estimated or actual time at a position, a reporting point of flight path, or a point of passing or overtaking.

CHAPTER 8

SEPARATION METHODS AND MINIMA

8.1. GENERAL PROVISIONS FOR THE SEPARATION OF CONTROLLED TRAFFIC

8.1.1. With the exceptions stated in Chapter 5 of MATS, Nepal, contains procedures and procedural separation minima for use in the separation of aircraft in the en-route phase as well as aircraft in the arrival and departure phases of flight.

8.1.2. Procedures and separation minima applicable in the provision of aerodrome control service are contained in Chapter 7 of MATS, Nepal

8.1.3. No clearance will be given to execute any maneuver that would reduce the spacing between two aircraft to less than the separation minimum applicable in the circumstances.

8.1.4. Where the type of separation or minimum used to separate two aircraft cannot be maintained, another type of separation or another minimum will be established prior to the time when the current separation minimum would be infringed.

8.1.5. Larger separations than the specified minima will be applied whenever exceptional circumstances such as unlawful interference or navigational difficulties call for extra precautions. This will be done with due regard to all relevant factors so as to avoid impeding the flow of air traffic by the application of excessive separations.

8.1.6. Whenever, flight crew report to the ATC unit about the failure or degradation of navigation, communications, altimetry, flight control or other systems, degradation of aircraft performance below the level required for the airspace in which it is operating, the controller will take action to establish another appropriate type of separation or separation minimum.

8.2. VERTICAL SEPARATION

8.2.1. Vertical separation is obtained by requiring aircraft using prescribed altimeter setting procedures to operate at different levels expressed in terms of flight levels or altitudes in accordance with the provisions mentioned in Chapter 4, Section 4.10 of MATS, Nepal.

8.2.2. If it is necessary to change the cruising level of an aircraft operating along an established ATS route extending partly within and partly outside controlled airspace and where the respective series of cruising levels are not identical, the change will, whenever possible, be effected within controlled airspace.

8.2.3. When an aircraft has been cleared into a control area at a cruising level which is below the established minimum cruising level for a subsequent portion of the route, the ATC unit responsible for the area should issue a revised clearance to the aircraft even though the pilot has not requested the necessary cruising level change.

8.2.4. An aircraft may be cleared to change cruising level at a specified time, place or rate.

8.2.5. In so far as practicable, cruising levels of aircraft flying to the same destination will be assigned in a manner that will be correct for an approach sequence at destination.

8.2.6. An aircraft at a cruising level will normally have priority over other aircraft requesting that cruising level. When two or more aircraft are at the same cruising level, the preceding aircraft will normally have priority.

8.2.7. The cruising levels, or, in the case of cruise climb, the range of levels, to be assigned to controlled flights will be selected from those allocated in the tables of cruising levels in this manual and AIP.

8.2.8. Subject to the provision of separation, the aircraft with the first priority will be given the lowest assignable level and higher levels will then be allocated in order to subsequent priority.

8.3. HORIZONTAL SEPARATION

8.3.1. Lateral Separation

8.3.1.1. Lateral separation of aircraft is obtained by requiring operation on different routes or in different geographical locations as determined by visual observation, by the use of navigation aids.

8.3.1.2. When information is received indicating navigation equipment failure or deterioration below the navigation performance requirements, Dhangadhi tower controller will then, as required, apply alternative separation methods or minima.

8.3.1.3. Means by which lateral separation application may be applied by use of the same or different geographic locations and, or way points are prescribed in article 5.4.1 of MATS, Nepal as and when required.

8.3.2. **LONGITUDINAL SEPARATION**

8.3.2.1. Longitudinal separation will be applied so that the spacing between the estimated positions of the aircraft being separated is never less than a prescribed minimum. Longitudinal separation between aircraft following the same or diverging tracks may be maintained by application of speed control.

8.3.2.2. Longitudinal separation may be established by requiring aircraft to depart at a specified time, to arrive over a geographical location at a specified time, or to hold over a geographical location until a specified time.

8.3.2.3. Dhangadhi tower will apply separation provision within Aerodrome traffic zone and Control zone. The airspace and route outside this area is uncontrolled. Because of this limited control airspace, all longitudinal separation provisions mentioned in MATS Nepal may not be practicable to apply; so, Dhangadhi tower controllers will apply longitudinal (Time/Distance/GNSS based) separation provisions mentioned in article 5.4.2 MATS, Nepal whenever it is practicable.

8.4. SEPARATION OF AIRCRAFT HOLDING IN FLIGHT

8.4.1. Aircraft established in adjacent holding patterns will, except when lateral separation between the holding areas exists, be separated by the applicable vertical separation minimum.

8.4.2. Except when lateral separation exists, vertical separation will be applied between aircraft holding in flight and other aircraft, whether arriving, departing or en route, whenever the other aircraft concerned are within five minutes flying time of the holding area. (See Figure 8-13 of MATS, Nepal)

8.5. MINIMUM SEPARATION BETWEEN DEPARTING AIRCRAFT

8.5.1. Dhangadhi tower controllers will apply separation provisions for between departing aircrafts as mentioned in article 5.6 of MATS, Nepal whenever it is practicable.

8.6. SEPARATION OF DEPARTING AIRCRAFT FROM ARRIVING AIRCRAFT

8.6.1. Dhangadhi tower controllers will apply separation provisions for between departing and arriving aircrafts as mentioned in article 5.7. of MATS, Nepal whenever it is practicable.

8.7. TIME-BASED WAKE TURBULENCE LONGITUDINAL SEPARATION MINIMA

8.7.1. Dhangadhi Tower will not be required to apply wake turbulence separation:

a) For arriving VFR flights landing on the same runway as a preceding landing HEAVY or MEDIUM aircraft; and

b) Between arriving IFR flights executing visual approach when the aircraft has reported the preceding aircraft in sight and has been instructed to follow and maintain own separation from that aircraft.

8.7.2. Dhangadhi Tower in respect of the flights specified in 8.7.1 a) and b), as well as when otherwise deemed necessary, issue a caution of possible wake turbulence. The pilot-in-command of the aircraft concerned will be responsible for ensuring that the spacing from a preceding aircraft of a heavier wake turbulence category is acceptable. If it is determined that additional spacing is required, the flight crew will inform the Control Tower accordingly, stating their requirements.

8.7.3. Except as provided for in 8.7.1 a) and b), for arrival aircraft, departure aircraft, and displaced landing threshold and opposite direction aircraft, the separation minima as mentioned in article 5.8.2, 5.8.3, 5.8.4 and 5.8.5 of MATS, Nepal respectively will be applied as practicable.

8.8. REDUCTION IN SEPARATION MINIMA

8.8.1. Provided an appropriate safety assessment has shown that an acceptable level of safety will be maintained, and after prior consultation with users, the lateral and longitudinal separation minima may be reduced as determined by the Dhangadhi CAO.

CHAPTER 9

COORDINATION

9.1. COORDINATION IN RESPECT OF THE PROVISION OF AIR TRAFFIC CONTROL SERVICE

9.1.1. To reduce the verbal communication, avoid conflicts and clarify area of responsibility of all adjacent control units, DHCAO will signed letter of agreement(LOA) with Nepalgung Tower as specified in the letter of agreement (LOA) as specified in Appendix B.

9.1.2. Dhangadhi tower will keep the Nepalgung Tower promptly advised of pertinent data on controlled traffic as specified in the LOA.

9.1.3. The Nepalgung Tower will keep the Dhangadhi tower promptly advised of pertinent data on controlled traffic as specified in the LOA.

9.2. COORDINATION IN RESPECT OF THE PROVISION OF FLIGHT INFORMATION SERVICE AND ALERTING SERVICE

9.2.1. Coordination between Nepalgung Tower, AFIS aerodrome and other Control towers which provides FIS adjacent to Dhangadhi control zone will be effected, in order to ensure continued FIS to such aircraft in specified areas or along specified routes. Such coordination will be effected in accordance with an agreement between the Tower concerned.

9.2.2. Where coordination of flights is effected in accordance with 9.2.1, this will include transmission of the following information on the flight concerned:

a) appropriate items of the current flight plan; and

b) the time at which last contact was made with the aircraft concerned.

9.2.3. This information will be forwarded to the concerned Tower in which the aircraft will operate prior to the aircraft entering such unit.

9.2.4. As specified in the LOA between the appropriate Towers to assist in the identification of strayed or unidentified aircraft and thereby eliminate or reduce the need for interception, flight plan and flight progress information for flights along will be provided to the concerned Control towers or AFIS aerodromes.

9.2.5. In circumstances where an aircraft has declared minimum fuel or is experiencing an emergency or in any other situation wherein the safety of the aircraft is not assured, the type of emergency and/or the circumstances experienced by the aircraft will be reported by the transferring unit to the accepting unit and any other Control tower that may be concerned with the flight and to the associated RCCs, if necessary.

9.2.6. Coordination will be accomplished by Dhangadhi TWR with Airline Operators in accordance with procedures detailed in the appropriate Letter of Agreement (LOA) attached in appendix C. This sort of LOAs will be affected immediately after getting approval from the DGCA.

CHAPTER 10

PHRASEOLOGIES

10.1. COMMUNICATIONS PROCEDURES

The communications procedures will be in accordance with Volume II of Annex 10 — *Aeronautical Telecommunications*, and pilots, ATS personnel and other ground personnel will be thoroughly familiar with the radiotelephony procedures contained therein.

10.2. GENERAL

Note.— Requirements for read back of clearances and safety-related information are provided in Chapter 4 article 4.5.7.5. of MATS, Nepal

10.2.1. Most phraseology contained in Section 10.3 of this Chapter shows the text of a complete message without call signs. They are not intended to be exhaustive, and when circumstances differ, pilots, ATS personnel and other ground personnel will be expected to use plain language, which will be as clear and concise as possible, to the level specified in the ICAO language proficiency requirements contained in PELR, in order to avoid possible confusion by those persons using a language other than one of their national languages.

10.2.2. The phraseologies are grouped according to types of air traffic service for convenience of reference. However, users will be familiar with, and use as necessary, phraseologies from groups other than those referring specifically to the type of ATS being provided. All phraseologies will be used in conjunction with call signs (aircraft, ground vehicle, ATC or other) as appropriate. Provisions for the compilation of RTF messages, call signs and procedures are contained in Annex 10, Volume II, and Chapter 5.

10.2.3. Section 10.3 includes phrases for use by pilots, ATS personnel and other ground personnel.

10.2.4. Phraseologies for the movement of vehicles, other than tow-vehicles, on the maneuvering area will be the same as those used for the movement of aircraft, with the exception of taxi instructions, in which case the word “PROCEED” will be substituted for the word “TAXI” when communicating with vehicles.

10.2.5. Conditional phrases, such as “behind landing aircraft” or “after departing aircraft”, will not be used for movements affecting the active runway(s), except when the aircraft or vehicles concerned are seen by the appropriate controller and pilot. The aircraft or vehicle causing the condition in the clearance issued will be the first aircraft/vehicle to pass in front of the other aircraft concerned. In all cases a conditional clearance will be given in the following order and consist of:

a) identification;
b) the condition;
c) the clearance; and

d) brief reiteration of the condition,
for example:

"BHA252, BEHIND JETSTREAM ON SHORT FINAL, LINE UP BEHIND".

Note.— This implies the need for the aircraft receiving the conditional clearance to identify the aircraft or vehicle causing the conditional clearance.

10.2.6. The phraseology in Section 10.3 does not include phrases and regular radiotelephony procedure words contained in Annex 10, Volume II.

10.2.7. Words in parentheses indicate that specific information, such as a level, a place or a time, etc., will be inserted to complete the phrase, or alternatively that optional phrases may be used. Words in square parentheses indicate optional additional words or information that may be necessary in specific instances.

10.2.8. Examples of the application of the phraseologies may be found in the *Manual of Radiotelephony* (Doc 9432).

10.3 ATS PHARASEOLOGIES

GENERAL

10.3.1. DESCRIPTION OF LEVELS (Subsequently Referred to as "Level")	a) **FLIGHT LEVEL** (number); or b) (number) **FEET.**
10.3.2. LEVEL CHANGES, REPORTS AND RATES …to require action at a specific time or place	a) **CLIMB (or DESCEND);** followed as necessary by; (i) **TO (level)** (ii) **TO REACH (**level) **AT (or BY) (**time or significant point); (iii) **REPORT LEAVING (or REACHING,** or **PASSING**) (level) b) **MAINTAIN AT LEAST** (number) **FEET ABOVE** or **(BELOW)** (aircraft call sign) c) **REQUEST LEVEL (or FLIGHT LEVEL or ALTITUDE CHANGE FROM** (name of unit) [AT (time or significant point)]. d) **STOP CLIMB (or DESCENT) AT** (level); e) **CONTINUE CLIMB (OR DESCENT) TO** (level) f) **EXPEDITE CLIMB (or DESCENT)[UNTIL PASSING** (level)]

.. to require action when convenient	g) **WHEN READY CLIMB (or DESCEND) TO (level)** h) **EXPECT CLIMB (or DESCENT) AT** (time or Significant point) i) *** REQUEST DESCENT AT (time)** j) **WHEN READY** (instruction); k) **MAINTAIN OWN SEPARATION AND VMC** [FROM (level)] **[TO** (level)]
…to require an aircraft to climb or descend maintaining own separation and VMC	l) **MAINTAIN OWN SEPARATIN AND VMC**
…when there is doubt that an aircraft can comply with a clearance or instruction	m) **IF UNABLE** (alternative instructions**) AND ADVISE**;
…when pilot is unable to comply with a clearance or instruction	n) *** UNABLE;** * Denotes pilot transmission.
…after a flight crew starts to deviate from any ATC clearance or an instruction to comply with an ACAS resolution advisory (RA) (Pilot and controller interchange)	o) *** TCAS RA;** p) **ROGER**
... after the response to an ACAS RA is completed and a return to the ATC clearance or instruction is initiated (Pilot and controller interchange)	q) *** CLEAR OF CONFLICT RETURNING TO** (assigned clearance); r) **ROGER (**or alternative instructions)
… after the response to an ACAS RA is completed and the assigned ATC clearance or instruction has been resumed (Pilot and controller interchange)	s) ***CLEAR OF CONFLICT** (assigned clearance) **RESUMED;**
… after an ATC clearance or instruction contradictory to the ACAS RA is received, the flight crew will follow the RA and inform ATC directly (Pilot and controller interchange)	t) **ROGER** (or alternative instructions); u) *** UNABLE, TCAS RA;** v) **ROGER**
... Clearance to climb on a SID which has published level and/or speed restrictions, where the pilot is to climb to the cleared level and comply with published level restrictions, follow the lateral profile of the SID and comply with published speed restrictions or ATC issued speed control instructions as applicable.	w) **[CLIMB VIA SID TO** *(level)*], **CANCEL LEVEL RESTRICTION(S);**

... clearance to cancel level restriction(s) of the vertical profile of a SID during climb	x) **[CLIMB VIA SID TO** *(level)*], **CANCEL LEVEL RESTRICTION(S);**
... clearance to cancel specific level restriction(s) of the vertical profile of a SID during climb	y) **[CLIMB VIA SID TO *(level)*], CANCEL LEVEL RESTRICTION(S) AT** *(point(s))*;
... clearance to cancel speed restrictions of a SID during climb	z) **[CLIMB VIA SID TO** *(level)*], **CANCEL SPEED RESTRICTION(S);**
.. clearance to cancel specific speed restrictions of a SID during climb	aa) **[CLIMB VIA SID TO** *(level)*], **CANCEL SPEED RESTRICTION(S) AT** *(point(s));*
…clearance to climb and to cancel speed and level restrictions of a SID	bb) **CLIMB UNRESTRICTED TO** *(level)* (*or)* **CLIMB TO** *(level),*
... clearance to descend on a STAR which has published level and/or speed restrictions, where the pilot is to descend to the cleared level and comply with published level restrictions, follow the lateral profile of the STAR and comply with published speed restrictions or ATC issued speed control instructions.	cc) **DESCEND VIA STAR TO** *(level);* **CANCEL LEVEL AND SPEED RESTRICTIONS;**
…clearance to cancel level restriction(s) of the vertical profile of a STAR during descent.	dd) **[DESCEND VIA STAR TO *(level)*], CANCEL LEVEL RESTRICTION(S);**
... clearance to cancel specific level restrictions of a STAR during descent	ee) **[DESCEND VIA STAR TO** *(level)*], **CANCEL LEVEL RESTRICTION(S) AT *(point(s));***
	ff) **[DESCEND VIA STAR TO** *(level)*], **CANCEL SPEED RESTRICTION(S);**
... clearance to cancel speed restrictions of a STAR during descent	gg) **[DESCEND VIA STAR TO *(level)*], CANCEL SPEED RESTRICTION(S) AT** (*point(s)*);
... clearance to cancel specific speed restrictions of a STAR during descent	hh) **DESCEND UNRESTRICTED TO *(level) or* DESCEND TO** *(level),* **CANCEL LEVEL AND SPEED RESTRICTIONS.**
... clearance to descend and to cancel speed and level restrictions of a STAR	

10.3.3. MINIMUM FUEL	**a) * MINIMUM FUEL;** **b) ROGER [NO DELAY EXPECTED or EXPECT** (*delay information*)].
10.3.4. TRANSFER OF CONTROL AND/OR FREQUENCY CHANGE *Note.— An aircraft may be requested to "STAND BY" on a frequency when it is intended that the ATS unit will initiate communications soon and to "MONITOR" a frequency when information is being broadcast thereon.*	a) **CONTACT** (unit call sign) (frequency) [**NOW**]; b) **AT** (or **OVER)** (time or place) [or **WHEN PASSING/ LEAVING/REACHING**] (level) **CONTACT** (unit call sign) (frequency); c) **IF NO CONTACT** (instructions); d) **STAND BY FOR** (unit call sign) (frequency) ; e) *** REQUEST CHANGE TO** (frequency); f) **FREQUENCY CHANGE APPROVED;** g) **MONITOR** (unit call sign) (frequency); h) *** MONITORING** (frequency); i) **WHEN READY CONTACT** (unit call sign) (frequency); j) **REMAIN THIS FREQUENCY.**
10.3.5. TRAFFIC INFORMATION … to pass traffic information … to acknowledge traffic information	a) **TRAFFIC** (information); b) **NO REPORTED TRAFFIC** c) ***LOOKING OUT;** d) *** TRAFFIC IN SIGHT;** e) ***NEGATIVE CONTACT** [reasons]; f)) [**ADDITONAL**] **TRAFFIC** (direction) **BOUND** g) (type of aircraft) (level) **ESTIMATED** (or **OVER**) (significant point) **AT** (time)

10.3.6. METEOROLOGICAL CONDITIONS	a) **[SURFACE] WIND** (number) **DEGREES** (speed) (units); b) **WIND AT** (level) (number) **DEGREES** (number) **KNOTS;** Note: - Wind is always expressed by giving the mean direction and speed and any significant variations thereof. c) **VISIBILITY** (distance) (units) [direction]; d) **PRESENT WEATHER** (details); e) **CLOUD** (amount,[(type)] and height of base) (unit) (or **SKY CLEAR**) f) **CAVOK;** [Note :- CAVOK pronounced CAV-O-KAY.] g) **TEMPERATURE [MINUS]** (number) (and/or **DEW-POINT [MINUS]** (number); h) **QNH** (number) [(units)]; i) (aircraft type) **REPORTED** (description) **ICING (**or **TURBULENCE) [IN CLOUD]** (area) (time) j) **REPORT FLIGHT CONDITIONS.**
10.3.7. POSITION REPORTING … to omit position reports until a specific position	a) **NEXT REPORT AT** (significant point) b) **OMIT POSITION REPORTS [UNTIL** (specify)]; c) **RESUME POSITION REPORTING**
10.3.8. ADDITIONAL REPORTS … to request a report at a specified place or distance ….to report at a specified place or distance …to request a report of present position … to report present position	a) **REPORT PASSING** (significant point) b) **REPORT** (distance) **MILES (GNSS** or **DME) FROM** (name of DME station) (or significant point); c) * (distance) **MILES (GNSS or DME) FROM** (name of DME station) (or significant point) d) **REPORT PASSING** (three digits) **RADIAL** (name of VOR) **VOR;** e) **REPORT (GNSS** or **DME) DISTANCE FROM** (significant point) or (name of DME station); f) * (distance) **MILES (GNSS** or **DME) FROM** (name of DME station) (or significant point)

10.3.9. AERODROME INFORMATION	a) [(location)] **RUNWAY SURFACE CONDITION RUNWAY** (number) (condition); b) [(location)] **RUNWAY SURFACE CONDITION RUNWAY** (number) **NOT CURRENT;** c) **LANDING SURFACE** (condition); d) **CAUTION CONSTRUCTION WORK** (location); e) **CAUTION (specify reasons) RIGHT (**or **LEFT), (**or **BOTH SIDES) OF RUNWAY** [number]; f) **CAUTION WORK IN PROGRESS (**or **OBSTRUCTION)** (position and any necessary advice); g) **RUNWAY REPORT AT** (observation time) **RUNWAY** (number) (type of precipitant) **UP TO** (depth of deposit) **MILLIMETRES. BRAKING ACTION GOOD** (or **MEDIUM TO GOOD,** or **MEDIUM,** or **MEDIUM TO POOR,** or **POOR** or **UNREALIABLE) [**and/or **BRAKING COEFFICIENT** (equipment and number); h) **BRAKING ACTION REPORTED BY** (aircraft type) **AT** (time) **GOOD** (or **MEDIUM** or **POOR**); i) **RUNWAY (**or **TAXIWAY) (**number**) WET [**or **DAMP, WATER PATCHES, FLOODED** (depth)**;** j) **TOWER OBSERVES** (weather information); k) **PILOT REPORTS** (weather information). l) (specify visual or non-visual aid) **RUNWAY** (number) (description of deficiency);
10.3.10. OPERATIONAL STATUS OF VISUAL AND NON- VISUAL AIDS	a) (type) **LIGHTING** (unserviceability); b) **TAXIWAY LIGHTING** (description of deficiency); c) (type of visual approach slope indicator or other Approach aids) **RUNWAY** (number) (description of deficiency);

10.3.11. ISSUANCE OF A CLEARANCE	a) *(name of unit)* **CLEARS** *(aircraft call sign)*; b) (aircraft call sign) **CLEARED TO**; c) **RECLEARED** (amended clearance details) [**REST OF CLEARANCE UNCHANGED**]; d) **RECLEARED** (amended route portion) **TO** (significant point of original route) [**REST OF CLEARANCE UNCHANGED**]; e) **ENTER CONTROLLED AIRSPACE** (or **CONTROL ZONE) [VIA** (significant point or route)] **AT** (level) [**AT** (time)]; f) **LEAVE CONTROL ZONE)[VIA** (significant point or route)] **AT** (level) (or **CLIMBING**, or **DESCENDING**); g) **JOIN** (specify) **AT** (significant point) AT (level) [**AT** (time)].
10.3.12. INDICATION OF ROUTE AND CLEARANCE LIMIT	a) **FROM** (location) **TO** (location) b) **TO** (location) Followed as necessary by: I. **DIRECT** II. **VIA** (route and/or significant points); III. **FLIGHT PLANNED ROUTE;** IV. **VIA** (distance **DME ARC** (direction**) OF** (name of DME station) c) (route) **NOT AVAILABLE DUE** (reason) **ALTERNATIVE(S) IS/ ARE** (route) **ADVISE.**
10.3.13. MAINTENANCE OF SPECIFIED LEVELS	a) **MAINTAIN** (level) [**TO** (significant point)]; b) **MAINTAIN** (level) **UNTIL PASSING** (significant point); c) **MAINTAIN** (level) **UNTIL** (minutes) **AFTER PASSING** (significant point); d) **MAINTAIN** (level) **UNTIL** (time); e) **MAINTAIN** (level) **UNTIL ADVISED BY** (name of unit); f) **MAINTAIN** (level) **UNTIL FURTHER ADVISED**; g) **MAINTAIN** (level) **WHILE IN CONTROLLED AIRSPACE**; Note: - The term "**MAINTAIN**" is not to be used in lieu of "**DESCEND**" or "**CLIMB**" when instructing an aircraft to change level.

10.3.14. SPECIFICATION OF CRUISING LEVELS	a) **CROSS** (significant point) **AT** (or **ABOVE**, or **BELOW**) (level); b) **CROSS** (significant point) **AT** (time) **OR LATER** (or **BEFORE) AT** (level); c) **CRUISE CLIMB BETWEEN** (levels) (or **ABOVE** (levels); d) **CROSS** (distance) **MILES**, (GNSS or DME) [(direction)] **OF** (name of DME station) (or distance) [(direction)] OF (significant point) **AT** (or ABOVE, or BELOW) (level).
10.3.15. EMERGENCY DESCENT	a) ***EMERGENCY DESCENT** (intentions); b) **ATTENTION ALL AIRCRAFT IN THE VICINITY OF** (or **AT**) (significant point or location) **EMERGENCY DESCENT IN PROGRESS FROM** (level) (followed as necessary by specific instructions, clearance, traffic information etc.
10.3.16. IF CLEARANCE CANNOT BE ISSUED IMMEDIATELY UPON REQUEST	**EXPECT CLEARANCE** *(or type of clearance)* **AT** *(time)*.
10.3.17. WHEN CLEARANCE FOR DEVIATION CANNOT BE ISSUED	**UNABLE, TRAFFIC** *(direction)* **BOUND** *(type of aircraft) (level)* **ESTIMATED** (*or* **OVER**) *(significant point)* **AT** *(time)* **CALL SIGN** *(call sign)* **ADVISE INTENTIONS**

10.3.18.SEPARATION INSTRUCTIONS	a) **CROSS** (significant point) **AT** (time)[**OR LATER** (or **OR BEFORE**)] b) **ADVISE IF ABLE TO CROSS** (significant point) **AT** (time or level); c) **MAINTAIN** (number) **KNOTS** [**OR GREATER** (or **OR LESS**)] [**UNTIL** (significant point)] d) **DO NOT EXCEED** (number) **KNOTS**
10.3.19.DEPARTURE INSTRUCTIONS …clearance to proceed direct with advance notice of a future instruction to rejoin the SID	a) [**AFTER DEPARUTE] TURN RIGHT** (or **LEFT** or **RUNWAY HEADING**) or **CONTINUE RUNWAY HEADING**) **TO** (level or signification point) (other instructions as required) b) **AFTER REACHING** (or **PASSING)** (level or significant point) (instruction) c) **TURN RIGHT** (or **LEFT**) **HEADING** (three digits) TO (level) [**TO INTERCEPT** (track, route, airway etc)] d) (standard departure name and number) **DEPARTURE** e) **TRACK** (three digits) **DEGREES** [**MAGNETIC** (or **TRUE**)] TO (or **FROM**) (significant point) **UNTIL** (time, or **REACHING** (fix or significant point or level)) [**BEFORE PROCEEDING ON COURSE**]; f) **CLEARED** (designation**) DEAPRTURE** g) **CLEARED DIRECT** *(waypoint)*, **CLIMB TO** ***(level),*** **EXPECT TO REJOIN SID [*(SID designator)*] [AT** *(waypoint)*], *then* **REJOIN SID [*(SID designator)*] [AT** *(waypoint)*]; h) **CLEARED DIRECT** ***(****waypoint),***CLIMB TO** *(level), then* **REJOIN SID *(SID designator)* AT** ***(****waypoint).*

10.3.20. APPROACH INSTRUCTIONS …clearance to proceed direct with advance notice of a future instruction to rejoin the STAR …when cleared to initial holding fix before clearing approach … when a pilot requests a visual approach … to request if a pilot is able to accept visual approach ….in case of successive visual approaches when the pilot of a succeeding aircraft has reported having the preceding aircraft in sight	a) **CLEARED** (designation) **ARRIVAL** b) **CLEARED TO** (clearance limit) (designation); c) **CLEARED** (or **PROCEED**) (details of route to be followed); d) **CLEARED DIRECT *(waypoint)*, DESCEND TO** *(level),* **EXPECT TO REJOIN STAR [*(STAR designator)*] AT** (*waypoint), then* **REJOIN STAR** [*(STAR designator)*] **[AT *(waypoint)*];** e) **CLEARED DIRECT *(waypoint)*, DESCEND TO** *(level), waypoint), then* **REJOIN STAR [*(STAR designator)*] [AT** *(waypoint)*]; f) **CLEARED *(type of approach)* APPROACH [RUNWAY** *(number)*]; g) **CLEARED *(type of approach)* RUNWAY *(number)* FOLLOWED BY CIRCLING TO RUNWAY *(number)*;** h) **CLEARED APPROACH [RUNWAY** *(number)*]; i) **COMMENCE APPROACH AT** *(time)*; j) *** REQUEST STRAIGHT-IN** *[(type of approach)]* **APPROACH [RUNWAY** *(number)*]; k) **CLEARED STRAIGHT-IN** *[(type of approach)]* **APPROACH [RUNWAY** *(number)*]; l) **REPORT VISUAL;** m) **REPORT RUNWAY** [LIGHTS] **IN SIGHT;** n) *** REQUEST VISUAL APPROACH;** o) **CLEARED VISUAL APPROACH RUNWAY *(number)*;** p) **ADVISE ABLE TO ACCEPT VISUAL APPROACH RUNWAY** *(number)*; q) **CLEARED VISUAL APPROACH RUNWAY *(number)*, MAINTAIN OWN SEPARATION FROM PRECEDING** *(aircraft type and wake turbulence category as appropriate)* **[CAUTION WAKE TURBULENCE];** r) **REPORT** (significant point); [**OUTBOUND**, or **INBOUND**]; s) ***REQUEST VMC DESCENT**; t) **MAINTAIN OWN SEPARATION**;

	u) **MAINTAIN VMC**; v) **ARE YOU FAMILIAR WITH** (name) **APPROACH PROCEDURE**; w) ***REQUEST** *(Type of Approach)* **APPROACH RUNWAY**(number) **APPROACH**; x) ***REQUEST** *(* RNAV plain-language designator*)* y) **CLEARED (**RNAV plain-language designator) * Denotes pilot transmission.
10.3.21. HOLDING CLEARANCE **…** visual … published holding procedure over a facility or fix … when detailed holding clearance is required	a) **HOLD VISUAL [OVER]** (position), (or **BETWEEN** two prominent landmarks)); b) **CLEARED** (or **PROCEED**) **TO** (significant point, name of facility or fix) [**MAINTAIN** (or **CLIMB** or **DESCEND TO**) (level)] **HOLD** [direction] **AS PUBLISHED EXPECT APPRAOCH CLEARANCE** (or **FURTHER CLEARANCE**) **AT** (time) (additional instructions if necessary); c) ***REQUEST HOLDING INSTRUCTIONS;** d) **CLEARED** (or **PROCEED**) **TO** (significant point, name of facility or fix)[**MAINTAIN** (or **CLIMB** or **DESCEND TO**) (level)] **HOLD** [direction] **INBOUND TRACK** (three digits) **DEGREES RIGHT** (or **LEFT**) **HAND PATTERN OUTBOUND TIME** (number) **MINUTE(o**r **MINUTES) EXPECT APPROACH CLEARANCE**) (or **FURTHER CLEARANCE**) **AT** (time) (additional instructions if necessary); e) **CLEARED TO THE** (three digits) **RADIAL OF THE** (name**) VOR AT** (distance) **DME FIX** [**MAINTAIN**(or **CLIMB** or **DESCEND TO**) (level)] **HOLD** [directions] **INBOUND TRACK** (three digits) **DEGREES RIGHT** (or **LEFT) HAND PATTERN OUTBOUND TIME**(number) **MINUTES (**0r **MINUTES) EXPECT APPROACH CLEARANCE** (or **FURTHER CLEARANCE**) **AT** (time) (additional instructions if necessary) f) **CLEARED TO THE** (three digits) **RADIAL OF THE** (name) **VOR AT** (distance) **DME FIX** [**MAINTAIN** (or **CLIMB** or **DESCEND TO**) (level)]**HOLD BETWEEN** (distance**) AND** (distance) **DME INBOUND TRACK** (three digits)

	DEGREES RIGHT (or **LEFT**) **HAND PATTERN EXPECT APPROACH CLEARANCE** (or **FURTHER CLEARANCE**)) **AT** (time) (additional instructions if necessary)
10.3.22. EXPECTED APPROACH TIME(EAT)	a) **NO DELAY EXPECTED**; b) **EXPECTED APPROACH TIME** (time); c) **REVISED EXPECTED APPRAOCH TIME** (time); d) **DELAY NOT DETERMINED** (reasons).
PHRASEOLOGIES FOR USE ON AND IN THE VICINITY OF THE AERODROME	
10.3.23. ACKNOWLEDGEMENT BY VISUAL MEANS	a) **ACKNOWLEDGE BY MOVING AILERONS** (or **RUDDER);** b) **ACKNOWLEDGE BY ROCKING WINGS;** c) **ACKNOWLEDGE BY FLASHING LANDING LIGHTS.**
10.3.24. STARTING PROCEDURES … to request permission to start engines	a) *[aircraft location]**REQUEST START UP;** b) *[aircraft location]**REQUEST START UP**, **INFORMATION** (ATIS identification); c) **START UP APPROVED;** d) **START UP AT** (time); e) **EXPECT START UP AT (TIME)** f) **START UP AT OWN DISCRETION**; g) **EXPECT DEPARTURE** (time) **START UP AT OWN DISCRETION.**
10.3.25.PUSH BACK PROCEDURES	a) * [aircraft location] **REQUEST PUSHBACK**; b) **PUSHBACK APPROVED**; c) **STAND BY;** d) **PUSHBACK AT OWN DISCRETION;** e) **EXPECT** (number) **MINUTES DELAY DUE** (reason);
10.3.26. TOWING PROCEDURE … ATC responses	a) ****REQUEST TOW** [company name] (aircraft type) **FROM** (location) **TO** (location); b) **TOW APPROVED VIA** (specified routing to be followed); c) **HOLD POSITION**; d) **STAND BY** ** Denotes transmission from aircraft/tow vehicle combination.

10.3.27. TO REQUEST TIME CHECK AND/OR AERODROME DATA FOR DEPARTURE … when no ATIS broadcast is available	a) *** REQUEST TIME CHECK**; b) **TIME** (time); c) ***REQUEST DEPARTUR INFORMATION;** d) **RUNWAY (NUMBER), WIND** (direction and speed), (units) **QNH** (number) [(units)] **TEMPERATURE (MINUS)** (number), [VISIBILITY (distance) (units) [TIME (time)];
10.3.28. TAXI PROCEDURES … for departure …where detailed taxi instructions are required …where aerodrome information is not available from an alternative source such as ATIS …for helicopter operations ...after landing	a) **[aircraft type] [wake turbulence category if "heavy"] [aircraft location]* **REQUEST TAXI** *[intentions]*; b) **TAXI TO HOLDING POINT** [number] (**RUNWAY** (number)] **VIA** (specific route to be followed) **TIME** (time)] [**HOLD SHORT OF RUNWAY** (number) (or **CROSS RUNWAY** (number))]; c) ***** *[aircraft type] [wake turbulence category if "heavy"]* **REQUEST DETAILED TAXI INSTRUCTIONS;** d) **TAXI TO HOLDING POINT** *[number]* [RUNWAY *(number)*] **VIA** *(specific route to be followed)* [TIME *(time)*] [HOLD SHORT OF RUNWAY *(number)* (*or* CROSS RUNWAY *(number)*)]; f) **TAXI TO HOLDING POINT** *[number] (followed by aerodrome information as applicable)* [TIME *(time)*]; g) **TAKE (*or* TURN) FIRST (*or* SECOND) LEFT (*or* RIGHT);** h) **TAXI VIA** *(identification of taxiway)*; i) **TAXI VIA RUNWAY** (number); j) *** REQUEST AIR-TAXIING FROM** (or **VIA**) **TO** (location or routing as appropriate); k) **AIR-TAXI TO (or VIA)** (location or routing as appropriate) **CAUTION** (dust, blowing snow, loose debris, taxiing light aircraft, personnel, etc.)]; l) **AIR TAXI VIA** (director, as requested, or specified route) **TO** (location, heliport, operating or movement area, active or inactive runway). **AVOID** (aircraft or vehicles or personnel); m) ***REQUEST BACKTRACK;** n) **BACKTRACK APPROVED;** o) **BACKTRACK RUNWAY** (number);

… general	p) *[aircraft location] **REQUEST TAXI TO** (destination on aerodrome); q) **TAXI STRAIGHT AHEAD**; r) **TAXI WITH CAUTION;** s) **GIVE WAY TO** (description and position of other aircraft); t) * **GIVING WAY TO** (traffic); u) * **TRAFFIC** (or type of aircraft) **IN SIGHT**; v) **TAXI INTO HOLDING BAY**; w) **FOLLOW** (description of other aircraft or vehicle); x) **VACATE RUNWAY** y) * **RUNWAY VACATED;** z) **EXPEDITE TAXI** (reason); aa) ***EXPEDITING**; bb) [**CAUTION] TAXI SLOWER** (reason); cc) * **SLOWING DOWN.**
10.3.29. HOLDING	a) ☼**HOLD** (direction) **OF** (position, runway number, etc.); b) ☼**HOLD POSITION**; c) ☼**HOLD** (distance) **FROM** (position); d) ☼**HOLD SHORT OF** (position); e) * **HOLDING;** f) ***HOLDING SHORT.** ☼ Require specific acknowledgement from the pilot. * Denotes pilot transmission. Note: The procedure words ROGER and WILCO is insufficient acknowledgement of the instructions HOLD, HOLD POSITION and HOLD SHORT OF (position). In each case the acknowledgement will be by the phraseology HOLDING or HOLDING SHORT, as appropriate.
10.3.30.TO CROSS A RUNWAY	a) ***REQUEST CROSS RUNWAY** (number) Note: - If the control tower is unable to see the crossing aircraft (e.g. night, low visibility, etc.), the instruction will always be accompanied by a request to report when the aircraft has vacated and is clear of the runway. b) **CROSS RUNWAY** (number) [**REPORT VACATED];**

Note: The pilot will, when requested, report "**RUNWAY VACATED**" when the entire aircraft is beyond the relevant runway-holding position.	c) **EXPEDITE CROSSING RUNWAY** (number) **TRAFFIC** (aircraft type) (distance) **MILES FINAL**; d) **TAXI TO HOLDING POINT** [number] **RUNWAY** (number)] **VIA** (specific route to be followed), [**HOLD SHORT OF RUNWAY** (number)] or [**CROSS RUNWAY** (number)]. e) *** RUNWAY VACATED**
10.3.31. PREPARATION FOR TAKE OFF …if unable to issue take-off clearance …clearance to enter runway and await take- off clearance …conditional clearance …acknowledgement of a conditional clearance …confirmation or otherwise of the read back of conditional clearance	a) **UNABLE TO ISSUE** (designator**) DEPARTURE** (reasons); b) **REPORT WHEN READY** [**FOR DEPARTURE**]; c) **ARE YOU READY** [FOR DEPARTURE]?; d) **ARE YOUR READY FOR IMMEDIATE DEPARTURE?;** e) ***READY;** f) **WAIT** [reason]; g) **LINE UP [AND WAIT];** h) **LINE UP RUNWAY** (number); i) **LINE UP. BE READY FOR IMMEDIATE DEPARTURE**; j) (condition) **LINE UP** (brief reiteration of condition); k) *(condition) **LINING UP** (brief reiteration of the condition); l) [**THAT IS**] **CORRECT** (or **I SAY AGAIN**… (as appropriate).
10.3.32.TAKE-OFF CLEARANCE ….when reduced runway separation is used …when take-off clearance has not been complied with	a) **RUNWAY** (number) **CLEARED FOR TAKEOFF** [**REPORT AIRBORNE**]; b) (traffic information) **RUNWAY** (number) **CLEARED FOR TAKE-OFF**; c) **TAKE OFF IMMEDIATELY OR VACATE RUNWAY** [(instructions)]; d) **TAKE OFF IMMEDIATELY OR HOLD SHORT OF RUNWAY**; e) **HOLD POSITION, CANCEL TAKE OFF I SAY AGAIN CANCEL TAKE-OFF** (reasons);

…to cancel a take-off clearance … to stop a take-off after an aircraft has commenced take-off roll … for helicopter operations	f) ***HOLDING**; g) **STOP IMMEDIATELY** [(repeat aircraft call sign) **STOP IMMEDIATELY]**; h) ***STOPPING**; i) **CLEARED FOR TAKE-OFF [FROM LOCATION]** (present position, taxiway, final approach and take-off area, runway and number); j) ***REQUEST DEPARTURE INSTRUCTIONS**; k) **AFTER DEPARTURE TURN RIGHT** (or **LEFT** or **CLIMB**) (instructions as appropriate).
10.3.33. TURN OR CLIMB INSTRUCTIONS AFTER TAKE-OFF … to request airborne time … heading to be followed … when a specific track is to be followed	a) ***REQUEST RIGHT** (or **LEFT**) **TURN;** b) **RIGHT** (or **LEFT TURN APPROVED**; c) **REPORT AIRBORNE**; d) **AIRBORNE** (time) e) **AFTER PASSING** (level) (instructions) f) **CONTINUE RUNWAY HEADING** (instructions); g) **TRACK EXTENDED CENTRELINE** (instructions) h) **CLIMB STRAIGHT AHEAD** (instructions).
10.3.34. ENTERING AN AERODROME TRAFFIC CIRCUIT	a) * [aircraft type](position) (level) **FOR LANDING**; b) **JOIN** (direction of circuit) (direction of circuit) (runway number)[**SURFACE**] **WIND** (direction and speed) (units) [**TEMPERATURE [MINUS]** (number)] **QNH** (number) [(units)] [**TRAFFIC**(detail)]: c) **MAKE STRAIGHT-IN APPROCH, RUNWAY** (number) **[SURFACE] WIND** (direction and speed) (units)[**TEMPERATURE[MINUS] (**number) **QNH** (number) (units)][**TRAFFIC** (detail)]; d) **JOIN** (position in circuit) [**RUNWAY** (number)] **QNH** (number) (units)] [**TRAFFIC** (detail)].

10.3.35. IN THE CIRCUIT	a) * (position in circuit, e.g. **DOWNWIND / FINAL**); b) **NUMBER … FOLLOW** (aircraft type and position) [additional instructions if required].
10.3.36.APPROACH INSTRUCTIONS	a) **MAKE SHORT APPROACH.** b) **MAKE LONG APPROCH** (or **EXTEND DOWNWIND**); c) **REPORT BASE** (or **FINAL**, or **LONG FINAL**); d) **CONTINUE APPROCH [PREPARE FOR POSSIBLE GO AROUND].**
10.3.37.LANDING CLEARANCE ….when reduced runway separation is used … special operations …to make an approach along or parallel to a runway, descending to an agreed minimum level … to fly past the control tower or other observation point for the purpose of visual inspection by persons on the ground. … for helicopter operations	a) **RUNWAY** (number) **CLEARED TO LAND**; b) (traffic information) **RUNWAY** (number) **CLEARED TO LAND**; c) **CLEARED TOUCH AND GO**; d) **MAKE FULL STOP**; e) ***REQUEST LOW APPROACH** (reasons); f) **CLEARED LOW APPROACH [RUNWAY** (number)][(altitude restriction if required) (go around instructions)]; g) * **REQUEST LOW PASS** (reasons); h) **CLEARED LOW PASS** [**RUNWAY** (number)][(altitude restriction if required) (go around instructions)]; i) * **REQUEST STRAIGHT-IN** (or **CIRCLING APPROACH, LEFT** (or **RIGHT**) **TURN TO** (location)); j) **MAKE STRAIGHT-IN** (or **CIRCLING APPROACH**, **LEFT** (or **RIGHT**) **TURN TO** (location, runway, taxiway, final approach and take-off area) [**ARRIVAL** (or **ARRIVAL ROUTE**) (number, name, or code)]. [**HOLD SHORT OF** (active runway, extended runway centre line, other)]. [**REMAIN** (direction or distance) **FROM** (runway, runway center line, other helicopter or aircraft)]. [**CAUTION** (power lines, unlighted obstructions, wake turbulence, etc.)]. **CLEARED TO LAND**.

10.3.38.DELAYING AIRCRAFT	**a) CIRCLE THE AERODROME;** **b) ORBIT (RIGHT, or LEFT)[FROM PRESENT POSITION];** **c) MAKE ANOTHER CIRCUIT.**
10.3.39. MISSED APPROACH	**a) GO AROUND;** **b) *GOING AROUND**.
10.3.40. INFORMATION TO AIRCRAFT ...when pilot requested visual inspection of landing gear … wake turbulence … jet blast on apron or taxiway … propeller-driven aircraft slipstream	**a) LANDING GEAR APPEARS DOWN;** **b) RIGHT** (or **LEFT**, or **NOSE**) **WHEEL APPEARS UP** (or **DOWN**); **c) WHEELS APPEAR UP**; **d) RIGHT** (or **LEFT**, or **NOSE**) **WHEEL DOES NOT APPEAR UP** (or **DOWN**); **e) CAUTION WAKE TURBULENCE [FROM ARRIVING (or DEPARTING**) (type of aircraft) [additional information as required]; **f) CAUTION JET BLAST;** **g) CAUTION SLIPSTREAM**.
10.3.41. RUNWAY VACATING AND COMMUNICATIONS AFTER LANDING … for helicopter operations	**a) CONTACT GROUND** (frequency); **b) WHEN VACATED CONTACT GROUND** (frequency); **c) EXPEDITE VACATING**; **d) YOUR STAND (OR GATE**)(designation); **e) TAKE** (or **TURN**) **FIRST** (or **SECOND**, or **CONVENIENT**) **LEFT** (or **RIGHT**) **AND CONTACT GROUND** (frequency); **f) AIR-TAXI TO HELICOPTER STAND** (or) **HELICOPTER PARKING POSITION** (area); **g) AIR-TAXI TO** (or **VIA**) (location or routing as appropriate) [**CAUTION** (dust, blowing snow, loose debris, taxiing light aircraft, personnel, etc.)]; **h) AIR TAXI VIA** (direct, as requested, or specified route) **TO** (location heliport, operating or movement area, active or inactive runway). **AVOID** (aircraft or vehicles or personnel).

CHAPTER 11

TRAINING AND RATING PROGRAM

11.1. TRAINING PROGRAM

11.1.1. Personnel involved in ATS provision will be trained adequately. For this purpose OJTI will prepare a training plan according to 11.2. and conduct training for all ATS trainees.

11.1.2. A Training and Rating program will ensure that an individual performing a function in conjunction with any air traffic services is competent to perform that function.

11.1.3. The provisions for ATC license and rating are prescribed in Personnel Licensing Requirements (PELR-10) and Manual of Standards: Licensing/ Rating of ATC Personnel-2015.

11.1.4. Processes which address the integrity of staff training will be defined, documented and maintained.

11.2. UNIT TRAINING PLAN (UTP)

11.2.1. The UTP will detail the processes by which student ATCs are trained. Student ATCs will require specific unit training in addition to basic training before commencing OJT. The UTP will also be applicable to newly transferred ATC as he/she has to work in local environment with different procedures, equipment and system; local weather and traffic pattern.

11.2.2. The DHCAO will prepare a UTP and get the approval from the Licensing Authority so that it will be adopted by the DHCAO in accordance with the provision mentioned in chapter 13, article 13.5 of MATS Nepal 2014.

11.2.3. UTP will cover all phases of trainings as mentioned in article 13.5.2 of MATS, Nepal-2014

11.2.4. All trainings program will be conducted by OJTI subject to the availability of manpower and facilities

11.2.5. The Dhangadhi CAO will adopt the following Administrative Procedures regarding UTP:

a) Submit a draft of its UTP to the Licensing Authority as appropriate for approval.
b) Must notify Licensing Authority of any proposed changes and amendments to the approved UTP in order to obtain continued approval.
c) Retain the complete training records for all student air traffic controllers which should include records of transitional, pre-OJT, OJT training and validation examination.

11.3. RATING

11.3.1. Categories for the ratings for the Air Traffic Controller in DHCAO are as follows:

a) Aerodrome Control Rating
b) Approach Control Procedural Rating

11.3.2. All student air traffic controllers have to undergo Unit Training before commencing rating.

11.3.3. The provision for rating will be in accordance with the MOS-L/R of ATC personnel 2015.

11.4. QUALIFICATIONS OF ON JOB TRAINING INSTRUCTOR (OJTI)

11.4.1. Qualifications of OJTI will be in accordance with Chapter 5, Para 5.1.3.4 of Manual of Standards for Licensing/Rating of ATC Personnel.

11.4.2. DHCAO will avoid situations where the persons giving the instruction are also responsible for examining the student on completion of the instruction.

11.5. SELECTION CRITERIA FOR OJTI

11.5.1. Interested ATCs who meet the requirements as per Chapter 5, Para 5.1.3.4 of Manual of Standards: Licensing/ Rating of ATC Personnel has to submit an application letter to the ANS directorate for the post of OJTI.

11.5.2. Following documents will be submitted by the applicant;

a. Valid ATC license
b. Valid Rating in all ATC Rating positions
c. Recommendation letter from Airport Chief.

11.5.3. OJT Instructor Selection criteria

a) *Written Examination*: Applicant will appear in the written examination conducted on the basis of syllabus laid down as hereunder:
   - PELR 2010 Jan (Amendment on 4 Sept. 2013) para 10.2.1(c)
   - MOS L/R of ATC personnel 2015 August (Amendment no.1, March 2017) , Appendix – A (ATC-L)
b) *Theory Examination*: Total Marks =100, 80% of the question will be multiple choice, 20% will be subjective,
c) Pass Mark will be 80 %
d) Duration: 3 hours.
e) Presentation
   - Applicant passed in the written examination will have to present a paper on relevant subject matter of ATS.
   - Duration: 30 min
   - Pass Mark will be 80 %.

Note: Presentation will be evaluated by the OJTI selection team in the presence of Airport Chief or a representative designated by him/her. OJTI selection team will comprise DCATCO, representatives from ATM Department and Airport Chief of DHCAO and/or his/her representative as applicable.

11.5.4. Publication of Result

The candidate who scores highest aggregate total marks in written examination and Paper presentation will be recommended for OJTI to ANS directorate.

CHAPTER 12

ATS SAFETY MANAGEMENT

12.1. GENERAL

12.1.1. DHCAO will ensure that the level of air traffic services (ATS) and communications and navigation, as well as the ATS procedures under its jurisdiction are appropriate and adequate for maintaining an acceptable level of safety in the provision of ATS.

12.1.2. DHCAO will implement Safety Management System(SMS) for the air traffic services under its jurisdiction to ensure that safety in the provision of ATS is maintained as per the provision mentioned in chapter 2 of MATS, Nepal with the objectives as specified in article 2.2 of MATS Nepal.

12.2. ATS SAFETY MANAGEMENT ACTIVITIES

12.2.1. An ATS SMS will include all the activities an mentioned in chapter 2, section 2.3.1 of MATS, Nepal with respect to the provision of air traffic services.

12.2.2. All activities undertaken in an ATS SMS will be fully documented. All documentation will be retained for such period of time as is specified by the ANS Directorate.

12.3. MONITORING OF SAFETY LEVELS

12.3.1. Data for use in safety monitoring programmes will be collected from as wide range of sources as possible

12.3.2. DHCAO will use a formal incident reporting system for ATS personnel to facilitate the collection of information on actual or potential safety hazards or deficiencies related to the provision of ATS, including route structures, procedures, communication and navigation systems and other safety significant systems and equipment as well as controller workloads.

12.3.3. Safety-related reports concerning the operation of air traffic services, the serviceability of ATS facilities and systems, including air traffic incident reports, will be systematically reviewed in order to detect any trend in the operation of such systems which may have an adverse effect on safety.

12.3.4. Occurrence will be reported in the prescribed form as mentioned in Appendix 4, 5 and 6 of MATS,Nepal-2014.

12.4. SAFETY REVIEW

12.4.1. General requirement

Safety reviews of Dhangadhi Control towers will be conducted on a regular and systematic basis by personnel qualified through training, experience and expertise and having a full understanding of relevant civil aviation requirements (CARs), safe operating practices and Human Factors principles**.**

12.4.2. The scope of Dhangadhi Tower safety reviews will include at least the following issues:

12.4.2.1. Regulatory issues to ensure that:

a) ATS operations manuals, Control tower instructions and air traffic control (ATC) coordination procedures are complete, concise and up-to-date;

b) the ATS route structure, where applicable, provides for:

i. adequate route spacing; and
ii. crossing points for ATS routes located so as to reduce the need for controller intervention and for inter- and intra-unit coordination;

c) the separation minima used in the airspace or at the aerodrome are appropriate and all the provisions applicable to those minima are being complied with;

d) where applicable, provision is made for adequate observation of the maneuvering area, and procedures and measures

e) aimed at minimizing the potential for inadvertent runway incursions are in place. This observation may be performed visually.

f) appropriate procedures for low visibility aerodrome operations are in place;

g) traffic volumes and associated controller workloads do not exceed defined, safe levels and that procedures are in place for regulating traffic volumes whenever necessary;

h) procedures to be applied in the event of failures or degradations of ATS systems, including communications and navigation systems, are practicable and will provide for an acceptable level of safety; and

i) Procedures for the reporting of incidents and other safety-related occurrences are implemented, that the reporting of incidents is encouraged and that such reports are reviewed to identify the need for any remedial action.

12.4.2.2. Operational and Technical issues to ensure that:

a) the environmental working conditions meet established levels for temperature, humidity, ventilation, noise and ambient lighting, and do not adversely affect controller performance;

b) automation systems generate and display flight plan, control and coordination data in a timely, accurate and easily recognizable manner and in accordance with Human Factors principles;

c) equipment, including input/output devices for automation systems, are designed and positioned in the working position in accordance with ergonomic principles;

d) communication, navigation and other safety significant systems and equipment:

i. are tested for normal operations on a routine basis;
ii. meet the required level of reliability and availability as defined;
iii. provide for the timely and appropriate detection and warning of system failures and degradations;
iv. include documentation on the consequences of system, subsystem and equipment failures and degradations;
v. include measures to control the probability of failures and degradations; and

e) include adequate backup facilities and/or procedures in the event of a system failure or degradation; and

f) Detailed records of systems and equipment serviceability are kept and periodically reviewed.

Note- In the context above, the terms reliability and availability have the following meanings:

Reliability. The probability that a device or system will function without failure over a specified time period or amount of usage; and

Availability. The ratio of percentage of the time that a system is operating correctly to the total time in that period.

12.4.2.3. Licensing and Training issues to ensure that:

a) controllers are adequately trained and properly licensed with valid ratings;
b) controller competency is maintained by adequate and appropriate refresher training, including the handling of aircraft emergencies and operations under conditions with failed and degraded facilities and systems;
c) controllers are provided relevant and adequate training in order to ensure efficient teamwork;
d) the implementation of new or amended procedures, and new or updated communications and other safety significant systems and equipment is preceded by appropriate training and instruction;
e) controller competency in the English language is satisfactory in relation to providing ATS to international air traffic as well as domestic traffic; and
f) Standard phraseology is used.

12.5. SAFETY ASSESSMENT:

12.5.1. Safety assessment will be carried out in respect of proposals for significant airspace reorganizations, for significant changes in the provision of ATS procedures applicable to an airspace or an aerodrome, and for the introduction of new equipment, systems or facilities.

Note 1.— When, due to the nature of the change, the acceptable level of safety cannot be expressed in quantitative terms, the safety assessments may rely on operational judgments.

12.5.2. Proposals will be implemented only when the assessment has shown that an acceptable level of safety will be met.

12.5.3. The safety assessment will consider relevant all factors determined to be safety-significant as mentioned in article 2.6.2 of MATS, Nepal.

12.6. SAFETY-ENHANCING MEASURES

12.6.1. Any actual or potential hazard related to the provision of ATS within an airspace or at an aerodrome, whether identified through an ATS safety management activity or by any other means, will be assessed and classified for its risk acceptability.

12.6.2. Except when the risk can be classified as acceptable, DHCAO, as a matter of priority and as far as practicable, implement appropriate measures to eliminate the risk or reduce the risk to a level that is acceptable.

12.6.3. If it becomes apparent that the level of safety applicable to an airspace or an aerodrome is not, or may not be achieved, then DHCAO will, as a matter of priority and as far as practicable, implement appropriate remedial measures.

12.6.4. Implementation of any remedial measure will be followed by an evaluation of the effectiveness of the measure in eliminating or mitigating a risk.

CHAPTER 13

PROCEDURES RELATED TO EMERGENCIES, COMMUNICATION FAILURE AND CONTINGENCIES

13.1. EMERGENCY PROCEDURES

13.1.1. The circumstances of each aircraft emergency can vary to such an extent that detailed instructions cannot be given for every situation. The procedures outlined in this section are intended as a general guide and controllers will use their own judgment when handling a particular emergency.

13.1.2. Controllers will always be alert to the possibility of an aircraft emergency. Speed may be necessary in certain circumstances but calm co-ordinate actions are essential in all situations.

13.1.3. Controllers will offer as much assistance as possible to any aircraft that is considered to be in an emergency situation. Assistance to the aircraft can include the provision of information on the availability of aerodromes and their associated approach aids, weather information and details of terrain clearance. An emergency may require alerting action to be taken immediately or it may develop to that point later.

13.1.4. When an emergency is declared by an aircraft, the Dhangadhi TWR will take appropriate and relevant action as follows:

a) unless clearly stated by the flight crew or otherwise known, take all necessary steps to ascertain aircraft identification and type, the type of emergency, the intentions of the flight crew as well as the position and level of the aircraft;
b) decide upon the most appropriate type of assistance which can be rendered;
c) enlist the aid of any other ATS unit or other services which may be able to provide assistance to the aircraft;
d) provide the flight crew with any information requested as well as any additional relevant information, such as details on suitable aerodromes, minimum safe altitudes, weather information;
e) obtain from the operator or the flight crew such of the following information as may be relevant: number of persons on board, amount of fuel remaining, possible presence of hazardous materials and the nature thereof; and
f) notify the appropriate ATS units and authorities as specified in local instructions.
g) Plot aircraft's position on map;
h) Assist pilot in every way possible to make a safe landing;
i) Advise pilot of nearest aerodrome if aircraft position is known;
j) Inform Nepaljung TWR & the Kathmandu ACC giving full details and give all possible assistance in warning airfields adjacent to the aircraft track and in warning the local rescue services in the area in which the aircraft may crash-land.
k) inform Airport Chief and local safety services (Fire Station, Airport security Police, Nepal Army, Armed Police Force, Chief District Officer etc);
l) Inform airline operator or representative.

Note: In case of Unlawful interference and aircraft bomb threat, the Dhangadhi TWR will take appropriate and relevant action as specified in article 15.1.3.3.1 and 15.1.3.4 of MATS, Nepal.

13.1.5. An aircraft known or believed to be in a state of emergency, including being subjected to unlawful interference, will be given priority over other aircraft.

13.1.6. The Dhangadhi TWR in communication with the Unlawful interference and/or bomb threat aircraft will ascertain the intentions of the flight crew and report those intentions to other ATS units which may be concerned with the flight.

13.1.7. the Unlawful interference and/or bomb threat aircraft will be handled in the most expeditious manner while ensuring, to the extent possible, the safety of other aircraft and that personnel and ground installations are not put at risk.

13.1.8. Air traffic services personnel will be prepared to recognize any indication of the occurrence of unlawful interference and aircraft bomb threat. A controller may suspect that an aircraft is in an emergency situation or has suffered unlawful interference when:

a) radio contact is not established at the time it is expected to be established;
b) radio contact is lost;
c) a pilot makes a report about the malfunctioning of his aircraft or the unusual behavior of persons on-board;
d) the erratic behavior of an aircraft;
e) it is overdue at an aerodrome; or
f) The pilot reports that the aircraft is short of fuel.

13.1.9. The Airport Chief if available will be informed as soon as practicable and complete co-ordination will be maintained between other ATS units.

13.1.10. Pilots have been advised that, in the event of an emergency situation, the Dhangadhi Tower can provide the necessary priority and handling if the declaration on the RTF. Pilots have also been advised that the extent to which Dhangadhi Control Tower will be able to offer assistance will depend on the amount of information provided and on its being transmitted at the earliest opportunity. Furthermore, it is preferable that if pilots believe that they are facing an emergency situation, to declare it as early as possible and cancel it later if they decide that the situation allows.

13.1.11. If the controller is in radio contact with the aircraft he/she will ask the pilot if he wishes to declare an emergency and, if not specified by the pilot, the class of emergency being declared.

13.1.12. When a pilot has given certain items of information normally associated with an emergency message but has not prefixed the transmission with 'MAYDAY' or 'PAN', the controller is to ask the pilot if he wishes to declare an emergency. If the pilot declines to do so, the controller may, if he thinks it appropriate, carry out the necessary actions as if the pilot had declared an emergency.

13.1.13. The Dhangadhi Aerodrome controller will take the following action at an aerodrome on receiving an urgency call:

a) If the pilot elects to land at Dhangadhi aerodrome, rearrange traffic as necessary to enable him to make an uninterrupted approach;
b) alert local safety services (Fire Station, Airport Security Police, Nepal Army, Armed Police Force etc), and initiate local emergency action as necessary and appropriate;
c) Inform Nepaljung TWR and Dhangadhi Airport Chief giving full details;
d) If any doubt exists that the aircraft can reach Dhangadhi aerodrome, request Kathmandu ACC to alert RCC stating that the Alert phase exists;
e) Inform the airline operator or representatives.

13.1.14. Transfer of Control for Emergency aircraft

13.1.14.1 On receipt of information that indicates that an aircraft is in an emergency, the controller will decide whether or not to transfer the aircraft to another agency. The choice of agency will depend upon the circumstances and no hard and fast rules apply. The following guidance material will help controllers to make this decision.

a) Retaining Control

- If the controller can offer immediate assistance the aircraft will normally be retained on the frequency. If necessary, impose a radio silence on other aircraft or transfer them to another frequency.
- Alternatively it may be more expedient to transfer the emergency aircraft to a discrete frequency, particularly if a radio silence would endanger other traffic.
- The aircraft will be retained on the original frequency if it is unreasonable to ask the pilot, or if he is not prepared, to change frequency. The controller may be able to relay instructions and information from other units to the pilot.

b) Transferring Control

- If a controller considers that another unit may be able to give more assistance then he/she can himself and in the circumstances it is reasonable to ask the pilot to change frequency, he/she will either:
- consult the Nepaljung TWR and transfer the aircraft according to his instructions; or
- alert the nearest suitable unit and transfer the aircraft to a common frequency, giving assistance to that unit as required.

13.1.14.2. Before transferring aircraft, controllers will obtain sufficient information from the pilot to be convinced that the aircraft will receive more assistance from another unit. If a change of frequency is desirable the pilot will be instructed to revert immediately if there is no reply on the new frequency. Controllers will then listen out on the original frequency until the aircraft is known to be in two-way communication with the other unit.

13.1.15. Maneuvering instructions to an aircraft experiencing engine failure will be limited to a minimum. When appropriate, other aircraft operating in the vicinity of the aircraft in emergency will be advised of the circumstances.

13.2. EMERGENCY DESCENT

13.2.1. Upon recognition that an aircraft is making an emergency descent, all appropriate action will be taken by Dhangadhi TWR immediately to safeguard all aircraft concerned as specified in chapter 15, article 15.1.4.1. of MATS, Nepal.

13.3. AIR-GROUND COMMUNICATIONS FAILURE

13.3.1. As soon as it is known that two-way communication has failed, action will be taken to ascertain whether the aircraft is able to receive transmissions from the Dhangadhi TWR by requesting it to execute a specified manoeuvre which can be observed by transmitting a specified signal in order to indicate acknowledgement.

13.3.2. If the aircraft fails to indicate that it is able to receive and acknowledge transmissions, separation will be maintained between the aircraft having the communication failure and other aircraft.

13.3.3. As soon as it is known that two-way communication has failed, appropriate information describing the action taken by the Dhangadhi TWR, or instructions justified by any emergency situation, will be transmitted blind for the attention of the aircraft concerned aircraft, on the frequencies available on which the aircraft is believed to be listening.

13.3.4. As soon as it is known that an aircraft which is operating in its area of responsibility is experiencing an apparent radio communication failure, the Dhangadhi TWR will forward information concerning the radio communication failure to all ATS units concerned along the route of flight.

13.3.5. When the Dhangadhi TWR receives information that an aircraft, after experiencing a communication failure has re-established communication or has landed, Dhangadhi TWR will inform the ATS unit in whose area the aircraft was operating at the time the failure occurred, and other ATS units concerned along the route of flight, giving necessary information for the continuation of control if the aircraft is continuing in flight.

13.3.6. *Non-Appearance of Aircraft:* If an aircraft, which has been cleared to commence approach, after completing any necessary holding, fails to land within 5 minutes of the estimated time of landing and communication cannot be established, the following action will be taken by Dhangadhi TWR:

- Request other aircraft flying in the vicinity of the aircraft's last known position to be on the lookout;
- Exercise caution when authorizing the movement of aerodrome traffic;
- Alert the emergency services in accordance with AEP;
- Check with other aerodromes in vicinity;
- Advise Nepaljung TWR.

13.4. ASSISTANCE TO VFR FLIGHTS

13.4.1. A VFR flight reporting that it is uncertain of its position or lost, or encountering adverse meteorological conditions, will be considered to be in a state of

emergency and handled as such. The controller will, under such circumstances, communicate in a clear, concise and calm manner and care will be taken, at this stage, not to question any fault or negligence that the pilot may have committed in the preparation or conduct of the flight. Depending on the circumstances, the pilot should be requested to provide any of the pertinent information mentioned in 15.3.1.1. of MATS, Nepal as appropriate so as to provide better assistance.

13.4.2. If communications with the aircraft are weak or distorted, Dhangadhi TWR will suggest the aircraft to climb to a higher level, provided meteorological conditions and other circumstances permit.

13.4.3. The pilot will be provided with reports and information on suitable aerodromes in the vicinity where VMC conditions exist.

13.4.4. Dhangadhi aerodrome control tower will, as necessary, use all available communication facilities to endeavor to establish and maintain communication with an aircraft in a state of emergency, and to request news of the aircraft.

13.5. INFROMATION TO AIRCRAFT OPERATING IN THE VICINITY OF AN AIRCRAFT IN A STATE OF EMERGENCY

13.5.1. When it has been established by Dhangadhi aerodrome control tower that an aircraft is in a state of emergency, other aircraft known to be in the vicinity of the aircraft involved will be informed of the nature of the emergency as soon as practicable**.**

13.5.2. When the aerodrome control tower knows or believes that an aircraft is being subjected to unlawful interference, no reference will be made in ATS air-ground communications to the nature of the emergency unless it has first been referred to in communications from the aircraft involved and it is certain that such reference will not aggravate the situation.

13.6. CLASSIFICATION OF EMERGENCIES

Aircraft emergencies are classified into ten categories as follows:

13.6.1. **"ALERT 1" - AIRCRAFT ACCIDENT (on-airport)**

When an aircraft accident has occurred on the airport or in the immediate vicinity of the airport (within 4 kilometers of the airport boundary).

13.6.2. **"ALERT 2" - AIRCRAFT ACCIDENT (off-airport)**

When an aircraft accident has occurred - but not in the immediate vicinity of the Airport (more than 4 kilometers from the airport boundary).

13.6.3. **"ALERT 3 " - FULL EMERGENCY (Airborne Aircraft)**

When an aircraft approaching the airport has declared an emergency if it is known to have problem or defect which will cause or is likely to cause an aircraft accident.

13.6.4. **"ALERT 4" - UNLAWFUL INTERFERENCE**

When it is known or suspected that an aircraft has been subjected to a threat of sabotage or unlawful seizure (hi-jacking) - or any act has been committed which would affect the normal operation of that aircraft or safety of its occupants.

13.6.5. "ALERT 5" - BOMB THREAT - TO AIRCRAFT

When information is received that an explosive device has been located (or suspected) on an aircraft either in the air or on the ground.

13.6.6. "ALERT 6" - BOMB THREAT - TO BUILDING

When information is received that an explosive device has been located (or suspected) in, or around, airport building, facilities or equipment

13.6.7 "ALERT 7" -AIRCRAFT GROUND INCIDENT

When an incident occurs involving an aircraft on the ground which will affect the safety of that aircraft.

13.6.8 "ALERT 8"- STRUCTURAL FIRE

When a fire occurs on the airport buildings, facilities, equipment or vehicles, and which does not directly involve an aircraft. Fires in Navigational or other auxiliary service station or complex or facilities located off-airport are also included in this category.

13.6.9 "ALERT 9" - LOCAL STANDBY

When an aircraft approaching the airport has developed - or suspected to have developed – some defect, but this defect will not create any difficulty in effecting a safe landing. Crash vehicles may standby in the station, or at position on the movement area, as the situation warrants.

13.6.10 "ALERT 10" - WEATHER STANDBY

When severe storms or other expected adverse weather conditions can affect the safety of aircraft, or adversely affect the safety of persons, buildings, facilities, or equipment at the Airport.

NOTE: The above classification - by ALERT number - will be used for initial notification of emergency situations. If the emergency condition changes, complete additional notifications will be made for the new condition - Example: an Alert 9 (Local Standby) may escalate to an alert 3 (Full Emergency) condition.

13.6.11. "ALERT 11" – MEDICAL EMERGENCY

Any person or group of person (crew, passengers, staffs and visitors) if suddenly suffers from any type of illness during flight and/or, at the airport.

13.7. SOME MAJOR AIRCRAFT EMERGENCIES

13.7.1. Detail guidelines to Dhangadhi ATCs regarding some major emergencies are mentioned in chapter 13, article 13.9 of Nepaljung ATSOM.

13.8. NOTIFICATION OF RESCUE COORDINATION CENTRE

13.8.1. Without prejudice to any other circumstances that may render such notification advisable, Dhangadhi aerodrome control tower will notify rescue coordination centers immediately an aircraft is considered to be in a state of emergency in accordance with the phase of emergencies: Uncertainty, Alert and Distress phase.

13.8.2. In the event of a state of emergency arising to an aircraft, Dhangadhi aerodrome control will notify immediately the Kathmandu ACC/ Rescue coordination centre(RCC), except that notification of the ACC/RCC centre will not be required when the nature of the emergency is such that the notification would be superfluous.

13.8.3. Nevertheless, whenever the urgency of the situation so requires, the aerodrome control tower will first alert and take other necessary steps to set in motion all appropriate local rescue and emergency organizations which can give the immediate assistance required.

13.8.4. The notification will contain such of the following information as is available in the order listed:

a) INCERFA, ALERFA or DISTRESFA, as appropriate to the phase of the emergency;
b) agency and person calling;
c) nature of the emergency;
d) significant information from the flight plan;
e) unit which made last contact, time and means used;
f) last position report and how determined;
g) colour and distinctive marks of aircraft;
h) dangerous goods carried as cargo;
i) any action taken by reporting office; and
j) other pertinent remarks.

13.8.5. Such part of the information which is not available at the time of notification is made to a RCC, will be sought by an air traffic services unit prior to the declaration of a distress phase, if there is reasonable certainty that this phase will eventuate.

13.8.6. All information notified to the rescue coordination centre will, whenever practicable, also be communicated, without delay, to the operator.

13.9. OTHER IN-FLIGHT CONTINGENCIES

13.9.1 As soon as Dhangadhi Tower becomes aware of a strayed aircraft, it will take all necessary steps as outlined in 13.8.2. and 13.8.3 to assist the aircraft and to safeguard its flight.

Note.— Navigational assistance by Dhangadhi Tower is particularly important if the Tower becomes aware of an aircraft straying, or about to stray, into an area where there is a risk of interception or other hazard to its safety.

13.9.2 If the aircraft's position is not known, the Dhangadhi Tower will take necessary action as per the procedures mentioned in chapter 15, article 15.4.1.1.1. of MATS,Nepal-2014

13.9.3 When the aircraft's position is established, the Dhangadhi Tower will take necessary action as per the procedures mentioned in chapter 15, article 15.4.1.1.2. of MATS,Nepal-2014

13.9.4 As soon as Dhangadhi Tower becomes aware of an unidentified aircraft in its area, it will endeavor to establish the identity of the aircraft whenever this is necessary for the provision of air traffic services or required by the appropriate military authorities in accordance with locally agreed procedures. To this end, Dhangadhi Tower will take such of the steps as mentioned in chapter 15, article 15.4.1.2 of MATS, Nepal-2014, as appropriate in the circumstances.

13.9.5 The Dhangadhi Tower will, as necessary, inform the appropriate military unit as soon as the identity of the aircraft has been established.

13.9.6 The Dhangadhi tower will consider that a strayed or unidentified aircraft may be the subject of unlawful interference, the appropriate authority designated by the State will immediately be informed, in accordance with locally agreed procedures.

13.9.7 **Unauthorized Entry into Nepalese Airspace**

As soon as Dhangadhi Tower learns that an aircraft has entered Nepalese airspace without getting permission from CAAN, it shall instruct aircraft to land at Tribhuvan International Airport (TIA). If the aircraft does not comply with the ATC instruction to land at TIA then the Dhangadhi TWR will:

a) Determine the identity, position and purpose of entry into Nepalese airspace.
b) Notify the aircraft about its unauthorized entry and instruct the aircraft to leave the Nepalese airspace immediately.
c) Inform the Airport Security Committee/ military authority.
d) Inform relevant information to Kathmandu ACC and DGCA for the necessary action.
e) If the aircraft does not comply with the ATC instruction, instruct aircraft to contact Kathmandu ACC or act as instructed by DGCA.

13.9.8 **Fuel emergency and minimum fuel**

13.9.8.1 General procedures to be applied when a pilot reports an emergency situation are contained in chapter 15, article 15.1.1 and 15.1.2 of MATS, Nepal.

13.9.8.2 Coordination procedures to be applied between transferring and accepting ATS units for flights in fuel emergency or minimum fuel situations are contained in Chapter 10, 10.2.5 of MATS, Nepal.

13.10. ATC CONTINGENCIES

13.10.1. Radio Communication Contingencies

13.10.1.1. ATC contingencies related to communications, i.e. circumstances preventing a controller from communicating with aircraft under control, may be caused by either a failure of ground radio equipment, a failure of airborne equipment, or by the control frequency being inadvertently blocked by an aircraft transmitter. The duration of such events may be for prolonged periods and appropriate action to ensure that the safety of aircraft is not affected will therefore be taken immediately.

13.10.1.2. **Ground radio failure**

13.10.1.2.1. In the event of complete failure of the ground radio equipment used for ATC, the Dhangadhi aerodrome controller will:

a) where aircraft are required to keep a listening watch on the emergency frequency 121.5 MHz, attempt to establish radio-communications on that frequency;

b) without delay inform all adjacent ATS units, as applicable, of the failure;

c) appraise such units of the current traffic situation;

d) if practicable, request their assistance, in respect of aircraft which may establish communications with those positions or units, in establishing separation between and maintaining control of such aircraft; and

e) Instruct adjacent ATS units to hold or re-route all flights outside the area of responsibility of the Dhangadhi Tower until such time that the provision of normal services can be resumed.

13.10.1.2.2. In order to reduce the impact of complete ground radio equipment failure on the safety of air traffic, Dhangadhi Tower will follow the following procedure;

13.10.1.2.3. **During VHF/HF problem**:

- When 122.5 MHz is U/S, provide Air Traffic Control Service on 121.5 MHz
- When both 122.3 MHz and 121.5 MHz are U/S,
- Advise other station/ Kathmandu ACC about the existing situation & to relay to concern traffic.
- Advise all inbound to divert nearest station.
- Stop departures to/from Dhangadhi, except rescue flight and other mercy flights.
- Give priority to ARRIVALS.
- Stop local flights within Control Zone
- Increase separation minima as required.
- Whenever feasible use portable VHF for landing and take-off clearance and surface movement; or

- Whenever feasible use Light gun for landing.
- When HF on 5805.5 is U/S, Use Automatic Message Handling System(AMHS) for the exchange of flight data with different aerodromes

13.10.1.2.4. **During problem in airfield lighting system (for IMC and night operation**)

- Runway light is mandatory for night operation.

- When Runway light is available and PAPI light is U/S, then Inform pilot to make his/her decision whether to make approach/landing.

13.10.1.3. **Blocked frequency**

In the event that the control frequency is inadvertently blocked by an aircraft transmitter, the following additional steps will be taken:

a) attempt to identify the aircraft concerned;
b) if the aircraft blocking the frequency is identified, attempts will be made to establish communication with that aircraft, e.g. on the emergency frequency 121.5 MHz, through the aircraft operator's company frequency. If applicable, on any VHF frequency designated for air-to-air use by flight crews or any other communication means. If the aircraft is on the ground, by direct contact;
c) if communication is established with the aircraft concerned, the flight crew will be instructed to take immediate action to stop inadvertent transmissions on the affected control frequency.
d) In above situation, inform Kathmandu ACC and Nepalgung Tower will be informed and advice the aircraft to contact on VHF 118.3 MHZ.

13.10.1.4. **Unauthorized use of ATC frequency**

13.10.1.4.1. Instances of false and deceptive transmissions on ATC frequencies which may impair the safety of aircraft can occasionally occur. In the event of such occurrences, the Dhangadhi Tower will:

a) correct any false or deceptive instructions or clearances which have been transmitted;

b) advise all aircraft on the affected frequency(ies) that false and deceptive instructions or clearances are being transmitted;

c) instruct all aircraft on the affected frequency(ies) to verify instructions and clearances before taking action to comply;

d) if practical, instruct aircraft to change to another frequency; and

e) if possible, advise all aircraft affected when the false and deceptive instructions or clearances are no longer being transmitted.

13.10.1.4.2. Flight crews will challenge or verify with the Dhangadhi Tower any instruction or clearance issued to them which they suspect may be false or deceptive.

13.10.1.4.3. When the transmission of false or deceptive instructions and clearances is detected, DHCAO will take all necessary action to have the transmitter located and the transmission terminated.

13.11. OTHER ATC CONTINGENCY PROCEDURES

13.11.1. Emergency Separation

13.11.1.1. If, during an emergency situation, it is not possible to ensure that the applicable horizontal separation can be maintained, emergency separation of half the applicable vertical separation minimum may be used, i.e. 150 m (500 ft) between aircraft in airspace where a vertical separation minimum of 300 m (1 000 ft) is applied, and 300 m (1 000 ft) between aircraft in airspace where a 600 m (2 000 ft) vertical separation minimum is applied.

13.11.1.2. When emergency separation is applied the flight crews concerned will be advised that emergency separation is being applied and informed of the actual minimum used. Additionally, all flight crews concerned will be provided with essential traffic information.

13.11.2. Procedures in regard to Aircraft equipped with Airborne Collision Avoidance System (ACAS)

13.11.2.1. The procedures to be applied for the provision of air traffic services to aircraft equipped with ACAS will be identical to those applicable to non-ACAS equipped aircraft. In particular, the prevention of collisions, the establishment of appropriate separation and the information which might be provided in relation to conflicting traffic and to possible avoiding action will conform to the normal ATS procedures and will exclude consideration of aircraft capabilities dependent on ACAS equipment.

13.11.2.2. When a pilot reports an ACAS resolution advisory (RA), the controller will not attempt to modify the aircraft flight path until the pilot reports “Clear of Conflict”.

13.11.2.3. Once an aircraft departs from its ATC clearance or instruction in compliance with an RA, or a pilot reports an RA, the controller ceases to be responsible for providing separation between that aircraft and any other aircraft affected as a direct consequence of the maneuver induced by the RA. The controller will resume responsibility for providing separation for all the affected aircraft when:

a) the controller acknowledges a report from the flight crew that the aircraft has resumed the current clearance; or
b) the controller acknowledges a report from the flight crew that the aircraft is resuming the current clearance and issues an alternative clearance which is acknowledged by the flight crew.

Note.1— Guidance on training of air traffic controllers in the application of ACAS events is contained in the Airborne Collision Avoidance System (ACAS) Manual (Doc 9863).

13.11.2.4. ACAS can have a significant effect on ATS. Therefore, the performance of ACAS in the ATS environment will be monitored.

13.11.2.5. Following a significant ACAS event, pilots and controllers will complete an air traffic incident report.

Note 1.— The ACAS capability of an aircraft may not be known to air traffic controllers.

Note 2.— Operating procedures for use of ACAS are contained in PANS-OPS (Doc 8168), Volume I, Part III, Section 3, Chapter 3.

13.11.3. **Change of radiotelephony call sign for aircraft**

13.11.3.1. Dhangadhi Tower may instruct an aircraft to change its type of RTF call sign, in the interests of safety, when similarity between two or more aircraft RTF call signs are such that confusion is likely to occur.

13.11.3.2. Any such change to the type of call sign will be temporary and will be applicable only within the airspace(s) where the confusion is likely to occur.

13.11.3.3. To avoid confusion, the Dhangadhi Tower will, if appropriate, identify the aircraft which will be instructed to change its call sign by referring to its position and/or level.

13.11.3.4. When Dhangadhi Tower changes the type of call sign of an aircraft, Dhangadhi Tower will ensure that the aircraft reverts to the call sign indicated by the flight plan when the aircraft is transferred to another ATC unit, except when the call sign change has been coordinated between the two ATC units concerned.

13.11.3.5. The appropriate Dhangadhi Tower will advise the aircraft concerned when it is to revert to the call sign indicated by the flight plan.

13.11.4. **ATS Contingency Plan**

13.11.4.1. Dhangadhi Tower willl develop a contingency plan for Dhangadhi CAO that will describe in detail the actions that the operational staffs have to follow to maintain safety in the event of the failure or non-availability of facilities or equipment which affects the provision of ATS.

13.11.4.2. The plan will also cover procedures for the safe and orderly transition back to full service provision.

13.11.4.3. The plan so developed will include the contingency procedures that address the at least those things as mentioned in chapter 15, article 15.8.3 of MATS, Nepal.

13.12. Disable Aircraft Removable Plan (DARP)

13.12.1. Aircraft may become immobilized on an airport for a variety of reasons ranging from incidents, such as burst tire or an aircraft running off a runway or taxiway and aircraft bogged down, landing gear collapsed or damaged to major accident.

13.12.2. Any aircraft that is unable to move under its own power or through the normal use of an appropriate tow tractor and tow bar is considered to be a disabled aircraft.

13.12.3. The registered owner or aircraft operator will always retain complete responsibility for the removal of the disabled aircraft. The airport authority may or may not possess the knowledge or experience required to safely recover the aircraft .All airline operators at Dhangadhi Airport are expected to have aircraft recovery plans.

13.12.4. In any event, if the registered owner or operator cannot recover the aircraft or cannot proceed in timely manner, the DHCAO will take over the authority and act on behalf of the aircraft owner or operator. To perform this task, DHCAO will appoint coordinator to coordinate the aircraft recovery operation and ensure that the disabled aircraft is removed in a timely and efficient manner.

13.12.5. All expenses incurred for the removal of disable aircraft shall be borne by concerned aircraft operator, and DHCAO or any other agency involved on during the removal will have no liability for any damaged caused . Concerned aircraft operator shall bear all responsibilities of any damaged caused.

13.12.6. Dhangadhi Airport DARP will detail at least the following:

a) Duties and responsibilities of all involve in removal of disable aircraft; such as; Airport chief, Aerodrome Control Tower, Airline Operator, RFF personnel, Security Police/Army, DHCAO Admin etc..)
b) Procedure for removal of aircraft
c) Equipment for removal of aircraft

13.12.7. It is the responsibility of schedule aircraft operator to have their own DARP or common DARP of operators having same category of aircraft operating in Dhangadhi . However, DHCAO will prepare its own Procedure for Removal of Disable aircraft and will submit to CAAN for its approval from DGCA.

13.12.8. Among the duties and responsibilities of all involved , the duties and responsibilities of Dhangadhi Aerodrome Controller will be as follows:

- Notify the RFFS with the following information and advise for remain standby.
  - Call sign of aircraft
  - Type of aircraft
  - Operator of aircraft
  - Location
  - POB if available,
  - FOB if available
- Notify the Airport Chief /ATS Section Chief with above detail.

- Inform all aircraft all arrival aircraft.
- Close all arrivals and departures until the further instructed by Airport Chief or ATS Chief in absence of Airport Chief.
- Determine estimated time of arrival (ETA) of all aircraft requiring use of the closed runway.
- Determine latest time for affected aircraft to divert.
- Inform to aircraft operator
- Issue NOTAM if necessary with the approval from Airport Manager.

13.12.9. The Aircraft Owner, defined as the holder of the certificate of registration, is responsible for the aircraft removal and disposal of fuel and other hazardous materials that have been spilt as a result of the incident/accident

13.12.10. Prior approval for aircraft removal may be required from either Flight Safety Standard Department (FSSD), CAAN and/or from the Airport Chief or accidents of a more serious nature that require on-scene investigations.

13.12.11. For minor incidents, the Airport Chief is responsible for controlling and coordinating the response for removal of a disabled aircraft. This may require liaison with the airline or aircraft operator and the Aviation Safety Department of CAAN and/or Airport Security Police (if involved) to obtain a clearance to remove the aircraft.

13.12.12. DHCAO will mark the unserviceable portions of the maneuvering area to provide for safe aircraft operation on the remaining usable areas.

13.13. FAILURE OR IRREGULARITY OF SYSTEMS AND EQUIPMENT

13.13.1. Dhangadhi tower will have provision to monitor the current operational status of radio navigation services and visual aids essential for takeoff, departure, approach and landing procedures within its area of responsibility and those radio navigation services and visual aids essential for such movement.

13.13.2. Dhangadhi tower will immediately report in accordance with local instructions any failure or irregularity of operation in any equipment, light or other device established at an aerodrome for the guidance of aerodrome traffic and flight crews or required for the provision of air traffic control service**.** The maintenance of communication equipment, Navigation aid is performed by in coordination with Communication and Navigation Aid Department and lighting and mechanical system by Electro Mechanical Department.

CHAPTER 14

MISCELLANEOUS PROCEDURES

14.1. RESPONSIBILITY IN REGARD TO MILITARY TRAFFIC

14.1.1. It is recognized that some military aeronautical operations necessitate non-compliance with certain air traffic procedures. In order to ensure the safety of flight operations the appropriate military authorities will be asked, whenever practicable, to notify the proper aerodrome control tower prior to undertaking such maneuvers.

14.1.2. A reduction of separation minima required by military necessity or other extraordinary circumstances will only be accepted by aerodrome control tower when a specific request in some recorded form has been obtained from the authority having jurisdiction over the aircraft concerned and the lower minima then to be observed will apply only between those aircraft. Some recorded form of instruction fully covering this reduction of separation minima will be issued by the aerodrome control tower.

14.2. RESPONSIBILITY IN REGARD TO UNMANNED FREE BALLOONS

14.2.1. On receipt of notification of the intended flight of a medium or heavy unmanned free balloon, the Dhangadhi aerodrome control tower will arrange for the information to be disseminated to all concerned. The information will include as mentioned in chapter 16, article 16.2 0f MATS, Nepal-2014 as appropriate.

14.3. NOTIFICATION OF SUSPECTED COMMUNICABLE DISEASES, OR OTHER PUBLIC HEALTH RISK, ON BOARD AN AIRCRAFT

14.3.1. The flight crew of an en-route aircraft will, upon identifying a suspected case(s) of communicable disease, or other public health risk, on board the aircraft, promptly notify the Dhangadhi aerodrome control tower with which the pilot is communicating, the information are as listed as in chapter 16, article 16.6.1 of MATS, Nepal

14.3.2. The Dhangadhi tower, upon receipt of information from a pilot regarding suspected case(s) of communicable disease, or other public health risk, on board the aircraft, will forward a message as soon as possible to the ATS unit serving the destination/departure aerodrome.

14.3.3. When a report of a suspected case(s) of communicable disease, or other public health risk, on board an aircraft is landing in Dhangadhi Airport, the Dhangadhi tower will notify the Airport Manager/ Air Navigation Service Directorate, CAAN and TIACAO and the aircraft operator or its designated representative.

Note .— The information to be provided to the departure aerodrome will prevent the potential spread of communicable disease, or other public health risk, through other aircraft departing from the same aerodrome.

14.4. DOCUMENT AND RECORD

14.4.1. **Documents**

A document control system covers the authorization, standardization, publication, distribution and amendment of all documentation issued by the CAAN, or required by the CAAN for the provision of air traffic services.

14.4.2. **Records:**

14.4.2.1. A system for records covers identification, collection, indexing, storage, security, maintenance, access and disposal of records necessary for the provision of ATS.

14.4.2.2. Records systems must provide an accurate chronicle of ATS activities for the purpose of reconstruction of events for air safety investigation, and for system safe analysis.

14.4.3. **Records to be kept**

14.4.3.1. Automatic recordings.

The following items used for the provision of air traffic services will be recorded automatically and retained for the period shown:

a) direct pilot-controller two-way radiotelephony—30 days;
b) direct-speech between air traffic services units—30 days;

14.4.3.2. Document records.

The following items will be kept for a minimum of 90 days

a) ATS messages, including flight plans;
b) flight progress strips or documents of a similar nature used for the recording of flight data and the issue of clearances, instructions and directions;
c) log books;

14.4.3.3. Personnel Licensing Records.

14.4.3.3.1. Records of ATS personnel licensing and competency certification and rating under ATSOM will be kept for a minimum of 5 years, including after an employee ceases to be employed by the CAAN. This includes details of:

a) training;
b) renewal and currency of ratings, endorsements and qualifications; and
c) Other proficiencies required by the CAAN to be demonstrated.

14.4.4. **Record retention for investigation.**

14.4.4.1. Where requisitioned, by an appropriate authority, for the purposes of investigation, records will be isolated and kept in a secure place until their release by that authority.

14.4.5. **Procedure for Maintaining Operational Log Books**

14.4.5.1. All significant occurrences and actions relating to operations, facilities, equipment and staff at Dhangadhi Tower will be recorded on the Log book except when forms such as fault reports or Air Safety Incident Reports must also be completed; duplication of information will be avoided.

14.4.5.2. A working record or Log Book entry will not be inserted between earlier entries. In the event of an out of sequence entry being necessary, it will be entered as soon as possible, and annotated that it is out of sequence with an explanatory note as to why it is out of sequence.

14.4.5.3. All Log Book entries will be recorded against the times of the occurrence, or time of the Log Book entry.

14.4.5.4. An aerodrome surface inspection log will be maintained and entries will be made after the inspection of movement area has been carried out. Arrangement will be made to ensure that information on un-serviceability recorded is forwarded as soon as possible to the Airport Chief and CAAN HO.

14.4.5.5. An aerodrome lighting inspection log, other facility status of navigational aids including Fire vehicle, AMHS, Bird scaring device, aerodrome conditions etc will be maintained in the ATC watch log for distribution of information on un- serviceability recorded. Arrangement will be made to ensure that information on un-serviceability recorded is forwarded as soon as possible to the Airport Chief and CAAN HO.

14.4.5.6. The ATC watch log will be maintained at all times. Entries will be made in ink and no erasures will be made.

14.4.5.7. In no circumstances will pages be removed from the log book.

14.4.5.8. Entries will be made in chronological order and as far as possible concurrently with the incident being recorded.

14.4.5.9. When during emergencies or rush periods it is impossible to make detailed entries at the time of the occurrence, rough notes will be kept with exact times and a detailed entry made as soon as possible. The rough notes will be attached to the log book for future reference, will it appear at all likely that they may be required.

14.4.5.10. Entries will be in sufficient detail to enable anyone investigating an incident to have a complete understanding of all actions taken during the watch period.

14.4.5.11. Items to be logged will include changes in the serviceability of radio aids, other essential aerodrome information, reports of incorrect procedures by aircraft, technical failures in aircraft, runway changes, visits of VIPs, clock synchronization checks and any unusual occurrence.

Note: The accident investigation authority (AIA) has full authority to impound any ATC log book if they consider that its contents throw any light on a particular accident. When such action is taken the log book will be withdrawn as soon as possible after the request is made and handed over the AIA. In this circumstance a replacement log book will be opened.

14.4.5.12. **Voice And Data Recording**

14.4.5.12.1. Where appropriate voice recording facilities are available, details of opening and closing watch, or the identification of staff assuming responsibility for a position shall be recorded in the logbook entry. The procedures used must be sufficient to readily establish, for the purposes of investigation, the status of the position

(active/inactive) and the person responsible for any active position, at any given time.

14.4.5.12.2. When an automatic voice recording facility fails, a manual record of communications must be maintained, to the possible extent.

14.4.5.12.3. Deletions from communications records are not permitted. All entries will be written in non-erasable ink, and will be legible.

14.4.5.12.4. Non-active forms or strips on which an error is noted may be replaced. Active forms or strips, fault reports, records and Log Books will be changed, or errors corrected by:

a) drawing a line through the incorrect data and writing the correct data adjacent thereto; or
b) Cancelling the old and rewriting the record, retaining both the old and the new for later reference purposes.

14.4.6. **Minimum information to be recorded.**

The minimum information to be recorded is shown in the following table.

Occasion	***Information***
At the commencement of each day's operation	• UTC date and time; • Where required, identification of the unit and/or the operating position.
On assuming responsibility for a position	• The UTC date and time of assuming responsibility for a position and the signature of the officer commencing duty(see also voice recordings);
During operation of the unit	• Air Safety Incidents, including accidents and breaches of the Regulations such as noncompliance with ATC instructions; [Note: This is in addition to the completion of incident Reporting actions.] • Actions taken in relation to any SAR activity including distress communications; • General notes concerning essential aerodrome information, such as the results of aerodrome inspections, closure of sections of the manoeuvring area caused by works or natural phenomena, etc.; • Times of aerodrome closure and reopening, with reasons for the closure; • Change in status of facilities, service or procedure including communication difficulties and tests; • Status of navigation aids.

14.5. OCCURRENCE REPORTING LOG

14.5.1. Introduction

Any information on incident, event or occurrence relating to the air navigation services (ATS incidents , air traffic incident received from pilot, bird strike) will be maintained a log and reported to Airport Chief and to Civil Aviation Safety Regulation Directorate and Air Navigation Directorate of Civil Aviation Authority of Nepal without delay *(Refer:* Appendix 4, 5 and 6 of MATS,Nepal-2014*)*

14.5.2. Incident Reporting

14.5.2.1. An incident is an occurrence which might result in an accident.

14.5.2.2. In the case of minor incidents involving installations or personnel on the aerodrome, or aircraft under Dhangadhi Control Tower, the Airport Chief will deal with the matter locally.

14.5.2.3. Those incidents which cannot be dealt with locally will be reported to CAAN.

14.5.2.4. Controller will use the form described in Appendix 5 of MATS, Nepal-2014 for the submission of such report.

14.5.3. Air- miss Reporting

14.5.3.1. An "AIRMISS" report may be filed by a pilot when he considers that his aircraft has been endangered by the proximity of another aircraft during flight, to such an extent that an actual or potential risk of collision existed. *(Refer to Appendix 4* of MATS, Nepal-2014 *for the format of the form)*

14.5.3.2. The majority of AIRMISS Reports will be made by radio or by telephone shortly after the pilot has landed, which be confirmed in due time.

14.5.3.3. Any information on incident, event or occurrence relating to the air navigation services that affects or may affect the safety of air navigation will be reported by Aerodrome Control Tower to Airport Chief which in turn would be reported to Civil Aviation Safety Regulation Directorate without delay through Air Navigation Directorate of Civil Aviation Authority of Nepal.

14.5.3.4. Such reports will be made by quickest means available such as telephone, cell phone, email, fax or a format may be used for the reporting purpose in accordance with Appendix 5 of MATS, Nepal-2014.

14.5.3.5. The pilot will make his initial report to Control tower as soon as after the incident has occurred.

14.5.3.6. If the initial report is made by radio or telephone, the pilot will confirm by submitting in written within 7 days of the incident to DHCAO which will be forwarded to CAAN Head Office.

14.6. PROCEDURE OF BIRD STRIKE/WILD ANIMAL STRIKE

Bird strike to aircraft, as a potential source of danger, is seen in its most serious form. ATC will take the best known methods to eliminate or reduce bird strike hazards. It is difficult to drive away all the birds at all times. Nevertheless, every reasonable effort will be taken to reduce the bird hazard. During bird activity and movement of wild animals, following procedure is applicable:

a) Operate bird scaring device (if available) from the tower,

b) If bird or animal do not scared and still remain on the active runway, inform to fire watch office or office service staff (Karyalaya Sahayogi) through intercom number/UHF Set or other available device. Provide location of bird activity/wild animal movement.

c) Sometimes additional personnel may require for the driving bird/animal. In such case concerned airline personnel/airport police are requested to support the office staffs.

Note: It is the responsibility of PIC to land in an aerodrome where bird activity/animal movement has been informed to PIC. Bird Strike/Wild Animal Strike reporting form as prescribed in Appendix 6 of MATS, Nepal-2014.

14.7. ATS FACILITIES AND EQUIPMENT

14.7.1. Following guidelines will provide to Dhangadhi CAO for the design, sitting, construction, equipping and maintenance of ATC facilities where applicable.

a) Dhangadhi tower will always have documents as mentioned in Para 14.4.3 and other needful log-books.
b) The Dhangadhi control tower will have adequate visibility to all the maneuvering area and airspace which are under the controllers' area of responsibility with unobstructed line of sight from the control tower eye level to the maneuvering area of the aerodrome and sufficient visual resolution of all aerodrome movement areas for which has a responsibility for the bay allocation and orderly flow of traffic.
c) The Dhangadhi control tower will have an appropriate communication facility as mentioned in article 16.8.23 of MATS, Nepal as appropriate.
d) The Dhangadhi control tower will have Meteorological, Automatic Message Handling System (AMHS), Operational data and time displays system as mentioned in article 16.8.2.4 of MATS, Nepal
e) The Dhangadhi control tower has appropriate monitors, and controls for aerodrome lighting equipment for which the control tower has responsibility.
f) The Dhangadhi tower has a means to readily recognize the failure of any terrestrial navigation aid being used for the control of aircraft.

14.8. SECTOR VISIBILITY PROCEDURES

a) Because of the prescribed ground visibility of 5 km, most of the VFR flights are likely to be delayed or cancelled due fog, mist, haze, smoke and dust. To minimize this situation, the concept of sector visibility has been introduced.

b) The term sector visibility is understood by a controller on duty, to be the slant visibility within the limits of the airspace above the ground encompassing the climb-out/ approach path of an aircraft.

c) Aircraft will be cleared for take-off or to land if the duty controller feels that the climb out/ approach path along the relevant sector is clear although the prevailing visibility is less 5 km.

d) Determination of sector visibility will be based on personnel observation of the duty controller.

Note: Sector Visibility Procedures will be accomplished in Dhangadhi Aerodrome as accordance with procedures mentioned in Appendix F

14.9. PROVISIONS OF MAPS AND CHARTS

Maps and charts as mentioned in appendix I of this ATSOM will be as per the Standards as mentioned in CAR-4 (Aeronautical Charts).

14.10. PROVISIONS FOR AIRPORT OPERATION

14.10.1. The Air Traffic Service to be provided under the jurisdiction of Dhangadhi aerodrome control tower will be as per the standards specified in the Civil Aviation Requirements.

14.10.2. The responsibility of ensuring the service as per the standard pursuant to 14.15.5 will be that of the Airport Chief.

14.10.3. All pilots, during flight, will follow the instruction of the Air Traffic Controller.

14.10.4. If any situation arises for not being able to comply with the instruction given by the Air Traffic Controller pursuant to 14.15.2 and 14.15.3 in a view of the flight safety, the pilot will inform the same to the Air Traffic Controller.

14.10.5. Any information on incident, event or occurrence relating to the air navigation services that affects or may affect the safety of air navigation will be reported by Aerodrome Control Tower to Airport Chief which in turn would be reported to Civil Aviation Safety Regulation Directorate without delay through Air Navigation Directorate of Civil Aviation Authority of Nepal. Such reports may be made available through telephone, cell phone, email in initial report however the report will be submitted through the prescribed format *(refer :* Appendix 4, 5 and 6 of MATS,Nepal-2014*)* .

14.10.6. The Airport Chief will have the responsibility to install, operate and maintain the communication and navigation equipment to support smooth operation of Air Traffic

Services. However, in case of unavailability of resource he will have the only option to coordinate with Air Navigation Service Directorate, CAAN and its concerned Departments.

14.10.7. Access to the Aerodrome Maneuvering Area

i. **The Chief of the Airport/Airport Chief** has overall responsibility for ensuring that procedures are established and resources are provided for aviation security and for the control of airside access to the airport and is responsible for developing an Airport Security Program.

ii. **Airport security personnel** has the responsibility to check restricted area pass and other valid document and make search of person so that no unauthorized person can enter the airside area of the airport.

iii. **The Dhangadhi Tower** has the responsibility for control of vehicles on the maneuvering area. No person or vehicle may enter this area without ATC approval. Any person entering the maneuvering area will also hold, or be escorted by a person who holds, a valid airport pass having access.

14.11. PROCEDURES FOR TAKING OVER AND HANDING OVER WATCH

14.11.1. Taking Over Watch

14.11.1.1. Prior to taking over watch ATCOs will ensure that they are fully conversant with the latest promulgated orders, instructions, notices and signals with particular reference where appropriate to the serviceability of the aerodrome and its facilities.

14.11.1.2. Obtain full information and briefing regarding the weather position and tendencies for the period of their watch whenever necessary as justified by the general weather condition.

14.11.1.3. Ensure that they have a full understanding of the air traffic situation prevailing with particular reference to separation standards.

14.11.1.4. Familiarize themselves with the serviceability of all equipment under their charge and likely to be used during the period of their watch.

14.11.1.5. Ensure that they are acquainted with any special movements or maneuvers likely to occur during their watch.

14.11.1.6. Having completed the above procedure, ATCOs will sign the ATC watch log as having taken over watch. This signature will imply that items 1 to 5 inclusive have been complied with and that the ATCO taking over watch has assumed all the defined responsibilities of the ATCO handing over watch, including the safe custody of equipment and any secret or confidential document within the place of duty.

14.11.2. Handing Over Watch

14.11.2.1. ATCOs handing over watch will ensure that they provide their successors with the fullest possible information regarding the current situation including any items of

specific interest or urgency which have influenced the development of the situation and which may have a bearing on the progress of the ensuing watch.

14.11.2.2. Will any situation have developed during the watch such as action in the event of distress, emergency or accident whereby in the interests of safety or efficiency, it is considered beneficial for the duty ATCO to complete such actions and subsequent reports and records rather than to transfer the responsibility for completion to another officer. Notwithstanding the fact that watches roster defines the appointed time to hand over, the ATCO handing over watch will remain on until such time as this responsibility has been discharged.

14.11.2.3. When the ATCO taking over is fully conversant with the air traffic situation and is prepared to assume full responsibility for the watch the ATCO handing over will sign the ATC watch log as having handed over watch.

14.12. CONTROL ROOM DISCIPLINE

14.12.1. Visitors

No unauthorized person will be allowed access to an ATS Operational Room. Allowing such visitors to the control Room is the explicit authority of the ATS Chief/Supervisor and before bringing in authorized visitors a check will be made with the watch ATS Chief/Supervisor or the Duty ATCO as to whether the traffic situation permits such a visit. At no time will visitors be allowed to interfere with the smooth running of the watch.

14.12.2. Cleanliness

The Duty ATCO will ensure that the ATS Unit Room is kept in a clean and tidy condition at all times and all equipments will be kept in serviceable condition and stowed away when not in use.

14.12.3. Supervision and suggestion

14.12.3.1. The watch supervisor or the ATCO-in-charge will be responsible for the supervision of all staff and the maintaining good condition.

14.12.3.2. ATCOs are encouraged to put suggestions for improving the general operating efficiency of the services, such suggestions will be put forward through the normal channels for onward transmission to CAAN as necessary.

14.12.4. Duty Roster

14.12.4.1. A watch keeping roster will be prepared by the ATC-in-Charge of the Dhangadhi Tower not later than the 20th day of each month and shall show the hours of watch-keeping and hours of duty required of individuals ATCO throughout the following month.

14.12.4.2. ATCOs will adhere to the time and periods of watch-keeping duties details in this roster and will arrive at their work place in time to carry out the procedures detailed in para 14.11 (procedure for taking over handling over watch)

14.12.4.3. Duty Roster shall be displayed at the Dhangadhi Tower.

14.12.4.4. ATCOs will adhere to the time and periods of watch-keeping duties details in this roster and will arrive at their place of duty in time to carry out the procedures detailed under 'procedures for taking over handing over watch.'

14.12.4.5. No alterations are to be made to the watch rosters without reference to, and approval by the ATS Chief.

14.12.5. **Local Notices to Staff**

Local notices to staff will be displayed on a board placed preferable in the control tower hung specifically for this purpose.

14.13. RELATIONS WITH PRESS AND GENERAL PUBLIC

14.13.1. Discussions on matters to ATC policy and the operation of control will be avoided with persons other than officials of the ATS services.

14.13.2. Reports on accidents, breaches of regulations, reprimands to pilots, or other personnel, etc. will be treated as confidential matters and will not be discussed in public or passed to the media.

14.13.3. Any request for information by representatives of the press will be referred to Airport Manager.

14.13.4. Dhangadhi Control towers will not normally conduct correspondence direct with operating companies or individuals, except when and where authority to do so has been expressly given by Airport Chief. Complaints received regarding specific incidents will be submitted to DHCAO after acknowledgement has been made to the originator.

14.13.5. The movement of VVIPs and other special Flights and their position reports will be treated as confidential. On request from the public such information will not be given out except to the appropriate bodies.

14.13.6. Procedures for Opening and Closing of ATC Watch are mentioned in Appendix G

14.14. PROCEDURE FOR MOVEMENT AREA INSPECTION

14.14.1. Every morning, before declaring airport status, Movement Area will be inspected thoroughly as below:

a) An inspection team will comprise personnel as directed by airport chief, DHCAO.
b) the inspection team may be from Rescue and Fighting or electro-mechanical section or technical section or jointly and will call control tower to get permission to enter Runway as per the availability.
Phraseology:
"**INSPECTION TEAM:** TOWER, THIS IS AERODROME VEHICLE/ FIRE VEHICLE, REQUEST PERMISSION TO ENTER RUNWAY FOR INSPECTION."
DHANGADHI TWR: PERMISSION GRANTED REPORT COMPLETION OF INSPECTION.

Example: "TWR INSPECTION COMPLETED, ALL LIGHTS AND MOVEMENT AREA NORMAL EXCEPT ….. TAXIWAY A LIGTH AND …… RUNWAY LIGHT U/S OR BROKEN."

c) Controller will switch on/off all airfields lighting system which has control from tower.

14.15. DUTIES AND RESPONSIBILITIES

14.15.1. Before proceeding with the actual work of ATC it is necessary to know the administrative procedures associated with the provision of ATC. When prior instructions have not been issued, the administrative rules included in this manual are applicable.

14.15.2. **Aerodrome/Approach Controller**

Aerodrome/Approach Controller will perform traffic separation and coordination tasks in accordance with the ATSOM and letters of agreement and instructions and in particular;

i) Ensure the safe, orderly and expeditious flow of air traffic in its area of jurisdiction;

ii) Maintain separation standards in respect of all aircraft operations;

iii) Integrate arriving aircraft into an orderly landing sequence;

iv) Exercise judgment in the provision of landing and take-off clearances to aircraft.

v) Exercise control of aircraft making missed approach.

vi) Close or reopen a runway, the airport or any specific approach landing area.

vii) Determine the use of sector weather observations to permit aircraft operations as applicable.

viii) Initiate search and rescue or airport emergency action in accordance with AEP;

ix) Maintain coordination with coordinator.

14.15.3. **Tower Coordination Position**

Following are the duties and responsibilities of Tower Coordination Position

i. Coordinate airways clearances for departing aircraft.

ii. Coordinate the activities of the aerodrome control unit with technical maintenance authorities, emergency services and department officers.

iii. Initiate search and rescue or airport emergency action in accordance with prescribed procedures.

iv. Coordinate with appropriate Control towers for exchange of operational data.

v. Coordinate in between Nepaljung TWR, other domestic aerodromes and or Kathmandu ACC controllers.

vi. Handle HF, AMHS, telephone, portable VHF/UHF sets; coordinate with local units (RFF, MET, Admin, Terminal, Airlines), check and operate aeronautical lights, check functionality of NAVAID, assist in making strip, maintain movement log book.

14.15.4. **On Job Training Instructor (OJTI)**

The OJTI is responsible for the quality of training undertaken at aerodrome control tower, for the initial rating of controllers and for ensuring that the provision of Air Traffic Control is delivered in a safe, efficient and standard manner. The detail duties are listed below:

i. To prepare and implement detail training plan for each trainee air traffic controller as mention in MATS.

ii. To train and supervise student air traffic controller or trainee to the position for which they are to be rated.

iii. Conduct training on the basis of syllabus set out in Unit Training Plan.

iv. To ensure that trainee air traffic controllers are competent in the use of new standards, procedures, techniques, facilities and equipment identified as essential to task performance

v. Make frequent inspection of ATC unit to check the performance of the trainees on OJT

vi. Maintain a register of Trainee's roster and period of duty performed on job training for the position

vii. To identify any deficiencies in knowledge or skill and recommending remedial training.

viii. To prepare ATC OJT report and recommend the Licensing/ rating Division, ANSSSD, the trainee air traffic controller as being at an appropriate level of competence where he/she will be successful at a rating or validation assessment

ix. To supervise air traffic controllers who have had their rating(s) suspended; and

x. To review, monitor and propose changes to the training

14.15.5. **Airport Chief**

The main duties and responsibilities for Airport Chief are as follows :

i. To ensure ATC Services are provided in accordance with ATSOM.

ii. To inspect all equipment and facilities within control tower and to ensure normal operation.

iii. To assign all ATCO in a proper position and to monitor proper work load.

iv. To ensure operating methods and procedures are maintained in standard way by keeping flight progress strips up to date and postings are complete & correct.

v. All log books are kept up to date.

vi. The consoles are kept neat and uncluttered.

vii. To ensure professional manner is maintained by the staff and to inform shift in charge in case of any staff's absence.

viii. To maintain good coordination with other units for normal operation and to report Airport Chief in case of difficulty.

ix. Action to be taken to initiate any necessary NOTAMS.

x. Sufficient staff is manned in the all ATC position as per the published roster. It is the duty of the Supervisor to notify the ATS Chief of any absences and to request extra or replacement staff in the event of sickness, emergency situations, etc;

xi. Initiate action for search and rescue in accordance with prescribed procedure if required;

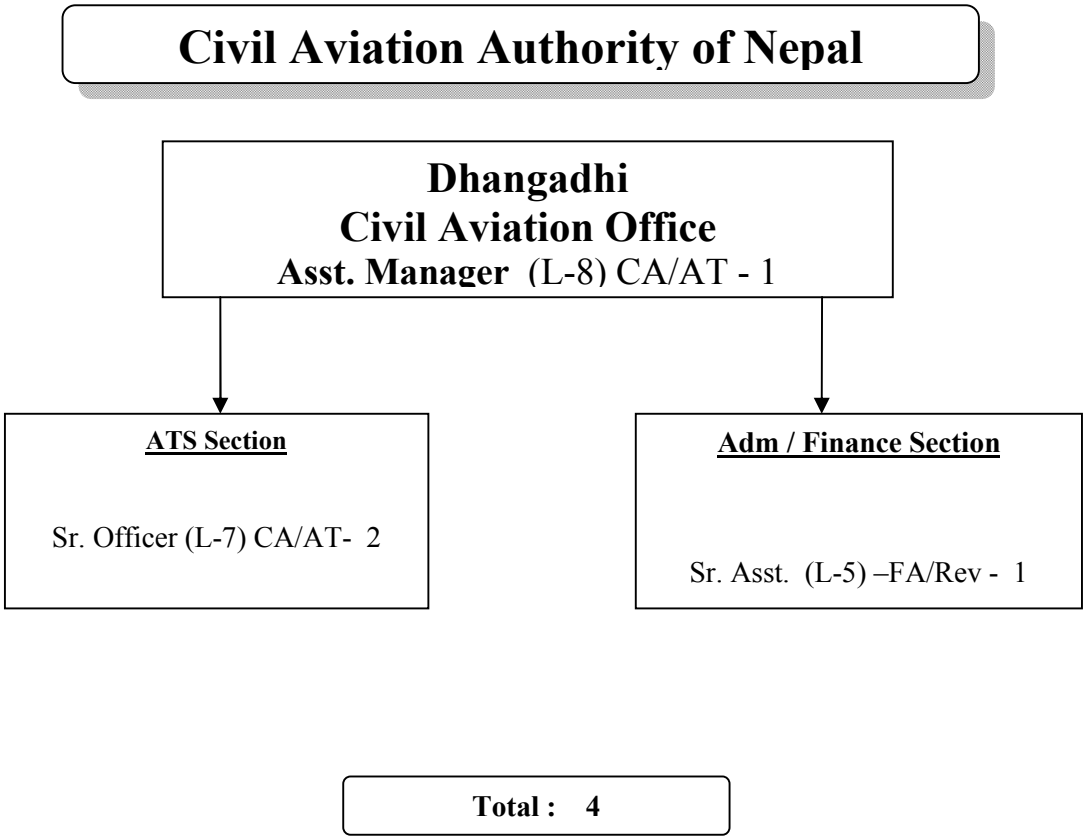
xii. Co-ordinate and cooperate with the concerned units as and when required for the efficient and smooth operation;

xiii. Responsible for resolving any conflicts of opinion relating to aircraft safety or expedition of aircraft movement

APPENDICES

APPENDIX- A

ORGANIZATION STRUCTURE



APPENDIX B

OPERATIONAL LETTER OF AGREEMENT (LOA) BETWEEN NEPALJUNG TOWER AND DHANGADI TOWER (DH TWR).

1. General

1. 1 Purpose

The purpose of this letter of agreement is to define the agreed procedure applied between Nepalgunj Tower (NG TWR) and Dhangadi Tower (DH TWR) for the safe and efficient conduct of Air Traffic Service within their jurisdictions.

1.2 Scope

The procedure contained in this document shall be applied in the jurisdictions of NG TWR and DH TWR.

2. Air Space

Within Kathmandu FIR the air Space is classified as follows:

a) Class C - Airways, Airspace in Terminal Areas (TMA), Control zones (CTR) and Aerodrome traffic zones (ATZ).
b) Class G – Airspace other than in class C

3. Jurisdictions and Area of Responsibility for the provision of ATS.

3.1 Sectorization of VNSM

a) Kathmandu Sector

Kathmandu sector includes all Kathmandu FIR airspace to the East of 83^0E longitude from ground level to unlimited.

b) Nepalgunj Sector

Nepalgunj sector includes all Kathmandu FIR airspace to the West of 83^0E longitude from ground level to unlimited.

3.2 Jurisdictions

a) Jurisdiction of Nepalgunj Tower

Jurisdiction of NG TWR shall be the airspace within Nepalgunj sector at or below 13500ft. excluding jurisdictional airspace under AFIS aerodrome , Surkhet ATZ and Dhanghadhi CTR.

b) Jurisdiction of DH TWR

Jurisdiction of DH TWR shall be the airspace within Dhanghadhi CTR .

3.3 Area of Responsibility of ATS

a) NG TWR shall be responsible for providing Air Traffic Services to all traffic within its jurisdiction.
b) DH TWR is responsible for providing Air Traffic Services within its jurisdiction.

4. Altimeter setting procedure

a) All aircraft operating in the area of Jurisdiction of NG TWR shall use NG QNH supplied by NG TWR.
b) All aircraft operating within DH control zone shall use DH QNH.
c) Altimeter setting from local QNH to 1013.2 hpa and vice versa during climb and descend shall be made in the transition layer.
d) Aircraft shall change NG QNH to DH QNH supplied by DH TWR while entering DH control zone and change DH QNH to NG QNH supplied by NG TWR while leaving DH control zone.

5. Separation

Separation shall be applied as per the ATS Operation Manual, Manual Of Standards Air Traffic Services Nepal and Procedures for Air Navigation Services/Air Traffic Management (doc 4444)

6 . Transfer of control and co-ordination procedure

6.1 Transfer of control point

a) For traffic originating from NG to DH

NG TWR shall transfer the control of traffic to DH TWR at **25NM to DH or passing 10500ft** whichever is later or at mutually agreed point, level or time.

Note: If there is single VFR traffic in operation towards Dhanghadhi, NG TWR may transfer the traffic to DH TWR from North abeam NG TWR (R360NGJ VOR).

b) For traffic originating from DH – NG or DH-KT track

DH TWR shall transfer the control of traffic to NG TWR at **25NM from DH or passing 9500ft** whichever is earlier or at mutually agreed point, level or time.

c) For traffic originating from DH to other than a) and b) and vice-versa

DH TWR shall transfer the traffic to NG TWR while leaving Dhanghadhi CTR and NG TWR shall transfer the traffic to DH TWR while entering Dhanghadhi CTR.

Prior coordination shall be made between NG TWR and DH TWR.

6.2 Co-ordination procedure

a) Transferring unit shall supply all necessary information to accepting unit such as:

- A/C call sign
- Type of aircraft
- Departure point
- Route
- Level of A/C and changes of level thereto
- ETA
- Destination
- Any other pertinent information.

b) DH TWR shall coordinate with NG TWR at the earliest after the departure of A/c but not later than 3 minutes of the departure time of the aircraft.

c) DH TWR shall get prior level clearance from NG TWR for outbound traffic requesting level.

d) NG TWR shall immediately confirm and notify any specific requirements or restrictions for flights upon receipt of co-ordination notice.

e) All the coordination shall be accomplished by the most suitable and/or quickest means of communication.

f) in case of SUKET 1A departure, prior coordination with NG TWR should be made by DH TWR before departure.

g) If weather condition is deteriorating in Dhanghadhi, DH TWR shall immediately inform NG TWR specially in case of inbound traffic approaching via STAR (TULSI 1 C and SUKET 1 R)

7. Communication system for co-ordination

The means of communication shall be in the following order:

a) HF/RT
b) AMHS
c) ISDN dedicated telephone.

8. Revisions

8.1 This agreement shall be subject to revision whenever

a) An amendment to applicable Civil Aviation requirements(CAR) manuals and operating procedures or instructions which might affect the procedures contained in this agreement occurs,

b) New communication facilities or Air Traffic services system which might affect these procedures are commissioned,

c) For any other reasons, which might make it advisable to change this agreement, the interested ATS unit shall propose the pertinent revision through Air Traffic management department CAAN, Head office. The revision requires the mutual written consent at the respective units. However, the chief of the concerned ATS unit may introduce by mutual agreement and for specified time of period, temporary modification to the procedures laid down in this agreement.

8.2 Incidental deviations

Instances may arise where incidental deviations from the procedures specified in this LOA may become necessary. Under these circumstances, air traffic controllers are expected to exercise their best judgment to ensure the safety and efficiency of air traffic.

9. Cancellation/Modification

Cancellation/Modification of this present LOA by mutual agreement of the respective approving authorities with the consent of CAAN Head office may take place at an time,

provided that the canceling unit declares its intention to cancel the LOA with a minimum of 30 days prior-notification before the date of cancellation is to take effect.

10. Interpretation and settlement of disputes

a) Should any doubt or diverging views arise regarding the interpretation of any provisions of the present LOA or in case of dispute regarding its application, the units shall endeavor to reach a solution acceptable to both of them.

b) Should no agreement be reached, each of the units shall refer to CAAN Head office, to which the dispute shall be submitted for settlement.

11. Validity

This letter of agreement becomes effective from 17th July 2018

Signed by

Chhabi Singh Thakulla
Chief
Dhangadhi Civil Aviation Office

Date : 11th July 2018

Signed by

Pratap Babu Tiwari
Director
Nepalgunj Civil Aviation Office.

Date : 11th July 2018

APPENDIX- C

LETTER OF AGREEMENT BETWEEN DHANGADI TOWER AND AIRLINE OPERATORS

DIRECTIVES FOR THE CO-ORDINATION BETWEEN DH TWR AND AIRLINE OPERATORS

Effective date: immediately after signature by concern Parties and getting the approval from DGCA.

1. OBJECTIVE

1.1 The objective of this Letter of Agreement between DH TWR and operators is to establish the directives for the necessary co-ordination between DH TWR and operators to ensure the provision of safe and efficient operation of aircraft.

1.2 This Letter of Agreement specifies the responsibility of DH TWR in relation to the safe orderly and expeditious flow of air traffic.

1.3 This Letter of Agreement includes the responsibilities of DH TWR and operators in relation to the mutual exchange of information for safe operation of aircraft.

1.4 The directives detailed in this document are in accordance with the Standards and Recommended Practices and Procedures of ICAO, contained in annex-11 and as well as the provisions contained in the aeronautical information publication (AIP) of Nepal.

2. REVISIONS

2.1 When for special or unforeseen reasons, a significant change in the co-ordination between the two parties involved or the services mentioned in this Letter of Agreement becomes necessary, the respective chiefs, through mutual agreement may affect temporary changes.

2.2 Permanent revisions to this Letter of Agreement may be made by the authorities who approve and sign this agreement. A complete cancellation of this Letter of Agreement may be brought into effect on condition that concerned stakeholders agree upon the same and the proposal for such an intention is passed 30 working days prior to intended effective date.

3. GENERAL

3.1 Air Traffic Services units, in carrying out their objectives, will have due regard for the requirements of the operators consequent on their obligations as specified in Annex-6, and, if so required by the operators, will make available to them or their designed representatives such information as far as practicable to enable them or their designated representatives to carry out their responsibilities.

3.2 when so requested by an operator, messages (including position reports) and met services received by air traffic services units and relating to the operation of the aircraft for which operational control services is provided by that operator will, so far as practicable, be made available to the operator or a designated representative in accordance with locally agreed procedures.

3.3 DH TWR will receive and clear the flight plans submitted by PIC or accredited flight dispatcher in person and in case the flight plan cannot be accepted, DH TWR must immediately provide reasons for not clearing the flight plans.

3.4 The objectives of ATS are to:

a) Prevent collisions between aircraft in the air or on the maneuvering area of an aerodrome;
b) Prevent collisions between aircraft on the maneuvering area and obstructions on that area;
c) Expedite and maintain an orderly flow of air traffic;
d) Provide advice and information useful for the safe and efficient conduct of flights; and
e) Notify appropriate organizations regarding aircraft in need of search and rescue aid and assist such organizations as required.

3.5 ATS comprises three services, as follows:

a) Air traffic control service;
b) Flight information service; and
c) Alerting service

3.6 The air traffic control service includes the provision of:

a) Air traffic control service for controlled flights, except for those parts of flights under the jurisdictional airspace of area control centre.
b) Aerodrome control service to that portion of controlled flights associated with the arrival of an aircraft at, or its departure from the this controlled aerodromes; and
c) Aerodrome control service for aerodrome traffic, except for those parts of flights under the jurisdictional airspace of approach control unit.

3.7 The flight information service provides advice and information useful for the safe and efficient conduct of flights.

3.8 The alerting service notifies the appropriate organizations regarding in need of search and rescue aid and assist such organizations as required.

4. RESPONSIBILITIES

4.1. General

In order to provide an efficient air traffic services and to recognize ATS units as indispensable factors in the liaison between flight operations and operators, ATS sections and operators will collaborate to ensure a prompt and efficient co-ordination.

4.2. Responsibilities of the Operators

4.2.1. The operators are responsible for submission of flight plans as published in AIP Nepal ENR 1.10 flight planning, duly signed either by the PIC or a trained flight dispatcher; otherwise DH TWR will not accept the flight plans.

4.2.2. The operators are responsible to follow ATC instructions as and when necessary.

4.2.3. The operators are responsible to adhere to directives issued by CAAN for safe operation of aircraft.

4.2.4. For transportation of pets, concerned operator will request the ATS authority for permission after it ensures that it is safe to transport the animal/s in all respects and such a request will be in written, mandatorily in the prescribed format and must be sealed and signed by the in charge. While requesting for such permission, operator will provide a letter stating that the pet/s is healthy written by a certified vet/ veterinary doctor.

4.2.5. CAAN or DH TWR will not be responsible for any consequences arising due to the transport of the pet/s. All responsibilities will be of the concerned airlines.

4.2..6. Airlines operators are required to provide name lists along with certificates of their trained flight dispatchers prior to the effective date of this LOA. DH TWR will be provided with details of newly hired or transferred or trained flight dispatchers along with proofs of them being trained dispatchers.

4.2.7. Any subsequent changes in the flight plan that has to be introduced in due course of time post submission and clearance of flight plan has to be immediately forwarded to DH TWR by concerned operator in the form of a revised flight plan.

5. ATS UNITS AND OPERATORS CO-ORDINATION MEETINGS

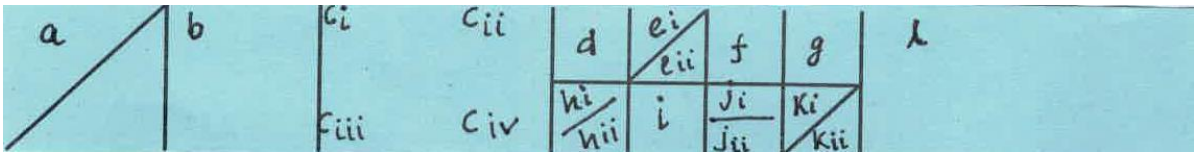
Regular and /or ad hoc co-ordination meetings between DH TWR and operators and other parties deemed appropriate by DHCAO, aimed at improving the services provided to aircrafts, will be convened as required.

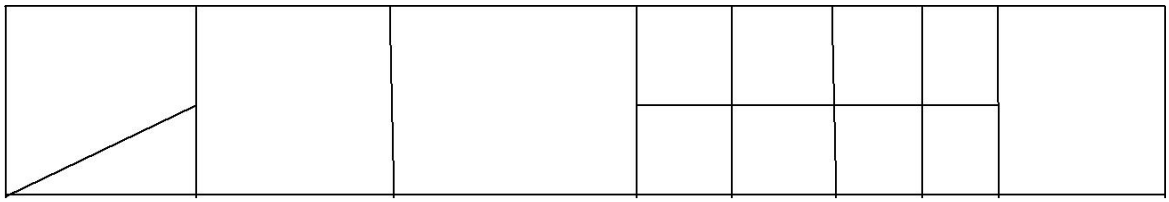
Signed By:	Signed By:
.....	.....
On behalf of Airlines Operator	Airport Chief
Station Incharge, Dhangadhi	Dhangadhi CAO
Date:	Date:
Witness:	Witness:
.....	.....
Airline Operator, Dhangadhi	

APPENDIX- D

STRIP MARKING PROCEDURE

Arrival Strip





a. Expected Time of Arrival (ETA)-

b. Altitude/Flight Level

c. Call Sign i. Name of Departure Aerodrome ii. Type of Aircraft iii. Flight Rules iv. Indicated Air Speed

d. Runway in Use

e. i. Time at which aircraft establishes hold ii. Time at which aircraft leaves hold

f. Time at which approach clearance is issued

g. Previous Fix

h. i. Place of first contact ii. Time of first contact

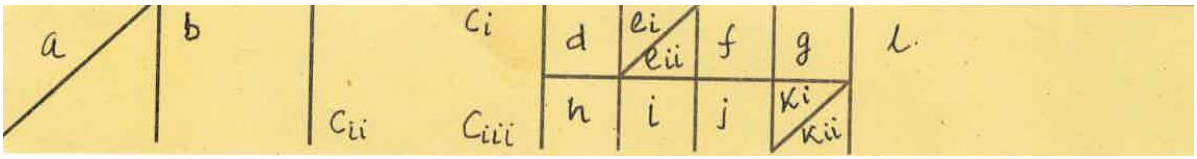
i. Type of instrument approach

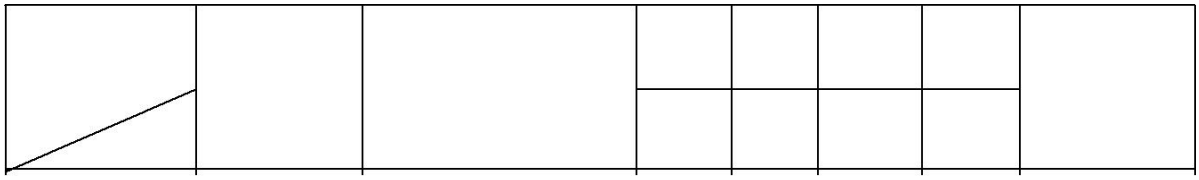
j. i. Expected Approach Time ii. No delay expected

k. i. Time at which landing clearance is issued ii. Time at which aircraft lands

l. Miscellaneous information

Departure Strip





a. Estimated off Block Time

b. Altitude/Flight Level

c. Call Sign i. Type of Aircraft ii. Flight Rules iii. Indicated Air Speed

d. Runway in Use

e. i. Time at which Start up clearance is issued

ii. Time at which Taxi clearance is issued

f. Time at which ATC clearance is issued

g. Airborne or takeoff time

h. Name of Departure Aerodrome

i. Route of flight

j. Name of Destination Aerodrome

k. i. Point/Fix at which aircraft is transferred ii. Time at which aircraft is transferred

l. Miscellaneous information

APPENDIX- E

TABLE OF LAST VFR TIME

Month & Date	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
1	1152	1216	1237	1255	1313	1332	1340	1328	1259	1223	1152	1140
2	1152	1217	1238	1256	1313	1332	1340	1327	1258	1222	1151	1140
3	1153	1218	1239	1257	1314	1333	1340	1326	1256	1221	1150	1140
4	1153	1219	1239	1257	1315	1333	1340	1326	1255	1220	1149	1140
5	1154	1219	1240	1258	1315	1333	1340	1325	1254	1219	1149	1140
6	1155	1220	1240	1258	1316	1334	1339	1324	1253	1217	1148	1140
7	1155	1221	1241	1259	1317	1334	1339	1324	1252	1216	1147	1140
8	1156	1222	1241	1259	1317	1335	1339	1323	1250	1215	1147	1140
9	1157	1223	1242	1300	1318	1335	1339	1322	1249	1214	1147	1140
10	1158	1224	1243	1300	1318	1335	1338	1321	1248	1213	1146	1140
11	1159	1225	1243	1301	1319	1335	1338	1320	1247	1211	1145	1141
12	1200	1225	1244	1301	1320	1336	1338	1319	1245	1210	1145	1141
13	1201	1226	1244	1302	1320	1336	1338	1319	1244	1209	1144	1141
14	1202	1227	1245	1303	1321	1337	1337	1318	1243	1208	1143	1141
15	1202	1227	1245	1303	1322	1337	1337	1317	1242	1207	1143	1142
16	1203	1228	1246	1304	1322	1338	1337	1316	1241	1206	1143	1142
17	1204	1229	1247	1305	1322	1338	1337	1315	1239	1205	1143	1142
18	1204	1230	1247	1305	1323	1338	1336	1314	1238	1204	1142	1143
19	1205	1230	1248	1305	1324	1338	1336	1313	1237	1203	1142	1143
20	1206	1232	1249	1306	1324	1339	1335	1312	1236	1202	1141	1144
21	1207	1232	1249	1307	1325	1339	1335	1311	1235	1201	1141	1144
22	1208	1233	1250	1307	1326	1339	1334	1310	1233	1200	1140	1145
23	1209	1234	1250	1308	1326	1339	1334	1309	1232	1159	1140	1145
24	1210	1234	1251	1309	1327	1339	1333	1307	1231	1158	1140	1146
25	1210	1235	1251	1309	1327	1339	1333	1306	1230	1157	1140	1147
26	1211	1236	1252	1310	1328	1339	1332	1305	1229	1156	1140	1147
27	1212	1237	1253	1310	1328	1339	1331	1304	1227	1156	1140	1148
28	1213	1237	1253	1311	1329	1339	1331	1303	1226	1155	1140	1149
29	1214	1237	1254	1311	1330	1339	1330	1302	1225	1154	1140	1150
30	1215	-	1254	1312	1331	1340	1329	1301	1224	1153	1140	1150
31	1216	-	1255	-	1331	-	1329	1300	-	1152	-	1151

APPENDIX F

SECTOR VISIBILITY PROCEDURES IN DHANGADI AIRPORT

1. INTRODUCTION

The controllers and pilots face several flight delays and traffic congestion due to fog winter season in Dhangadi. Introduction of sector visibility confirms the safety standard with smooth flow of flight operations. As no set of rules is comprehensive enough to dictate easily in the application of the controller's judgment the contents of this appendix are the best possible compromise safeguarding the interest of both controllers & pilots.

NOTE: The procedures outlined below in the form of Instructions are intended to act as guidelines but nothing in them precludes the CONTROLLER from exercising his own discretion and initiative under any particular circumstances if by so doing traffic will be expedited without undue reduction of safety.

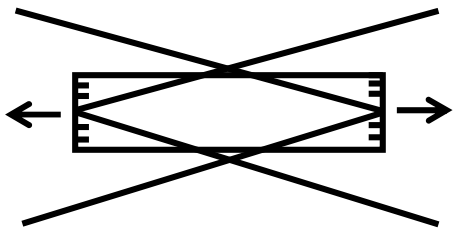
INSTRUCTIONS:

SECTOR VISIBILITY: By this term a Controller will understand that (slant) visibility within the limits of that airspace above the ground which encompasses the climb-out & approach path of an aircraft.

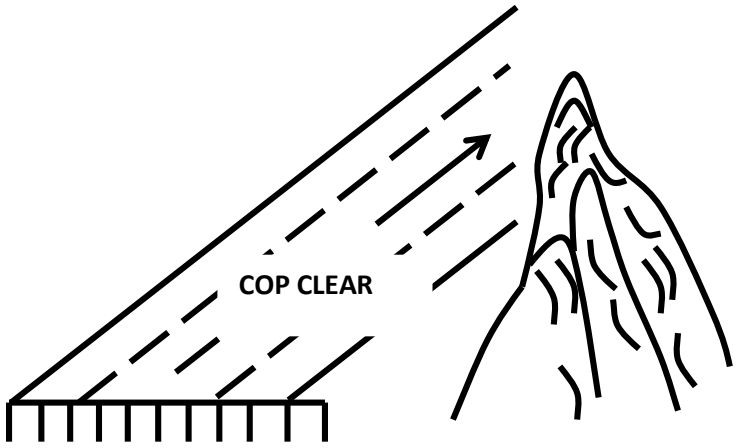
The visibility that is evaluated in each sector is the sector visibility.

ILLUSTRATION:

(a) Plane view



b) Profile view



1. The Controler is primarily cncerned with Two sectors- East and West.
2. Henceforth, Controllers will base their judgement in determining visibility enabling aircraft movement of the contents of the Remark section of the METAR.
3. The above will be the guiding factor regardless of prevailing visibility.

   Aircraft will be cleared for take-off if the duty cntroller, in his opinion, feels that the climb-out path along the relevant sector is clear although the prevailing visibility is below the prscribed minima of 5 kms. The final decision, as to any positive actin lie closing or opening the RWY etc, rests exclusively with the ATC on duty.

4. Remarks sectin of the METAR states:

   Blue sky and hills to the East visible through thin fog layer.

   The Controller keeping the above in mind and making his own obserbation can logically conclude that the visibility along the climb-out-path (falling wihtin the sector visibility of an aircraft departing from RWY 09 is acceptable, i.e. 5 kms or more , although there may be fog patches at the end of the RWY or elsewhere, which are not relevant to the movement of the aircraft.

5. When weather conditions warrant that sector visibility permits departures only due fog patches over the threshold or along the final approach, the controller will make the aircraft intending to depart aware of this situation. Phraseology in this context will be DUE VISIBILITY RWY OPEN FOR DEPARTURES ONLY and asking for the TAKE-OFF ALTERNATE. If the airborne traffic insists on landing the controller will use the phraseology LANDING SHALL BE AT YOUR RISK and initiate the appropriate emergency step immediately. All abnormalities, be it weather or other factors, that affect traffic movement will be entered in the appropriate log book.
6. Irrespective of type, all aircraft movements will be held or cleared according to the minima. This would be kept in mind in order to avoid confusion and maintain a reasonable standard in achieving uniformity of sector visibility application.

APPENDIX G

PROCEDURES FOR OPENING AND CLOSING OF ATC WATCH

A) Following checklist will be used for opening of ATC Watch;

1. Duty on;
2. Switch on VHF on 122.3 MHZ and 121.5 MHZ;
3. Switch on HF on 5805.5 KHZ;
4. Radio check with Fire Station and check crash alarm;
5. Check METAR and make own weather observation;
6. Check MET display system;
7. Switch on computer for airfield lighting system;
8. Switch on computer for AMHS;
9. Check operational status and power of standby portable VHF;
10. Check flight plan or flight strips, if any, filed on the previous day;
11. Check notice board for current information;
12. Check Hot line;
13. Get report on Movement area condition and NAV AID, airfield lighting status;
14. Check the digital clock from available sources;
15. Declare airport status;
16. Log any FAULT and report it to Chief ATS and airport Chief;

B) Following checklist will be used for closing of ATC Watch;

1. Receive last domestic arrival time from Kathmandu or from other aerodrome (like: VNNG);
2. Log landing time of last flight in HF log book and mention closing time in night operation log book;
3. Inform Kathmandu and Nepaljung about night stop aircraft making at Dhangadi, if any;
4. Switch off all lights ;
5. Inform to all concern (Fire/technical) about operation closer time .
6. Switch off VHF and HF;
7. Switch off computer of AMHS;
8. Disconnect power plug of all computer and other devices like telephone set, Walkie-Talkie set, water filter, Air Conditions, AMHS, from the source to save from thunderstorm.
9. Make entry of all arrival and departure information into Movement log book.
10. Make entry into VHF log book (control position log book) and duty watch on logbook.
11. Place each document, logbook, binocular and charts on proper position
12. Keep Airlines program, flight strips and METAR in allocated place.
13. Enter movement record in the movement log book.

Note 1: Airlines have to request DHCAO for the extension of operation if there is likelihood of flight operation beyond operation hour.

APPENDIX – H

SYMBOLS AND CODES

1 It has been found in practice that message of routine nature can be taken by down at the same as that at which a clearly spoken transmission is made, by the use of approved abbreviation, contractions and symbols.

2 The abbreviations and symbols which follow are authorized for the use in making entries on flight progress strips in copying or writing traffic

3 Unauthorized abbreviations and symbols will not be used.

Clearance Instruction

∧	= NO delay expected
RSYD …….	=Release subject to your discretion with regard to
RLCE	= Request level change en-route
↓	= Descend
–	= To : (used to indicate "Form …….. to ……..)
( )	= Alternative instruction
——	= Restriction written below this line
/	= After passing
RL	= Report Immediately on Leaving (level)
RR	= Report Immediately on Reacting (level)
TFC	= Traffic is ……. (c/s of aircraft 0)
MA	= Missed approach
SI	= Straight-in approach
↰	= Left turnout
↱	= Right turnout

RLS = Release

DLA = Delay

EAC = Expect approach clearance (time)

EFC = Expect further clearance (time)

UFN = Until Further Notice

 = Pilot cancelled IFR Flight plan

 = Out of control zone

 = Enter Control Zone

ABV = Above ……. ft =+ …….

BLO = Below ……. ft =+ …….

> = Before

< After

TKOF = Take off

V< (TIME) = Clearance void after ……(time)

UFA = until further advise

 = Information forwarded

 = Coordination effected

 = Climb coordinated

 = Descent coordinated

…....+ = At or above ……..... ft

Z = Delay not determined

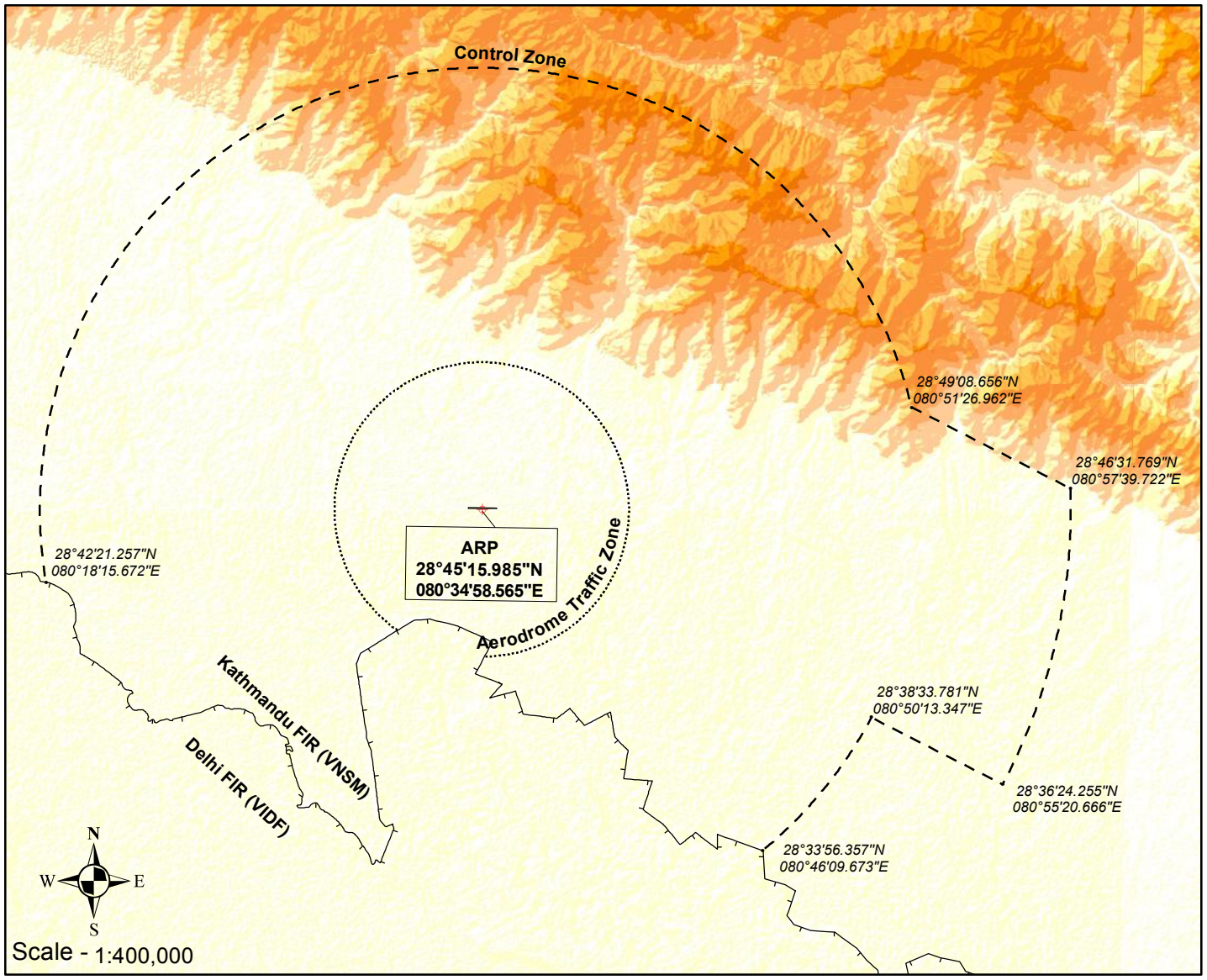
APPENDIX – I

MAPS AND CHARTS

APPENDIX -I1	CONTROL ZONE AND AERODROME TRAFFIC ZONE.
APPENDIX -I2	STANDARD INSTRUMENT DEPARTURE (SID) RWY 27 1. SUKET 1A 2. TULSI 1D
APPENDIX- I3	STANDARD INSTRUMENT DEPARTURE (SID) RWY 27 1. CHAIT 1A
APPENDIX- I4	STANDARD TERMINAL ARRIVAL ROUTE(STAR) TO RWY 27 1. SUKET lR (ARRIVAL) 2. TULSI lC (ARRIVAL)
APPENDIX –I5	STANDARD INSTRUMENT APPROACH CHART RNAV (GNSS) RWY 27
APPENDIX –I6	VISIBILITY REFERENCE CHART

APPENDIX -I1

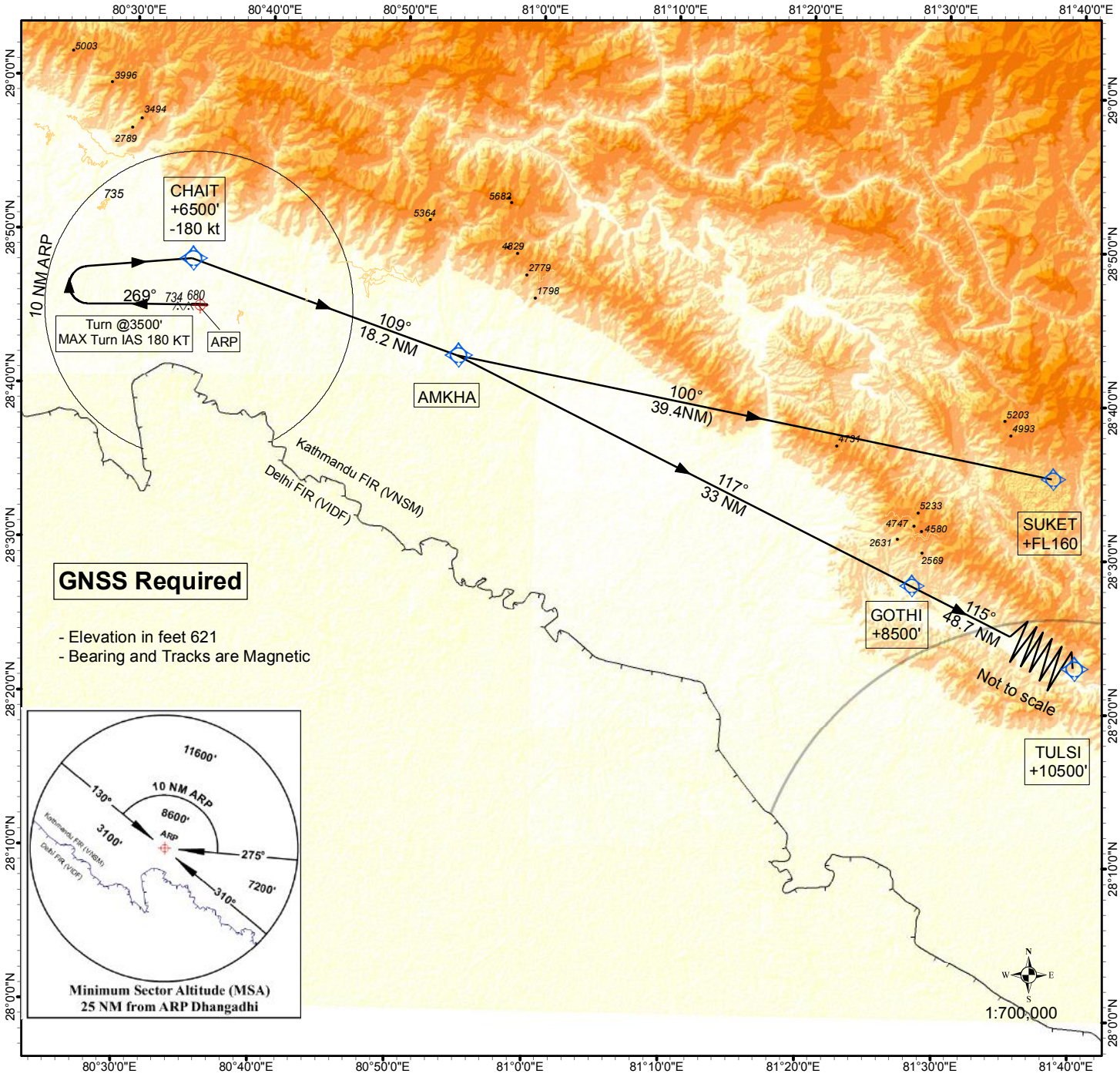
CONTROL ZONE AND AERODROME TRAFFIC ZONE



AIRSPACE	IDENT	Lateral Limit	Vertical Limit
Aerodrome Traffic Zone	ATZ	An area of a circle of 5 NM radius centered at Dhangadhi ARP and to the South up to VNSM FIR.	2000 ft AGL GND
Control Zone	CTR	An area bounded by (28°42'21.257"N; 080°18'15.672"E) then along an arc of a circle of 15 NM radius centered at Dhangadhi ARP to (28°49'08.656"N; 080°51'26.962"E) to (28°46'31.769"N; 080°57'39.722"E) then along an arc of a circle of 20 NM radius centered at Dhangadhi ARP to (28°36'24.255"N; 080°55'20.666"E) to (28°38'33.781"N; 080°50'13.347"E) then along an arc of a circle of 15 NM radius centered at Dhangadhi ARP to (28°33'56.357"N; 080°46'09.673"E) and along Kathmandu FIR (VNSM) to (28°42'21.257"N; 080°18'15.672"E).	9500 ft AMSL GND

APPENDIX -I 2

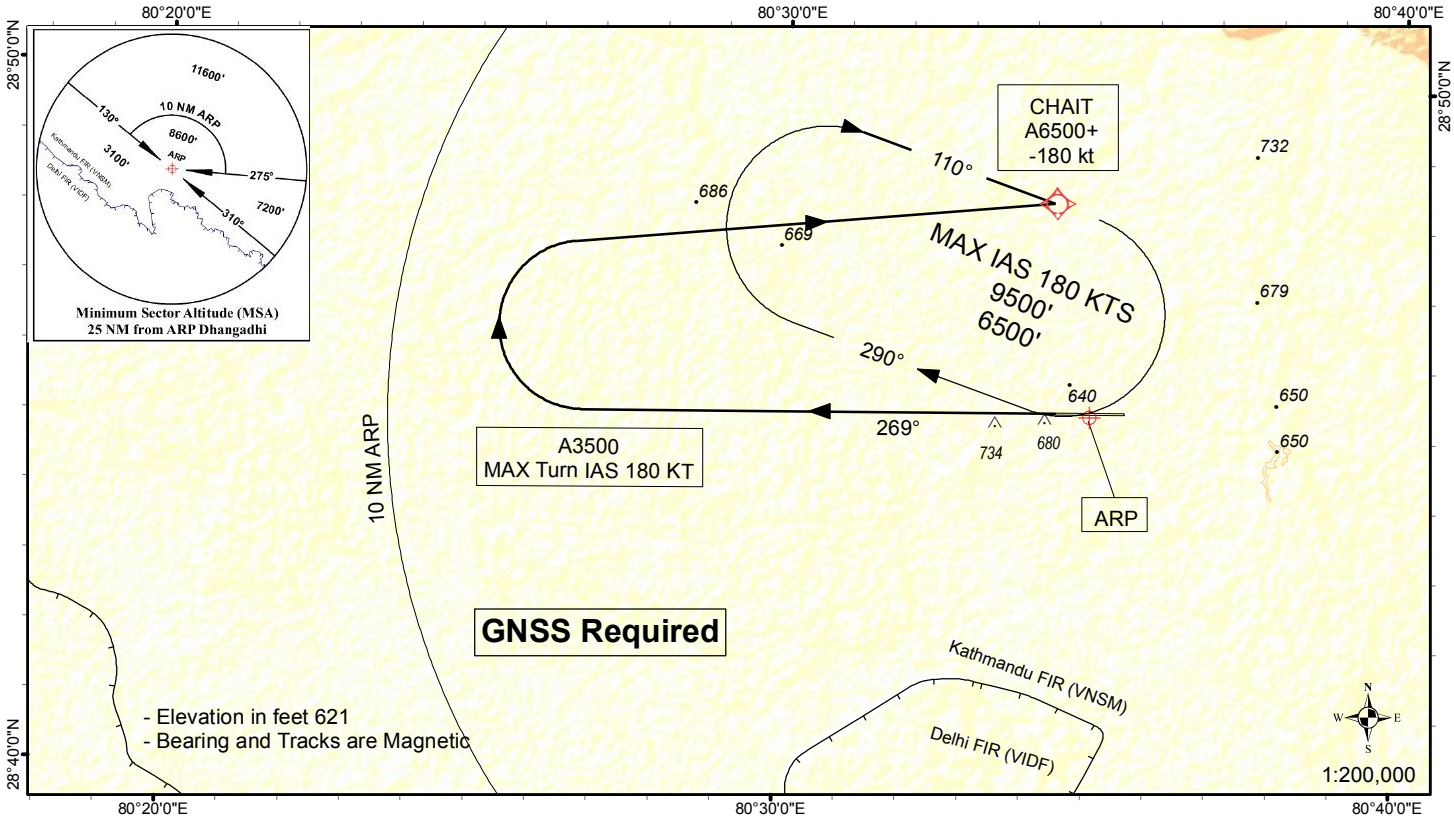
RNP1 SID TO RWY 27- SUKET 1A AND TULSI 1D



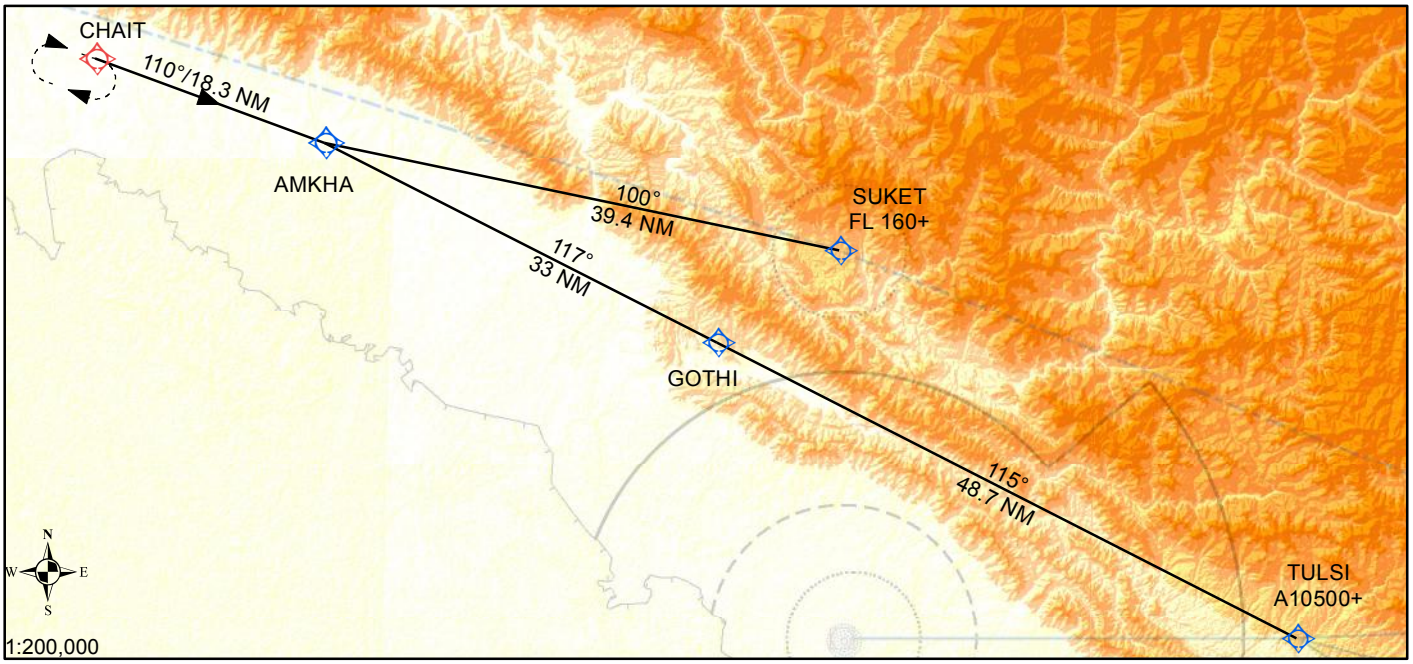
Minimum Visibility Required - 1600 m
SID SUKET 1A RWY 27 (PDG 7.0%)
Maximum turn IAS 180 KTS Climb on runway axis. At 3500 ft AMSL, turn right direct to CHAIT at or above 6500 ft. Then track 109° to AMKHA. Then track 100° to SUKET at or above FL 160.
SID TULSI 1D RWY 27 (PDG 7.0%)
Maximum turn IAS 180 KTS Climb on runway axis. At 3500 ft AMSL, turn right direct to CHAIT at or above 6500 ft. Then track 109° to AMKHA. Then track 117° to GOTHI at or above 8500 ft. Then track 115° to TULSI at or above 10500 ft.

APPENDIX -I 3

RNP1 SID TO RWY 27- CHAIT 1A

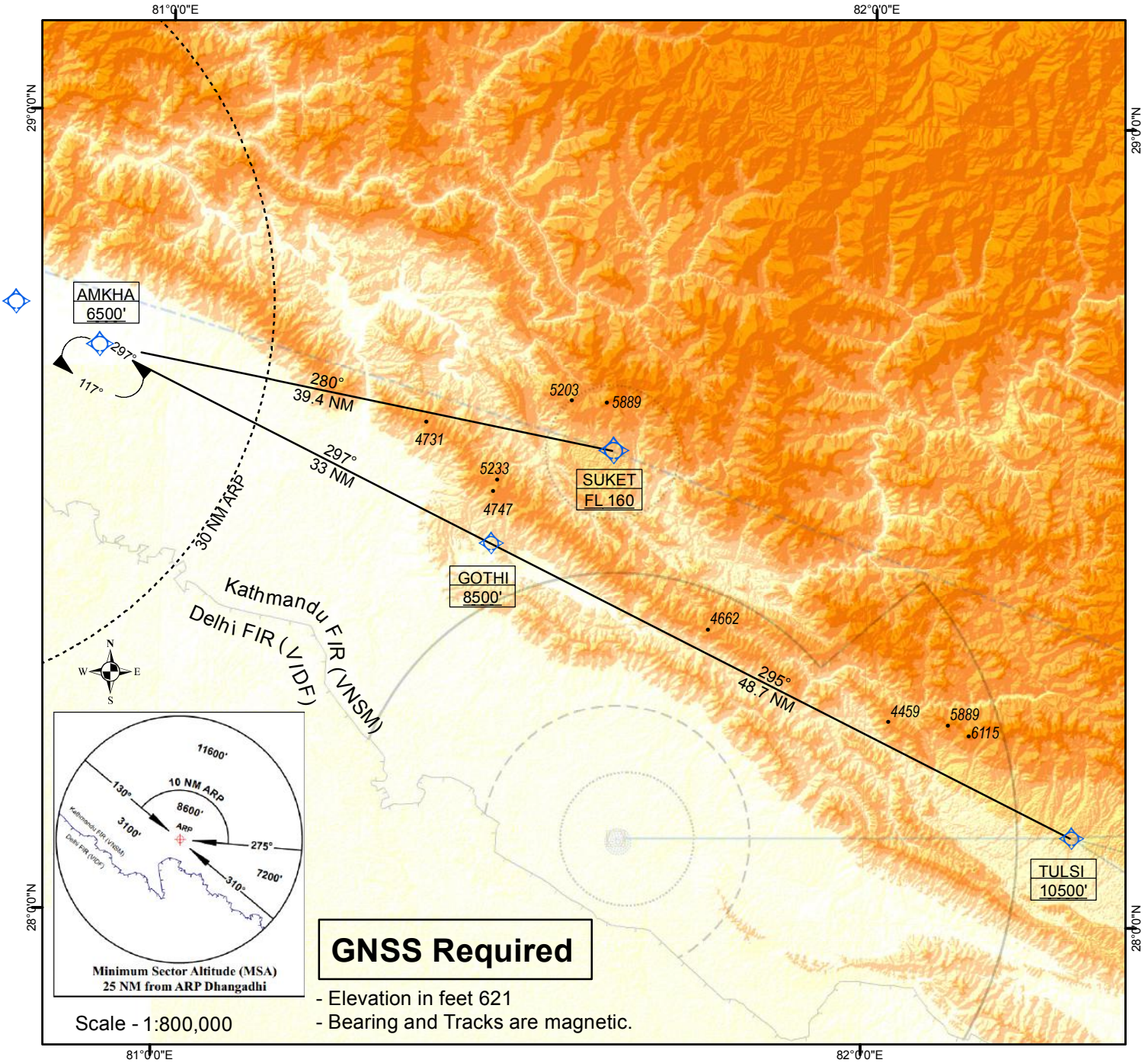


Minimum Visibility Required - 1600 m	
SID CHAIT 1A RWY 27 (PDG 7.0%)	
Maximum turn IAS 180 KTS Climb on runway axis. At 3500 ft AMSL, turn right direct to CHAIT H.P. at or above 6500 ft. Then follow ATC Instruction.	
Transition to Routes:	
To L626	From CHAIT track direct to AMKHA then SUKET at or above FL 160.
To W17	From CHAIT track direct to AMKHA then TULSI at or above 10500 ft via GOTHI.



APPENDIX -I 4

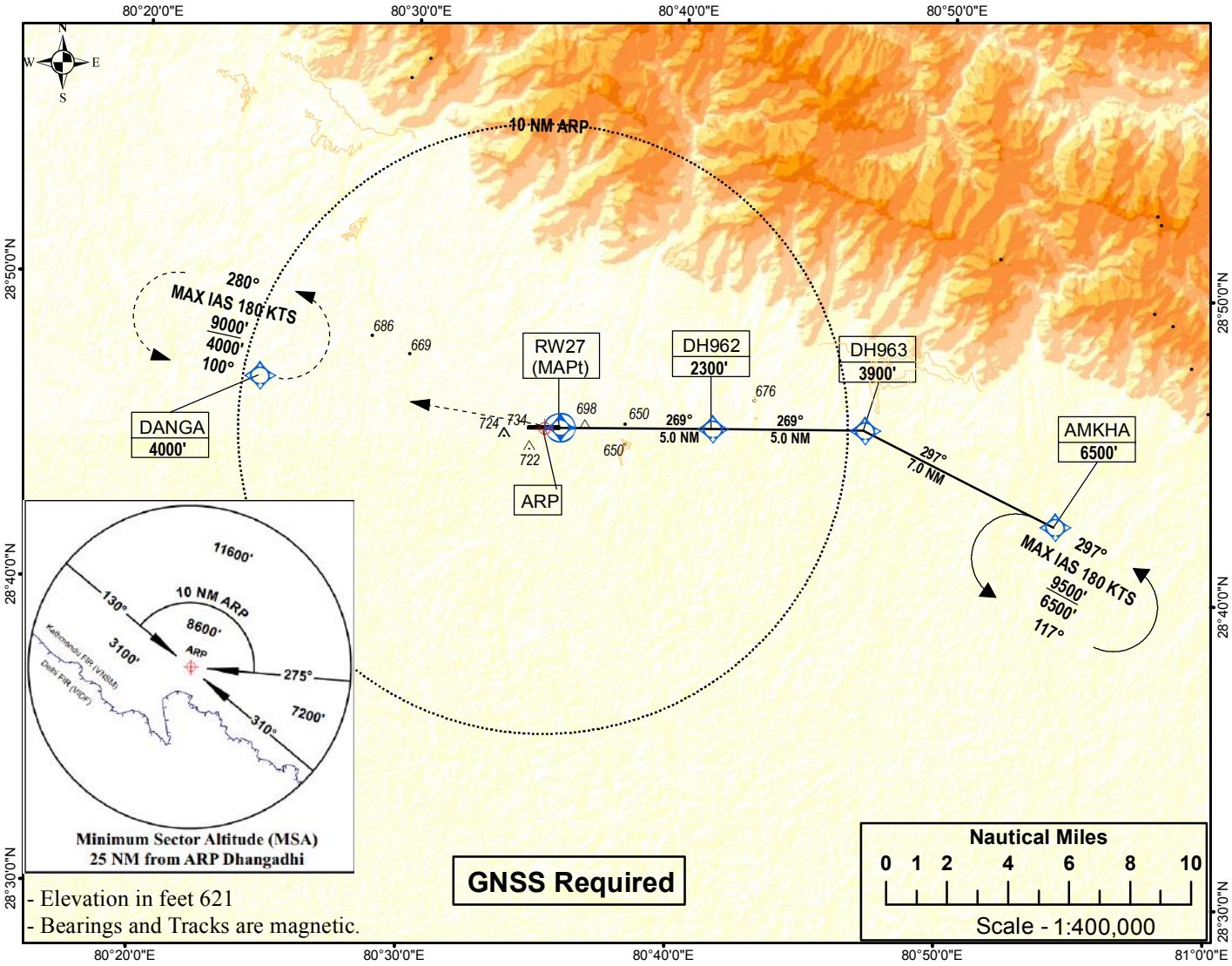
RNP 1 STAR- SUKET 1R AND TULSI 1C



SUKET 1R ARRIVAL	TULSI 1C ARRIVAL
From SUKET track 280° to AMKHA at or above 6500 ft.	From TULSI track 295° to GOTHI at or above 8500 ft. Then track 297° to AMKHA at or above 6500 ft.

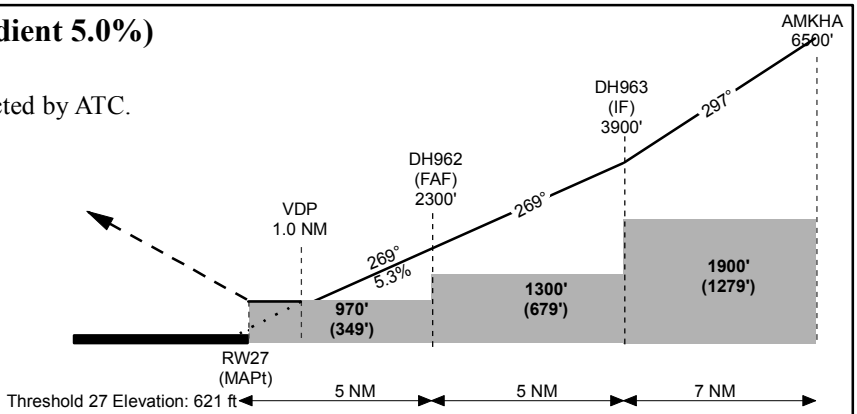
APPENDIX -I5

INSTRUMENT APPROACH- RNA(GNSS) RWY 27



MISSED APPROACH: (Climb Gradient 5.0%)

At MAPt, turn right direct to DANGA H.P.
Reach DANGA at or above 4000' or as instructed by ATC.



LNAV	Aircraft Category					
	A		B		C	
	OCA (OCH)	Visibility (m)	OCA (OCH)	Visibility (m)	OCA (OCH)	Visibility (m)
Straight-in	970' (349')	1700	970' (349')	1700	970' (349')	1700
Circling	1040' (419')	2000	1090' (469')	2200	1220' (599')	2800
	NOT AUTHORIZED AT NIGHT					

Note: No Approach Lighting System at Dhangadhi Airport.

APPENDIX -I6

VISIBILITY REFERENCE CHART

TO BE DEVELOPED