Manual of Standards
Aerodrome Flight Information Service(AFIS)

FIRST EDITION 2016 (2072 B.S)

This AFIS incorporates latest amendments of relevant Civil Aviation Requirements, ICAO Annexes and DOCs.

Civil Aviation Authoriity of Nepal
Babarmahal, Kathmandu
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Foreword

To bring uniformity in delivering Aerodrome Flight Information Service (AFIS), and to standardize and enhance the quality of the serive, this "Manual of Standards – Aerodrome Flight Information" is enacted by Civil Aviation Authority of Nepal pursuant to Rule – 82 of Civil Aviation Regulation – 2058 (2002) and published by the Air Navigation Services Safety and Standard Department (ANSSD). This Manual spells out the national standards and requirements to be met by the ANSPs while discharging the AFIS functions within the uncontrolled airfields of Nepal. ATS Personnel working in AFIS stations are required to be familiar with the provisions of this manual that pertain to their operational activities.

The standards in this Manual are mainly based on ICAO Circular 211-AN/128, Eurocontrol Manual for Aerodrome Flight Information Service, AFIS Manual 2006 published by CAAN and some other relevant documents.

This is a controlled document and is subject to periodic review. Air navigation Services Safety Standards Department will maintain this document as complete, accurate and up-dated as possible. Comments and recommendations for revision/amendment action to this publication shall be forwarded to the Director of ANS Safety Standards Department.

Sanjiv Gautam
Director General
Date: Jan 2016

Amendment Record

Amendments and Corrigenda to this "Manual of Standards AFIS" 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

Amendments			
No	Date of Issue	Date Entered	Entered by

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Introduction

A. General

i) Aerodrome flight information service (AFIS) is the term used to describe the provision of information useful for the safe and efficient conduct of aerodrome traffic at those aerodromes where the appropriate authority determines that the provision of aerodrome control service is not justified, or is not justified on a 24-hour basis.

In determining whether aerodrome control service or AFIS shall be provided at a given aerodrome, the appropriate authorities are expected to give due consideration to the type(s) of air traffic involved, the density of air traffic, the topographical and meteorological conditions, and such other factors as may be pertinent to safety and efficiency, including the language or languages to be used in air-ground communications.

ii) Aerodrome Flight Information Service (AFIS) is provided within the FIZ, where established, on the basis of provision of this manual

iii) This Manual prescribes procedures and phraseologies for the use by AFIS Personnel providing AFIS. AFIS Personnel are required to be familiar with the provisions of this manual that pertain to their operational responsibilities and to exercise their best judgment if they encounter situations that are not covered by it.

iv) Uncontrolled aerodromes at which AFIS will be provided shall be identified as "AFIS Aerodromes" in order to distinguish them from controlled aerodromes.

v)The Radiotelephony call sign of an AFIS aerodrome shall be "aerodrome information" following the name of the aerodrome, e.g. Lukla aerodrome information. The word "aerodrome" may be deleted after initial contact has been satisfactorily established

vi) AFIS is provided by a unit located at the aerodrome and identified as an "AFIS Unit". An AFIS Unit will provide FIS and Alerting service to aerodrome traffic. If at any time it is apparent that the pilots are not aware that aerodrome control service is not provided, the pilots shall immediately be informed of this fact using the following phraseology: **AERODROME CONTROL SERVICE NOT PROVIDED.**

vii) The AFIS unit is not an air traffic control unit. It is therefore the responsibility of pilots (flight crews) using the service provided by this unit to maintain proper separation in conformity with the rules of the air and other provisions.

> *Note: The pilot-in-command of an aircraft shall, whether manipulating the controls or not, be responsible for the operation of the aircraft in accordance with the rules of the air, except that the pilot-in-command may depart from these rules in circumstances that render such departure absolutely necessary in the interests of safety.*

viii) English language shall be used in providing AFIS.

ix) Nothing shall preclude ATS Personnel to use their best judgment to handle the situation that may demand the deviation from the published applicable rules. However, they may be asked to justify their action(s).

B. Functions of AFIS

i) All AFIS airspace, i.e. FIZ is Class G airspace where FIS and Alerting Service are provided to aerodrome traffic.

ii) AFIS unit shall issue information and advice to aircraft operating in the manoeuvring area of an aerodrome and aircraft flying within the FIZ so as to promote a safe and efficient flow of air traffic.

iii) AFIS unit shall maintain a continuous watch on all flight operations on and in the vicinity of an aerodrome as well as vehicles and personnel on the manoeuvring area. Traffic shall be handled in accordance with the procedures set forth herein and all applicable traffic rules specified by the CAAN.

iv) Movement of vehicles and pedestrian on the manoeuvring area of an aerodrome shall be under the authorization of an AFIS unit. When such authorization is granted, it shall be rigidly controlled.

v) AFIS unit is responsible to alert the rescue and fire fighting services, if applicable, as and when required.

vi) AFIS unit is responsible for timely reporting to concern services /offices/units about 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 AFIS.

C. Handling of clearances, company and other messages.

i) Messages, including clearances, received from other ATS units to aircraft (e.g. from the associated FIC / ACC shall be relayed in timely manner.

ii) Any other information contributing to safety shall be transmitted immediately.

iii) Company messages requesting that an aircraft be recalled to a specified position of the aerodrome shall be accepted for transmission. The transmission of other company messages shall be at the discretion of the ATS Personnel.

D. Hours of Operation

Concerned AFIS Unit provides AFIS between the time mentioned in "Aantarik Bimansthal Sanchalan (Byabasthapan) Nirdesika 2066".

E. Issuance of NOTAM

Notam shall be published for any establishment, condition or charge in aeronautical facility service, procedure or hazard as required by Civil Aviation Requirement 15.

CHAPTER-1

Definitions and abbreviation

1.1 Definitions

Aerodrome: A defined area on land or water (including building, installation and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

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

Aerodrome control tower: A unit established to provide air traffic control service to aerodrome traffic.

Aerodrome elevation: The elevation of the highest point of the landing area.

Aerodrome flight information service: Flight information service for aerodrome traffic.

Aerodrome flight information service unit. A unit established to provide flight information service and alerting service for aerodrome traffic at AFIS aerodromes.

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

Aerodrome traffic zone: An airspace of defined dimensions established around an aerodrome for the protection of aerodrome traffic.

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

Aeronautical ground light. Any light specially provided as an aid to air navigation, other than a light displayed on an aircraft.

Aircraft: Any ma/chine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

Aircraft proximity. A situation in which, in the opinion of a pilot or air traffic services personnel, the distance between aircraft as well as their relative positions and speed have been such that the safety of the aircraft involved may have been compromised.

An aircraft proximity is classified as follows:

Risk of collision. The risk classification of an aircraft proximity in which serious risk of collision has existed.

Safety not assured. The risk classification of an aircraft proximity in which the safety of the aircraft may have been compromised.

No risk of collision. The risk classification of an aircraft proximity in which no risk of collision has existed.

Risk not determined. The risk classification of an aircraft proximity in which insufficient information was available to determine the risk involved, or inconclusive or conflicting evidence precluded such determination

Air-ground communication: Two-way communication between aircraft and stations or locations on the surface of the earth.

AIRPROX. The code word used in an air traffic incident report to designate aircraft proximity.

Aircraft identification: A group of letters, figures or a combination thereof which is either identical to, or the coded equivalent of, the aircraft call sign to be used in air-ground communications, and which is used to identify the aircraft in ground-ground air traffic services communications.

Air-taxiing: Movement of a helicopter/VTOL above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 37 km/h (20 kt).

Note.— The actual height may vary, and some helicopters may require air-taxiing above 8 m (25 ft) AGL to reduce ground effect turbulence or provide clearance for cargo slingloads.

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

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

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

- Preventing collisions:
- Between aircraft,
- On the manoeuvring area between aircraft and obstructions; and
- Expediting and maintaining an orderly flow of air traffic.

Air traffic flow management (ATFM). A service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilized to the maximum extent possible, and that the traffic volume is compatible with the capacities declared by the appropriate ATS providers.

Air traffic services: 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).

Air traffic services reporting office: A unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure.

ALERFA. The code word used to designate an alert phase.

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

Alert phase. A situation wherein apprehension exists as to the safety of an aircraft and its occupants.

Altitude: The vertical distance of a level, a point or an object considered as a point, measured from

mean sea level (MSL).

Alternate aerodrome: An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing.

Alternate aerodromes include the following:

- Take-off alternate;
- En-route alternate;
- Destination alternate

Airway: A control area or portion thereof established in the form of corridor.

Approach control service: Air traffic control service for arriving or departing controlled flights.

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

Apron: A defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance.

Area control centre: A unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction.

Area Navigation (RNAV): A method of navigation which permits aircraft operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

ATIS. The symbol used to designate automatic terminal information service.

ATS route: A specified route designed for channeling the flow of traffic as necessary for the provision of air traffic services.

Blind transmission: A transmission from one station to another station in circumstances where two-way communication cannot be established but where it is believed that the called station is able to receive the transmission.

Base turn. A turn executed by the aircraft during the initial approach between the end of the outbound track and the beginning of the intermediate or final approach track. The tracks are not reciprocal.

Note.— Base turns may be designated as being made either in level flight or while descending, according to the circumstances of each individual procedure.

Ceiling: The height above the ground or water of the base of the lowest layer of cloud below 6,000m (20,000ft) covering more than of the sky.

Clearance limit: The point to which an aircraft is granted an air traffic control clearance.

Controlled aerodrome: An aerodrome at which air traffic control service is provided to aerodrome traffic.

Controlled airspace: An airspace of defined dimensions within which air traffic control service provided in accordance with the airspace classification.

Controlled flight: Any flight which is subject to an air traffic control clearance.

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

Cruising level: A level maintained during a significant portion of a flight.

Current flight plan (CPL). The flight plan, including changes, if any, brought about by subsequent clearances.

Note.— When the word "message" is used as a suffix to this term, it denotes the content and format of the current flight plan data sent from one unit to another.

DETRESFA. The code word used to designate a distress phase.

Distress phase. A situation wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance

Elevation: The vertical distance of a point or a level, on or affixed to the surface of the earth, measured from mean sea level.

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

Estimated time of arrival (ETA). 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.

Estimated elapsed time: The estimated time required to proceed from one significant point to another.

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

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

Filed flight plan (FPL). The flight plan as filed with an ATS unit by the pilot or a designated representative, without any subsequent changes.

Note.— When the word "message" is used as a suffix to this term, it denotes the content and format of the filed flight plan data as transmitted.

Final approach. That part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified,

a) at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified; or

b) at the point of interception of the last track specified in the approach procedure; and ends at a point in the vicinity of an aerodrome from which:

1) a landing can be made; or
2) a missed approach procedure is initiated

Flight information center (FIC): A unit established to provide flight information service and alerting service.

Flight information region: An airspace of defined dimensions within which flight information service and alerting service are provided.

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

Flight information zone*:* An uncontrolled airspace of defined dimensions extending upwards from the surface of the earth to a specified upper limit within which aerodrome flight information service is provided.

Note1: When established, FIZ will have the following dimensions;

a) Lateral limit :5 nm radius centered from the middle of the runway ; and
b) Vertical limit: shall be identified by concerned aerodrome but shall not be less than 200ft AGL.

Note2: When a portion of a Flight Information Zone (FIZ) coincides with controlled airspace, the procedures for controlled flight within such airspace shall be applied.

Note3: CAAN may extend the vertical and lateral limit of FIZ of a particular aerodrome to accommodate all traffic flow from a specific direction. This shall be done by disseminating information by issuing NOTAM or incorporating in AIP.

Flight level. A surface of constant atmospheric pressure which is related to a specific pressure datum, 1 013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals.

Note 1.— A pressure type altimeter calibrated in accordance with the Standard Atmosphere:

a) when set to a QNH altimeter setting, will indicate altitude;

b) when set to QFE altimeter setting, will indicate height above the QFE reference datum;

c) when set to a pressure of 1 013.2 hPa, may be used to indicate flight levels.

Note 2.— The terms "height" and "altitude", used in Note 1 above, indicate altimetric rather than geometric heights and altitudes.

Forecast. A statement of expected meteorological conditions for a specified time or period, and for a specified area or portion of airspace.

Flight plan: Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

Flight visibility: The visibility forward from the cockpit of an aircraft in flight.

Glide path. A descent profile determined for vertical guidance during a final approach.

Ground visibility: The visibility at an aerodrome, as reported by an accredited observer.

Holding fix. A geographical location that serves as a reference for a holding procedure.

Holding procedure. A predetermined manoeuvre which keeps an aircraft within a specified airspace while awaiting further clearance.

IFR. The symbol used to designate the instrument flight rules.

IMC. The symbol used to designate instrument meteorological conditions.

IFR flight: A flight conducted in accordance with the instrument flight rules.

Instrument meteorological conditions (IMC). Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions.

INCERFA. The code word used to designate an uncertainty phase.

Incident. An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

Landing area: That part of a movement area intended for the landing or take-off of aircraft.

Level: A generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level.

Location indicator. A four-letter code group formulated in accordance with rules prescribed by ICAO and assigned to the location of an aeronautical fixed station.

Local traffic. Any aircraft, vehicle or personnel on or near the manoeuvring area, or traffic operating in the vicinity of the aerodrome, which may constitute a hazard to the aircraft concerned.

Manoeuvring area: That part of an aerodrome to be used for the take-off, landing and taxing of aircraft, excluding aprons.

Missed approach procedure. The procedure to be followed if the approach cannot be continued.

Movement area: That part of an aerodrome to be used for the take-off, landing and taxing of aircraft, consisting of manoeuvring area and the aprons.

NOTAM: A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

Pilot-in-command. The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.

Procedure turn. A manoeuvre in which a turn is made away from a designated track followed by a turn in the opposite direction to permit the aircraft to intercept and proceed along the reciprocal of the designated track.

Note 1.— Procedure turns are designated "left" or "right" according to the direction of the initial turn.

Note 2.— Procedure turns may be designated as being made either in level flight or while descending, according to the circumstances of each individual procedure.

Radiotelephony: A form of radio communication primarily intended for the exchange of information in the form of speech

Reporting point: A specified geographical location in relation to which the position of an aircraft can be reported.

Repetitive flight plan (RPL). A flight plan related to a series of frequently recurring, regularly operated individual flights with identical basic features, submitted by an operator for retention and repetitive use by ATS units.

Rescue coordination center: A unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.

Runway: A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

Runway-holding position. A designated position intended to protect a runway, an obstacle limitation surface, or an ILS/MLS critical/sensitive area at which taxiing aircraft and vehicles shall stop and hold, unless otherwise authorized by the aerodrome control tower.

Note.— In radiotelephony phraseologies, the expression "holding point" is used to designate the runway-holding position.

Runway incursion. Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft.

Runway visual range (RVR). The range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line.

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

Slush. Water-saturated snow which with a heel-and-toe slap-down motion against the ground will be displaced with a splatter; specific gravity: 0.5 up to 0.8.

Note.— Combinations of ice, snow and/or standing water may, especially when rain, rain and snow, or snow is falling, produce substances with specific gravities in excess of 0.8. These substances, due to their high water/ice content, will have a transparent rather than a cloudy appearance and, at the higher specific gravities, will be readily distinguishable from slush. Snow (on the ground).

a) Dry snow. Snow which can be blown if loose or, if compacted by hand, will fall apart upon release; specific gravity: up to but not including 0.35.

b) Wet snow. Snow which, if compacted by hand, will stick together and tend to or form snowball; specific gravity: 0.35 up to but not including 0.5.

c) Compacted snow. Snow which has been compressed into a solid mass that resists further compression and will hold together or break up into lumps if picked up; specific gravity: 0.5 and over.

Stop way. A defined rectangular area on the ground at the end of take-off run available prepared as a suitable area in which an aircraft can be stopped in the case of an abandoned take-off.

Taxiing: Movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing.

Taxiway. A defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:

a) Aircraft stand taxilane. A portion of an apron designated as a taxiway and intended to provide access to aircraft stands only.

b) Apron taxiway. A portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron.

c) Rapid exit taxiway. A taxiway connected to a runway at an acute angle and

designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimizing runway occupancy times.

Threshold. The beginning of that portion of the runway usable for landing.
Touchdown. The point where the nominal glide path intercepts the runway.

Note.— "Touchdown" as defined above is only a datum and is not necessarily the actual point at which the aircraft will touch the runway.

Traffic information: Information issued by an air traffic control 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 the collision.

Traffic information zone (TIZ)*. An uncontrolled airspace of defined dimensions extending upwards from the surface of the earth to a specified upper limit within which two-way communications is required for all aircraft and flight information is provided by an ATS unit.

Transition altitude: The altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes.

Transition level: The lowest flight level available for use above the transition altitude.

Transition layer. The airspace between the transition altitude and the transition level.

Terminal control area: A control area normally established at the confluence of ATS routes in the vicinity of one or more major aerodrome.

Uncertainty phase. A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.

VFR. The symbol used to designate the visual flight rules

VFR flight: A flight conducted in accordance with the visual flight rules.

Visibility. Visibility for aeronautical purposes is the greater of:

a) the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognized when observed against a bright background;

b) the greatest distance at which lights in the vicinity of 1 000 candelas can be seen and identified against an unlit background.

Note 1.— The two distances have different values in air of a given extinction coefficient, and the latter b) varies with the background illumination. The former a) is represented by the meteorological optical range (MOR).

Note 2.— The definition applies to the observations of visibility in local routine and special reports, to the observations of prevailing and minimum visibility reported in METAR and SPECI and to the observations of ground visibility.

Visual approach. An approach by an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed in visual reference to terrain.

Visual Meteorological Conditions (VMC): Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal or better than specified minima.

VMC. The symbol used to designate visual meteorological conditions.

Way Point (WP): A specified geographical location used to define an area navigation route all the flight path of an aircraft.

1.2 Abbreviation

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

A

AA	All after ……
A/A	Air-to-air
AAL	Above Aerodrome Level
AB	All before……
ABM	Abeam
ABT	About
AC	Altocumulus
ACAS	Airborne Collision Avoidance System
ACC	Area Control Centre
ACCID	Initial Notification of Aircraft accident
ACFT	Aircraft
ACK	Acknowledge
ACP	Acceptance (message type designator)
ACPT	Accept or Accepted
ACT	Active or activated or activity
AD	Aerodrome
ADA	Advisory area
ADDN	Addition or additional
ADF	Automatic direction-finding equipment
ADIZ	Air Defence Identification Zone
ADJ	Adjacent
ADR	Advisory route
ADS	Automatic Dependent Surveillance
ADS-B	ADS- Broadcast
ADS-C	ADS- Contract
ADZ	Advise
AFIL	Flight Plan Filed in the Air
AFIS	Aerodrome Flight Information Service
AFM	Yes, Affirm

AFS	Aeronautical Fixed Service
AFT	After ……. (time or place)
AFTN	Aeronautical Fixed Telecommunication Network
A/G	Air-to-ground aids
AGA	Aerodrome, air routes & ground aids
AGL	Above ground level
AGN	Again
AIC	Aeronautical Information Circular
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information Regulation and Control
AIREP	Air-report
AIS	Aeronautical Information Service
ALA	Alighting Area
ALERFA	Alert Phase
ALM	Aircraft Landing Minima
ALR	Alerting (Message type designator)
ALS	Approach Lighting System
ALT	Altitude
ALTN	Alternate (aerodrome)
AMD	Amend or amended
AMS	Aeronautical Mobile Service
AMSL	Above Mean Sea Level
ANSP	Air Navigation Services Provider
AP	Airport
APCH	Approach
APP	Approach Control Office or Approach control or Approach Control Service or Approach Control Center
APR	April
APRX	Approximate or approximately
APV	Approved, approve
ARFOR	Area forecast (in aeronautical meteorological code)
ARMET	Forecast upper wind and temperature at specified points (in aeronautical meteorological code)

ARO	Air Traffic Services Reporting Office
ARP	Aerodrome Reference Point
ARQ	Automatic Error Correction
ARR	Arrival (message type designator)
ARR	Arrive or arrival
AS	Altostratus
ASC	Ascent to or ascending to
ASDA	Accelerate-stop distance available
ASPH	Asphalt
ATA	Actual time of arrival
ATC	Air Traffic Control (in general)
ATD	Actual Time of Departure
ATFM	Air Traffic Flow Management
ATIS	Automatic Terminal Information Service
ATM	Air Traffic Management
ATN	Aeronautical Telecommunication Network
ATP	At ….. (time or place)
ATS	Air Traffic Service(s)
ATTN	Attention
ATZ	Aerodrome Traffic Zone
AUG	August
AUX	Auxiliary
AVASIS	Abbreviated visual approach slope indicator system
AVBL	Available or availability
AVG	Average
AVGAS	Aviation gasoline
AWK	Aerial work
AWY	Airway
AZM	Azimuth

B

BA	Braking Action

BASE	Cloud base
BCFG	Fog Patches
BCN	Beacon (aeronautical ground light)
BCST	Broadcast
BDRY	Boundary
BECMG	Becoming
BKN	Broken
BLDG	Building
BLSN	Blowing snow
BOMB	Bombing
BR	Mist
BRG	Bearing
BRKG	Braking
BS	Commercial broadcasting station
BTL	Between layers
BTN	Between

C

C	Degree Celsius (Centigrade)
CAT	Clear Air Turbulence
CAVOK	Visibility, cloud and present weather better than prescribed values or conditions
CB	Cumulonimbus
CC	Cirrocumulus
CD	Candela
CDN	Co-ordination (message type designator)
CFM	Confirm or I confirm
CHG	Modification (message type designator)
CI	Cirrus
CIT	Near or over large towns/city
CIV	Civil
CK	Check

CL	I am closing my station
CLA	Clear type of ice formation
CLBR	Calibration
CLD	Cloud
CLR	Clear or cleared to .. or clearance
CLSD	Closed
CM	Centimeter
CMB	Climb to, or Climbing to
CMPL	Completion or completed or complete
CNL	Flight plan cancellation (message type designator)
CNL	Cancel or cancelled
CNS	Communications, Navigation and Surveillance
COM	Communications
CON	Console
CONC	Concrete
CONST	Construction or constructed
CONT	Continue or continued
COP	Change Over Point
COR	Correct or corrected or correction
COV	Cover or covered or covering
CPL	Current flight plan (message type designator)
CS	Call sign (used to request a call sign)
CS	Cirrostratus
CTA	Control area
CTAM	Climb to and maintain
CTL	Control
CTN	Caution
CTR	Control zone
CU	Cumulus
CUF	Cumuliform
CW	Continuous wave
CWY	Clearway

D

D	Danger area (followed by identification)
DA	Decision altitude
DATIS	Data Link Automatic Terminal Information Service
DCKG	Docking
DCT	Direct (in relation to flight plan clearances and type of sapproach)
DEC	December
DEG	Degree
DEP	Depart or departure
DEP	Departure (message type designator)
DES	Descend to or descending to
DEST	Destination
DETRESFA	Distress phase
DFTI	Distance from touchdown indicator
DH	Decision height
DIF	Diffuse
DIST	Distance
DLA	Delay (message type designator)
DLA	Delay or delayed
DME	Distance measuring equipment
DNG	Danger or dangerous
DOC	Document
DOM	Domestic
DPT	Dew Point temperature
DR	Dead reckoning
DSB	Double side band
DTAM	Descend to and maintain
DTG	Date-time-group
DTRT	Deteriorate or deteriorating
DTW	Dual tandem wheels
DU	Dust

DUC	Dense upper cloud
DUPE	This is duplicate message
DUR	Duration
DVOR	Doppler VOR
DW	Dual wheels
DZ	Drizzle

E

E	East or eastern longitude
EAT	Estimated approach time
EET	Estimated elapse time
EFC	Expected Further Clearance
EHF	Extremely high frequency 300000 KHZ to 300000MHZ
ELBA	Emergency location beacon aircraft
ELEV	Elevation
ELR	Extra long range
ELT	Emergency locator transmitter
EM	Emission
EMBD	Embedded in a layer (to indicate cumulonimbus embedded in layers of other clouds)
EMERG	Emergency
ENE	East north east
ENRT	En-route
EOBT	Estimated off-block time
EQPT	Equipment
ESE	East south east
EST	Estimate or estimated or estimate (as message type designator)
ETA	Estimated time of arrival or estimating arrival
ETD	Estimated time departure or estimating departure
ETO	Estimated time over significant point
EV	Every
EXC	Except

EXER	Exercises or exercising or to exercise
EXP	Expect or expected or expecting
EXTD	Extend or extending

F

F	Fixed
F	Degree Fahrenheit
FAC	Facilities
FAF	Final approach fix
FAL	Facilitation
FAP	Final approach point
FAS	Final Approach Segment
FATO	Final approach and take-off area
FAX	Facsimile transmission
FBL	Light (used to qualify icing, turbulence, interference or static) reports)
FC	Funnel cloud
FCST	Forecast
FEB	February
FG	Fog
FIC	Flight information center
FIR	Flight information region
FIS	Flight information service
FISA	Automatic flight information service
FL	Flight level
FLG	Flashing
FLR	Flare
FLT	Flight
FLTCK	Flight check
FLW	Follow(s) or Following
FLY	Fly or flying
FM	From

FMS	Flight Management System
FNA	Final approach
FPL	Filed flight plan (message type designator)
FPM	Feet per minute
FREQ	Frequency
FRI	Friday
FRNG	Firing
FRONT	Front (relating to weather)
FRQ	Frequent
FSL	Full stop landing
FSS	Flight service station
FST	First
FT	Feet (dimensional unit)
FU	Smoke
FZ	Freezing
FZDZ	Freezing drizzle
FZFG	Freezing fog
FZL	Freezing level
FZRA	Freezing rain

G

G/A	Ground-to-air
G/A/G	Ground-to-air and air-to-ground
GBAS	Ground Based Augmentation System
GCA	Ground control approach or ground controlled approach
GEN	General
GEO	Geographic or true
GLD	Glider
GMT	Greenwich mean time
GND	Ground
GNDCK	Ground check
GNSS	Global Navigation Satellite System

GP	Glide path
GPWS	Ground Proximity Warning System
GR	Hail
GRADU	Gradual or gradually
GRAS	Ground Based Regional Augmentation system
GRASS	Grass landing area
GRID	Processed meteorological data in the from of grid point values (in aeronautical meteorological office)
GRVL	Gravel
GS	Ground seed

H

H24	Continuous day and night service
HBN	Hazard beacon
HDG	Heading
HEL	Helicopter
HF	High frequency (3000 to 30000 kHz)
HGT	Height or height above
HJ	Sunrise to sunset
HLS	Helicopter landing site
HLDG	Holding
HN	Sunset to sunrise
HO	Service available to meet operational requirement
HOL	Holiday
HOSP	Hospital aircraft
HPA	Hectopascal
HR	Hours
HS	Service available during hours of scheduled operations
HURCN	Hurricane(s)
HX	No specific working hours
HZ	Hertz (cycles per second)
HZS	Horizontal surface

I

IAF	Initial approach fix
IAL	Instrument approach and landing
IAO	In and out of clouds
IAP	Instrument Approach Procedure
IAR	Intersection of air routes
IAS	Indicated air speed
IBN	Identification beacon
ICAO	International Civil Aviation Organisation
ICE	Icing
IDENT	Identification
IAF	Intermediate approach fix
IFF	Identification friend/foe
IFR	Instrument flight rules
IGA	International general aviation
ILS	Instrument landing system
IM	Inner marker
IMC	Instrument meteorological condition
IMPR	Improve or improving
IMT	Immediate or immediately
INA	Initial approach
INBD	Inbound
INC	In cloud
INCERFA	Uncertainty phase
INFO	Information
INOP	Inoperative
INP	If not possible
INPR	In progress
INS	Inches (dimensional unit)
INS	Inertial navigation system
INSTL	Install or installed or installation
INSTR	Instrument

INT	Intersection
INTER	Intermittent
INTL	International
INTRG	Interrogator
INTRP	Interrupt, interrupted or interruption
INTSF	Intensify or intensifying
INTST	Intensity
IR	Ice on runway
IRS	Inertial Reference System
ISA	International standard atmosphere
ISOL	Isolated

J

JAN	January
JTST	Jet stream
JUL	July
JUN	June

K

KG	kilogram(s)
KHZ	Kilohertz
KM	Kilometer(s)
KMH	Kilometer per hour
KPA	Kilopascal
KT	Knots
KW	Kilowatt

L

L	Left (runway identification)
L	Locator (see LM, LO)
LAN	Inland
LAT	Latitude

LB	Pounds (weight)
LCN	Load classification number
LDA	Landing distance available
LDG	Landing
LDI	Landing direction indicator
LEN	Length
LF	Low frequency (30 to 300 khz)
LGT	Light or lighting
LGTD	Lighted
LLZ	Localizer
LM	Locator, middle
LMT	Local mean time
LO	Locator, outer
LOC	Locally, location or located
LONG	Longitude
LORAN	LORAN (long range air navigation system)
LR	The last message received by me was.
LRG	Long range
LS	The last message sent by me was….
LSQ	Line squall
LTD	Limited
LTH	Light-intensity high
LTL	Light-intensity low
LTM	Light-intensity medium
LV	Light and variable (relating to wind)
LYR	Layer or layered

M

M	Meter
M	Mach Number (Followed by figures)
MAG	Magnetic
MAINT	Maintenance
MAP	Aeronautical maps and charts
MAPT	Missed approach point
MAR	March
MAR	At sea
MAX	Maximum
MAY	May
MB	Millibar
MDA	Minimum descent altitude
MDH	Minimum descent height
MEA	Minimum en-route altitude
METAR	Aviation routine weather report (in aeronautical meteorological code)
MF	Medium frequency 300 to 3000 khz
MHZ	Megahertz
MIFG	Shallow fog
MIL	Military
MIN	Minutes
MISC	Miscellaneous
MKR	Marker radio beacon
MNM	Minimum
MLS	Microwave landing system
MM	Middle marker
MNPS	Minimum Navigation Performance Specifications
MNPSA	Minimum Navigation Performance Specifications
MNT	Monitor or monitoring or monitored
MNTN	Maintain
MOC	Minimum obstacle clearance (required)
MOCA	Minimum obstacle clearance altitude

MOD	Moderate (used to qualify icing, turbulence, interference, or static reports)
MON	Above mountains
MON	Monday
MOV	Move or moving or movement
MPH	Statute miles per hour
MPS	Metres per second
MRG	Medium range
MRP	ATS/MET reporting points
MS	Minus
MSA	Minimum safe altitude
MSG	Message
MSL	Mean sea level
MT	Mountain
MTOF	Maximum Take-Off Weight
MTU	Metric units
MTW	Mountain waves
MWO	Meteorological watch office

N

N	North or northern latitude
NAV	Navigation
NB	North bound
NC	No change
NDB	Non-directional radio beacon
NE	North-east
NEG	Negative
NGT	Night
NIL	None or I have nothing to send
NM	Nautical miles
NML	Normal
NNNN	Connect to (……) stations (used in multiple transmission, followed by call sign of stations)

NNE	North north east
NNW	North north west
NOF	International NOTAM Office
NOSIG	No significant change (used in trend type landing forecast)
NOTAM	A notice containing information concerning the establishment, condition, or change, in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations
NOV	November
NPA	Non Precision Approach
NR	Number
NS	Nimbostratus
NSC	Nil Significant Cloud
NW	North west
NXT	Next

O

OAS	Obstacle assessment surface
OBS	Observe or observed or observation
OBSC	Obscure or obscured or obscuring
OBST	Obstacle
OBSTR	Obstruction
OCA	Obstacle Clearance Altitude
OCC	Occulting (light)
OCH	Obstacle Clearance Height
OCNL	Occasional or occasionally
OCS	Obstacle clearance surface
OCT	October
OK	We agree or it is correct
OM	Outer marker
OPA	Opaque, white type of ice formation
OPC	The control indicated is operational control
OPMA	Onboard Performance Monitoring and Alerting
OPMET	Operational meteorological (information)

OPN	Open or opened or opening
OPS	Operations
O/R	On request
ORD	Indication of an order
OTP	On top
OVC	Overcast

P

P	Prohibited area (followed by identification)
PANS	Procedures for air navigation services
PAPI	Precision approach Path indicator
PAR	Precision approach radar
PARL	Parallel
PAX	Passenger(s)
PCN	Pavement classification number
PELR	Personnel Licensing Requirements
PER	Performance
PERM	Permanent
PJE	Parachute jumping exercise
PLA	Practice low approach
PN	Prior notice required
PNR	Point of no return
PO	Dust devils
POB	Person on board
PPI	Plan position indicator
PPR	Prior permission required
PRKG	Parking
PROB	Probability
PROC	Procedure
PROV	Provisional
PS	Plus
PSG	Passing

PSN	Position
PVT	Private
PWR	Power

Q

QDM	Magnetic heading (zero wind)
QDR	Magnetic Bearing
QFE	Atmospheric pressure at aerodrome elevation (or runway threshold)
QFU	Magnetic orientation of runway
QNH	Altimeter sub-scale setting to obtain elevation when on the ground
QRF	Diversion
QTE	True bearing
QUAD	Quadrant

R

R	Restricted area (followed by identification)
R	Right (followed by runway identification)
RA	Rain
RA	Resolution Advisory
RAC	Rules of the air and Air Traffic Services
RAD	Radius
RAG	Ragged
RAI	Runway alignment indicator
RAPID	Rapid or rapidity
RASH	Rain and showers
RB	Read back
RB	Rescue boat
RCC	Rescue co-ordination center
RCF	Radio communication failure (message type designator)
RCL	Runway center line
RCP	Required Communication Performance
RDO	Radio

RDL	Radial
RE	Recent (used to qualify weather phenomena such as rain),e.g. recent rain = RERA
REC	Receive or receiver
REF	Reference to .. or refer to ….
REG	Registration
REILS	Runway end illumination light system
REP	Report or reporting or reporting point
REQ	Request or requested
RG	Range (lights)
RIF	Re-clearance in flight
RITE	Right (direction or turn)
RLCE	Request level change en-route)
RMK	Remark
RNAV	Area navigation
RNG	Radio range
RNP	Required Navigation Performance
ROBEX	Regional OPMET bulletin exchange (exchange)
ROC	Rate of climb
ROFOR	Route forecast (in aeronautical meteorological code)
RON	Received only
RPL	Repetitive flight plan
RPLC	Replace or replaced
RPS	Radar Position Symbol
RPT	Repeat or I repeat Indication of a request
RQMNTS	Requirements
RQP	Request flight plan (message type designator)
RR	Report reaching
RSC	Rescue Sub-Centre
RSR	En-route Surveillance Radar
RTE	Route
RTF	Radiotelephony

RTG	Radiotelegraph
RTN	Return OR Returned OR Returning
RV	Rescue vessel
RVR	Runway visual range
RWY	Runway

S

S	South or Southern Latitude
SA	Dust storm, sand storm, rising dust or rising sand
SALS	Simple Approach Lighting System
SAP	As soon as possible
SARPS	Standard and Recommended Practices (ICAO)
SAT	Saturday
SC	Stratocumulus
SCT	Scattered
STDBY	Stand by
SE	South East
SEC	Seconds
SELCAL	Selective calling system
SEP	September
SER	Service or Servicing or Serviced
SEV	Severe (use to qualify icing and turbulence reports)
SFC	Surface
SG	Snow Grains
SGL	Signal
SH	Showers
SHF	Super High Frequency (3000 to 30000 MHz)
SID	Standard Instrument Departure
SIF	Selective Identification Feature
SIGMET	Information concerning en-route weather phenomena which may affect the safety of aircraft operations
SIGWX	Significant weather

SIMUL	Simultaneous or Simultaneously
SIWL	Single Isolated Wheel Load
SKC	Sky Clear
SLW	Slow
SMC	Surface Movement Control
SMR	Surface Movement Radar
SN	Snow
SNOWTAM	A special series NOTAM notifying the presence or removal or hazardous conditions due to snow, ice, slush or standing water associated with snow, slush and ice on the movement area, by means of a specific format
SNSH	Snow Showers
SOC	Start of Climb
SPECI	Aviation selected special weather report (in aeronautical meteorological code
SPECIAL	Special meteorological report (in abbreviated plain language)
SPL	Supplementary flight plan (message type designator)
SPOT	Spot wind
SQ	Squall
SR	Sunrise
SRA	Surveillance Radar Approach
SRE	Surveillance Radar Element of precision approach radar system
SRG	Short range
SRR	Search and rescue region
SS	Sunset
SSB	Single side band
SSE	South South East
SSR	Secondary Surveillance Radar
SST	Supersonic transport
SSW	South South West
ST	Stratus
STA	Straight in approach
STAR	Standard (Instrument) Arrival
STN	Station

STNR	Stationary
STOL	Short Take-Off and Landing
STS	Status
SUBJ	Subject to
SUN	Sunday
SUP	Supplement (AIP Supplement)
SUPPS	Regional supplementary procedures
SVC	Service message
SVCBL	Serviceable
SVFR	Special Visual Flight Rules
SW	South West
SWY	Stop way

T

T	Temperature
TA	Transmission altitude
TACAN	UHF Tactical Air Navigation Aid
TAF	Aerodrome forecast
TAR	Terminal Area Surveillance Radar
TAS	True Airspeed
TAX	Taxi or taxiing
TC	Tropical Cyclone
TCAS	Traffic Alert and Collision Avoidance System
TCU	Towering Cumulus
TDO	Tornado
TDZ	Touch Down Zone
TECR	Technical Reason
TEMPO	Temporary or Temporarily
TFC	Traffic
TGL	Touch-and-Go Landing
TGS	Taxiing Guidance System
THR	Threshold

THRU	Through
THU	Thursday
TIL	Until
TKOF	Take-off
TMA	Terminal control area
TO	To …. (place)
TOC	Top of climb
TODA	Take-Off Distance Available
TOP	Top of Cloud
TORA	Take-Off Runway Available
TP	Turning Point
TR	Track
TRA	Temporary Reserved Airspace
TRANS	Transmit or Transmitter
TS	Thunderstorm
TSGR	Thunderstorm with hail
TSSA	Thunderstorm with dust storm or sandstorm
TT	Teletypewriter
TUE	Tuesday
TURB	Turbulence
TVOR	Terminal VOR
TWR	Aerodrome control tower
TWY	Taxiway
TWYL	Taxiway Link
TXT	Text
TYP	Type of aircraft
TYPH	Typhoon

U

UAB	Until Advised By …….
UAC	Upper Area Control Center
UAR	Upper Air Route

UDF	Ultra High Frequency Direction Finding System
UFN	Until Further Notice
UHF	Ultra High Frequency
ULR	Ultra Long Range
UNA	Unable
UNL	Unlimited
UNREL	Unreliable
U/S	Unserviceable
UTA	Upper Control Area
UTC	Co-ordinated Universal Time

V

V	Cleared over a reporting point
VAL	In valleys
VAR	Magnetic variation
VASIS	Visual Approach Slope Indicator System
VDF	Very High Frequency Direction Finding Station
VER	Vertical
VFR	Visual Flight Rules
VHF	Very High Frequency (30 to 300 MHz)
VIP	Very Important Persons
VIS	Visibility
VLF	Very Low Frequency
VLR	Very Long Range
VMC	Visual Meteorological Conditions
VOLMET	Meteorological information for aircraft in flight
VOR	Very High Frequency Omni directional Radio Range
VORTAC	VOR and TACAN combination
VOT	VOR airborne equipment test facility
VRB	Variable
VSA	By visual reference to the ground
VSP	Vertical speed
VTOL	Vertical Take-Off and Landing

W

W	West or Western longitude
WAC	World Aeronautical Chart ICAO 1:1000 000
WDI	Wind Direction Indicator
WDSPR	Widespread
WED	Wednesday
WEF	With Effect From or Effective From
WI	Within
WID	Width or Wide
WIE	With Immediate Effect or Effective Immediately
WIP	Work In Progress
WKN	Weaken or Weakening
WNW	West North West
WPT	Way-point
WRNG	Warning
WS	Wind Shear
WSW	West South West
WX	Weather

X

X	Cross
XBAR	Crossbar (of approach landing system)
XS	Atmospheric
XX	Heavy (used to quality weather phenomena such as rain, e.g. heavy rain - XXRA)

Y

YD	Yards
YES	Yes (affirmative)
YR	Your

Z

Z	Coordinated Universal Time (in meteorological messages)

Chapter 2

Procedures for AFIS

2.1 General

2.1.1 AFIS units shall issue information to aircraft in its area of responsibility to achieve a safe, orderly and expeditious flow of air traffic on and in the vicinity of an aerodrome with the object of assisting pilots in preventing collision(s) between:

a) aircraft flying within the designated area of responsibility of the AFIS unit, including the aerodrome traffic circuits;

b) aircraft operating on the manoeuvring area;

c) aircraft landing and taking off;

d) aircraft and vehicles operating on the manoeuvring area;

e) aircraft on the manoeuvring area and obstructions on that area.

2.1.2 ATS Personnel shall maintain a continuous watch by visual observation and subject to conditions prescribed by ANSP, on all flight operations on and in the vicinity of an aerodrome as well as vehicles and personnel on the manoeuvring area.

2.2 Selection of runway

2.2.1 The term “Preferred runway” shall be used to indicate the runway or runways that, at a particular time, are considered by the AFIS unit to be the most suitable for use by the types of aircraft expected to land or take off at the aerodrome.

2.2.2 Normally, an aircraft will land and take off into wind unless safety, the runway configuration, meteorological conditions and available instrument approach procedures or air traffic conditions determine that a different direction is preferable. In selecting the runway; however, the unit providing AFIS shall 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.

2.2.3 A pilot-in-command can refuse a runway-in-use suggested by an ATS Personnel. In such circumstances, ATS Personnel shall provide detailed information on other local traffic that is utilizing the runway-in-use to assist the pilot in ensuring that safe spacing is maintained when using an alternative runway.

2.3 Initial call to AFIS

2.3.1 For aircraft being provided with aerodrome flight information service, the initial call shall contain:

a) designation of the station being called;

b) call sign, type of aircraft and, for aircraft in the heavy wake turbulence category, the word "HEAVY";

c) position;

d) level;

e) intentions; and

f) additional elements, as required

2.4 Traffic information to aircraft

a) Aircraft identification

b) Aircraft type

c) The route and ETA of aircraft at next position.

d) The last position report received from the aircraft

e) Intention of the pilot in command

f) The aircraft take off direction, initial track and intended cruising altitude or flight level

g) The direction of intended landing.

2.4.1 Traffic information will be provided by appropriate ATS personnel under following conditions :

a) To a pilot in command having responsibility for separation to enable him to determine visually the position of another aircraft and take action to avoid collision

b) When , through emergency or other case, aircraft are operating with less then the prescribed separation minima.

c) When aircraft will be leaving controlled airspace and entering uncontrolled airspace and it is known that other aircraft is operating in proximity to the boundary and the intended path of the aircraft.

d) When requested by the pilot in command of an aircraft.

Note : As traffic information may be based on data of doubtful accuracy and completeness and as it may be subject to communication delay, this does not relieve the pilot in command of an aircraft of his responsibilities of avoiding collision hazards

2.5 Essential Local traffic information

2.5.1 Information on essential local traffic shall be issued in a timely manner, either directly or through other ATS unit when, in the judgment of the AFIS Personnel, such information is necessary in the interests of safety, or when requested by aircraft.

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

2.5.3 Essential local traffic shall be described so as to be easily identified.

2.6 Runway free

2.6.1 ATS Personnel shall provide information to departing and arriving aircraft that the runway is free when no aircraft, vehicles or other obstructions are on the runway or closer to the runway than a distance specified in 3.6.1

2.7 Wake turbulence

2.7.1 The responsibility for wake turbulence avoidance rests entirely with the pilot-in-command. AFIS units shall, to the extent practicable, advise aircraft of the expected occurrence of hazards caused by turbulent wake. Such information will be provided by the warning 'caution wake turbulence' and may also include relevant information on the aircraft
concerned.

Note.— Occurrence of turbulent wake hazards cannot be accurately predicted and AFIS units cannot assume responsibility for the issuance of advice on such hazards at all times, nor for its accuracy.

2.7.2 In providing information, AFIS units shall take into account the hazards caused by helicopter downwash turbulence and 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.

Note.— helicopter downwash turbulence and propeller slipstream can produce localized wind velocities of sufficient strength to cause damage to otheraircraft, vehicles and personnel operating within the affected area. Further guidance on thes effects are contained in the ICAO Air Traffic Services Planning Manual (Doc 9426), Part II, Section 5, Chapter 3.

2.8 Essential information on aerodrome conditions

2.8.1 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 must be confined to runways, that fact shall be considered as essential aerodrome information to any aircraft not familiar with the aerodrome.

2.8.2 Essential information on aerodrome conditions shall include information relating to the following:

a) construction or maintenance work on, or immediately adjacent to the movement area;

b) rough or broken surfaces on a runway, a taxiway or an apron, whether marked or not;

c) snow, slush or ice on a runway, a taxiway or an apron;

d) water on a runway, a taxiway or an apron;

e) snow banks or drifts adjacent to a runway, a taxiway or an apron;

f) other temporary hazards, including parked aircraft and birds on the ground or in the air;

g) failure or irregular operation of part or all of the aerodrome lighting system;

h) any other pertinent information.

2.8.3 Essential information on aerodrome conditions shall 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. The information shall be given in sufficient time for the aircraft to make proper use of it, and the hazards shall be identified as distinctly as possible.

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

2.8.4 When a not previously notified condition pertaining to the safe use by aircraft of the manoeuvring area is reported to or observed by the AFIS unit, the appropriate aerodrome
authority shall be informed and operations on that part of the manoeuvring area terminated until otherwise advised by the appropriate aerodrome authority.

2.9 Abnormal aircraft configuration and condition

2.9.1 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 AFIS unit, the aircraft concerned shall be advised without delay.

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

2.10 Air traffic incidents

2.10.1 An air traffic incident report shall be submitted, normally to the ATS unit concerned, for incidents specifically related to the provision of air traffic services involving such occurrences as aircraft proximity (AIRPROX), or other serious difficulty resulting in a hazard to aircraft, caused by, among others, faulty procedures, non-compliance with procedures, or failure of ground facilities. The report shall be recorded on the air traffic incident report form as per Appendix B and Appendix C .

2.11 Information related to the operation of aircraft -departing traffic

2.11.1 Prior to start up for takeoff, the flight crew shall advise AFIS unit of the following elements of flight plan information if flight plan is not submitted in written form:

a. Call Sign or Identification of Aircraft

b. Type of Aircraft

c. Destination

d. Intended level

e. EET or flight time

f. Fuel endurance

g. Persons On-Board (POB)

h. Alternate aerodrome

i. Pilot in command

2.11.2 Upon receiving such information as mentioned in 2.11.1, the AFIS unit shall advice the following elements of information in the order listed,

a) Preferred runway;

b) The surface wind direction and speed, including significant variations;

c) The QNH altimeter setting;

d) The air temperature for the runway to be used, in case of turbine engine aircraft;

e) The visibility representative of the direction of take off and initial climb, if less than 10km;

f) The correct time.

Note1. Significant changes in surface wind information are:

- *Mean head-wind component: 19 km/h (10 kt)*

- *Mean tail-wind component: 4 km/h (2 kt)*
- *Mean cross-wind component: 9 km/h (5 kt)*

Note2. If local QNH is faulty or unavailable, Kathmandu QNH shall be provided.

Note3. The visibility provided by the AFIS units is the visibility observed and determined by the ATS Personnel as per the established visibility reference chart.

2.12 Aerodrome and meteorological information

2.12.1 Prior to taxiing for take-off, aircraft shall be advised of the following elements of information, in the order listed, with the exception of such elements which it is known the aircraft has already received:

a) the runway to be used;

b) the surface wind direction and speed, including significant variations there from;

c) the QNH altimeter setting and, either on a regular basis in accordance with local arrangements or if so requested by the aircraft, the QFE altimeter setting;

d) the air temperature for the runway to be used, in the case of turbine-engined aircraft;

e) the visibility representative of the direction of take-off and initial climb, if less than 10 km

f) the correct time.

2.12.2 Prior to take-off aircraft shall be advised of:

a) any significant changes in the surface wind direction and speed, the air temperature, and the visibility .

b) significant meteorological conditions in the take-off and climb-out area,

except when it is known that the information has already been received by the aircraft.

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, severe mountain waves, sandstorm, dust storm, blowing snow, tornado or waterspout in the take-off and climb-out area.

2.13 Information related to the operation of aircraft -arriving traffic

2.13.1 Arriving aircraft, at first contact, shall report following information to the AFIS unit .

a) point of departure

b) present position and level

c) intended descending level

d) EST/ETA

e) Other information useful for safe and efficient conduct of flight

e.g. 9N-ABP FROM KATHMANDU,POSITION LAMJURA LEVEL 13500FT DESCENDING TO 10500FT,ETA LUKLA 0315.

2.13.2 Prior to entering the traffic circuit or commencing its approach to land, an aircraft shall be provided with the following elements of information, in the order listed:

a) the preferred runway

b) the surface wind direction and speed, including significant variations

c) the QNH altimeter setting

d) the air temperature

e) other information useful for the safe and efficient conduct of flight

2.14 Coordination between air traffic control (ATC) and AFIS

2.14.1 General

2.14.1.1 Where necessary, letters of agreement shall be developed between the appropriate ATC unit and the AFIS unit for the control of arriving and departing aircraft.

2.14.2 Transferring unit shall supply all necessary information to accepting unit such as :

a) A/C Call sign

b) Type of aircraft

c) Departure point

d) Route

e) Level of A/C and changes of level there to

f) ETA as and when required

g) Destination

h) Any other pertinent information

2.14.3 Coordination shall be effected at the earliest after the departure of A/C but not later than 3 minutes of the departure time of A/C

2.14.4 When the AFIS unit has received an ETA/DEP for an arriving aircraft, it shall provide the ATC unit with information about known traffic which the arriving aircraft shall be aware of before transfer of communication to the AFIS unit.The information shall be provided in such a time as being relevant and shall be revised as necessary. The ATC unit shall relay the information to the arriving aircraft.

2.15 Read-back of clearance

2.15.1 When relaying ATC clearances, the ATS Personnel shall ensure that the flight crew reads back the safety-related parts of ATC clearances and instructions which are transmitted by voice. The following items shall always be read back:

a) ATC route clearances; and

b) runway-in-use, altimeter settings, SSR codes, level instructions, heading and speed instructions and, whether issued by the ATS unit or contained in automatic terminal information service (ATIS) broadcasts, transition levels.

Note.— If the level of an aircraft is reported in relation to standard pressure 1 013.2 hPa, the words "FLIGHT LEVEL" precede the level figures. If the level of the aircraft is reported in relation to QNH/QFE, the figures are followed by the word "METRES" or "FEET", as appropriate.

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

2.16 Altimeter setting procedures

Basic Altimeter Setting Procedures

General

2.16.1 The system of altimetry in Kathmandu FIR (VNSM) makes use of a transition layer to separate aircraft using QNH from those using 1013.2 hPa. The transition layer for Kathmandu FIR is between a transition altitude of 13500 ft. and a transition level of FL 150. Cruising within the transition layer is not permitted.

2.16.2. Vertical positioning of aircraft when at or below the transition altitude is expressed in terms of altitude, whereas such positioning at or above the transition level is expressed in terms of flight levels. While passing through the transition layer, vertical positioning is expressed in terms of altitude when descending and in terms of flight levels while ascending.

2.16.3. The change from QNH to 1013.2 hPa will be made on climbing through the transition altitude. During descent the change from 1013.2 hPa to QNH will be made at thetransition level.

2.16.4. Flight level zero is located at the atmospheric pressure level of 1013.2 hPa (29.92in). Consecutive flight levels are separated by a pressure interval corresponding to 500 ft (152.5m) in the standard atmosphere.

Note.- Examples of the relationship between flight levels and altimeter indications are given in the following table, the metric equivalents being approximate:

Flight Level	Altimeter indication	
Number	Feet	Meters
150	15000	4550
200	20000	6100
250	25000	7620

2.17. Take-off and Climb

2.17.1. Vertical positioning of aircraft during climb is expressed in terms of altitudes until reaching the transition altitude, above which vertical positioning is expressed in terms of flight levels.

CHAPTER 3

Aerodrome traffic

3.1 General

3.1.1 As the view from the flight deck of an aircraft is normally restricted, the AFIS unit shall ensure that information which require the flight crew to employ visual detection, recognition and observation are phrased in a clear, concise and complete manner.

3.2 Authorization of flight into AFIS aerodromes

3.2.1 IFR flight shall not be permitted to operate at AFIS aerodromes.

3.2.2 No VFR flight shall take off or land at any AFIS aerodrome or enter the aerodrome traffic circuit within the Kathmandu FIR, if

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

b. the ground visibility is less than 5000m. for fixed wing and 1000m. for helicopter.

3.2.3 AFIS personnel on duty Aerodrome in-charge of Civil Aviation may declare runway closure in the following cases:

a. runway condition is not suitable for the aircraft operation due to rain, mud, snow and /or slush; or

b. the ceiling is less than 450 m (1500 ft) or when the ground visibility is less than 5000m. for the fixed wing aircraft and 1000m. for helicopter; or

c. when tailwind exceeds 10 KTS at STOL aerodromes.

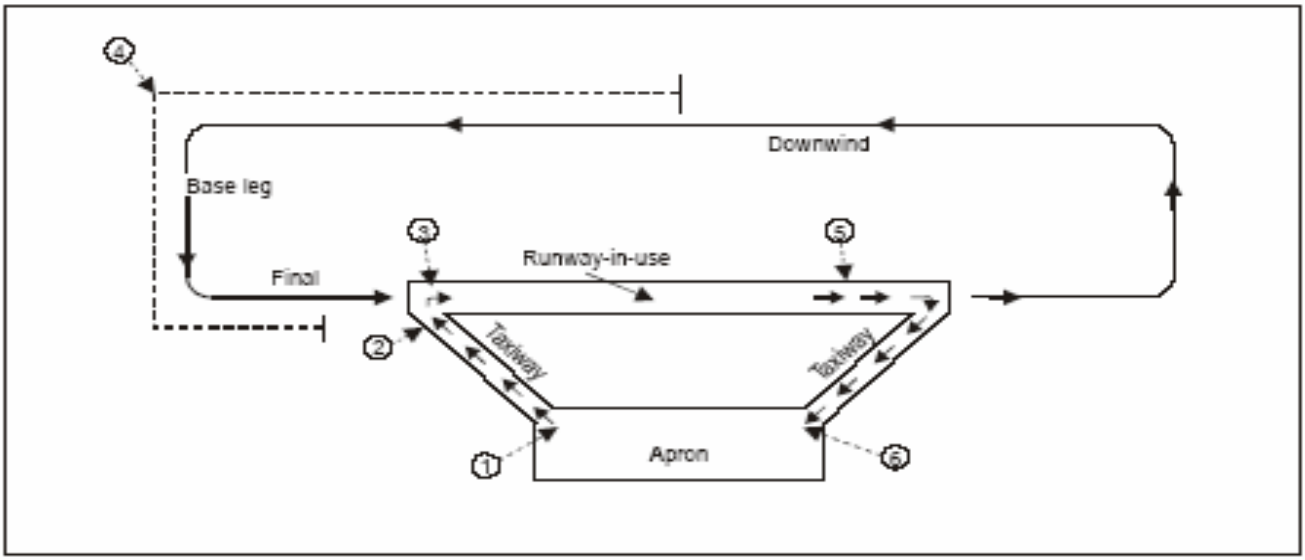
3.3 Selection of preferred Runway

3.3.1 The term "preferred runway" shall be used to indicate the most suitable runway at a particular time, taking into account the current surface wind direction and speed and other relevant factors such as the traffic circuit and the runway used by other aircraft, with the intention of establishing and maintaining an orderly flow of aerodrome traffic.

Note: If the preferred runway is not considered suitable for the operation involved, the flight crew may use another runway ensuring separation from other aircraft or alternatively, may hold until the relevant traffic no longer exits.

3.4 Designated positions of aircraft in the aerodrome traffic and taxi circuits

The following positions of aircraft in the traffic and taxi circuits are the positions where the aircraft normally advise their position and intention to AFIS unit. The aircraft shall be watched closely as they approach these positions so that proper and adequate information may be issued without delay. Where practicable, all information and advisories shall be issued without waiting for the aircraft to initiate the call.



Designated positions of aircraft from a visual room viewpoint

Note: Visual room is the place from where AFIS Personnel provides relevant ATS. It is the place which is commonly understood as tower in general term.

Position 1-*(on apron/parking area).* Aircraft passes flight details prior to start up and taxi for departure. Aerodrome Information and traffic information are given.

Note: Where runway holding position is not designated or distinctly clear from runway edge, the departing aircraft will hold at this position.

Position 2 - *(at runway holding position).* Unless position1 is more suitable owing to current traffic, the aircraft will normally hold at this position. Engine run-up will, when required, normally be performed here. ATC clearance issued by the appropriate ATC unit will normally be relayed at this stage at the latest.

Position 3- (at line-up position on runway). Current surface wind information and runway clear (free) information are issued here, if not practicable at position 2.

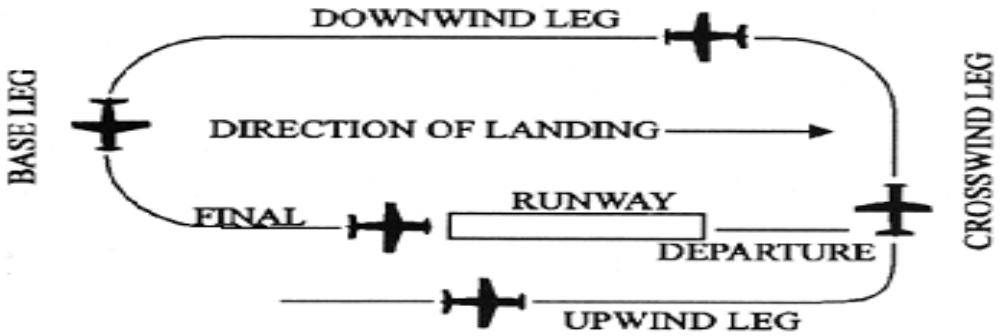
Position 4-(on downwind or base leg or final). Current surface wind information and runway

clear (free) information are issued here for landing traffic as practicable.

Position 5-(on runway after landing). Aircraft informs taxi to apron here, if necessary.

Position 6-(during in-taxiing). Parking and other information are advised to aircraft here, if necessary.

3.5 Components of an aerodrome Traffic Circuit



Note: *This diagram is intended only to illustrate terminology used in identifying various components of a traffic circuit. It shall not be used as a reference or guide on how to enter a traffic circuit.*

The following terminology for the various components of a traffic *circuit* has been adopted as standard for use by AFIS unit and pilots:

1. Downwind leg.

A flight path parallel to the landing runway in the opposite direction of landing.

2. Base leg.

A flight path at right angles to the landing runway off its approach end and extending from the downwind leg to the intersection of the extended runway centerline

3. Final

A flight path in the direction of landing along the extended runway centerline from the base leg to the runway.

3.6 Traffic on the manoeuvring area

3.6.1 Taxiing aircraft

3.6.1.1 On receiving information that an aircraft is about to taxi, the AFIS unit shall

determine where the aircraft concerned is parked. Relevant information on local traffic and aerodrome conditions shall be provided to assist the flight crew in selecting taxi routes to avoid collision with other aircraft or objects.

3.6.1.2 Taxiing on a runway

3.6.1.2.1 If the AFIS unit is unable to determine that a vacating or crossing aircraft has cleared the runway, the aircraft shall be requested to report when it has vacated the runway. The report shall be made when the entire aircraft is beyond the relevant runway-holding position.

3.6.1.3 Helicopter taxiing operations

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

3.6.1.3.2 A frequency change shall not be issued to single-pilot helicopters hovering or air-taxiing. Whenever possible, the relay of control instructions from the ATS unit shall be delayed as necessary until the pilot is able to change frequency.

Note.— Most light helicopters are flown by one pilot and require the constant use of both hands and feet to maintain control during low-altitude/low-level flight. Although flight control friction devices assist the pilot, changing frequency near the ground could result in inadvertent ground contact and consequent loss of control.

3.6.1.4 Communication requirements and visual signals

3.6.1.4.1 At AFIS aerodromes all vehicles employed on the manoeuvring area shall be capable of maintaining two-way radio-communication with the AFIS unit, except when the vehicle is only occasionally used on the manoeuvring 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 AFIS unit.

3.6.1.4.2 When communications by a system of visual signals is deemed to be adequate, or in the case of radio-communication failure, the signals given hereunder shall have the meaning indicated therein:

Light signal from AFIS unit	Meaning
Green flashes	Permission to cross landing area or to move onto taxiway
Steady red	Stop
Red flashes	Move off the landing area or taxiway and watch out for aircraft
White flashes	Vacate manoeuvring area in accordance with local instructions

3.6.1.4.3 In emergency the signal given hereunder shall be used for runways or taxiways equipped with a lighting system and shall have the meaning indicated therein.

Light signal	Meaning
Flashing runway or taxiway lights	Vacate the runway and observe the tower for light signal

3.6.1.4.4 When employed in accordance with a plan prearranged with the AFIS unit, constructional and maintenance personnel shall not normally be required to be capable of maintaining two-way radio-communication with the AFIS unit.

3.6.1.4.5 Holding Position

3.6.1.4.5.1 Departing aircraft shall hold position at runway holding positions. Where runway-holding positions are not designated, aircraft shall not hold closer than:

a) 50m from the runway edge, where runway length is 900m or more;

b) 30m from the runway edge, where runway length is less than 900m.

3.6.1.4.5.2 Departing and landing Pilots shall exercise great caution at aerodromes where there are neither the designated runway holding positions nor the minima as mentioned in 4.5.1 can be achieved.

3.6.1.4.5.3 Aircraft shall not line up and hold on the approach end of a runway whenever another aircraft is making a landing, until the landing aircraft has passed the point of intended holding.

3.7 Control of ground vehicles and personnel

3.7.1 Entry to the manoeuvring area

The movement of persons or vehicles including towed aircraft on the manoeuvring area shall be subject to authorization by the AFIS unit. Persons, including drivers of all vehicles, shall be required to obtain authorization from the AFIS unit before entry to the manoeuvring area. Notwithstanding such an authorization, entry to a runway or runway strip or change in the operation authorized shall be subject to a further specific authorization by the AFIS unit.

3.7.2 Priority on the manoeuvring area

3.7.2.1 All vehicles and persons shall give way to aircraft which are landing, taxiing or taking off, except that emergency vehicles proceeding to the assistance of an aircraft in distress shall be afforded priority over all other surface movement traffic. In the latter case, all movement of surface traffic shall, to the extent practicable, be halted until it is determined that the progress of the emergency vehicles will not be impeded.

3.7.2.2 When an aircraft is landing or taking off, vehicles shall 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.

3.8 Handling of Traffic in the Traffic Circuit

3.8.1 The aerodrome and traffic information shall be issued to the traffic entering traffic circuit depending on the circumstances and traffic conditions, an aircraft may join at any position in the traffic circuit.

In cases of emergency it may be necessary, in the interests of safety, for an aircraft to enter a traffic circuit and make a landing without informing or proper authorization. ATS Personnel shall recognize the possibilities of emergency action and render all assistance possible. If circumstances warrant, aircraft which are in contact with the ATS Personnel may be requested to give way so as to remove, as soon as possible, the hazard introduced by such operation.

3.8.2 Priority for landing
Priority shall be given to:

a) an aircraft which anticipates being compelled to land because of factors affecting the safe operation of the aircraft (engine failure, shortage of fuel, etc.);

b) hospital aircraft or aircraft carrying any sick or seriously injured persons requiring urgent medical attention;

c) aircraft engaged in search and rescue operations; and

d) other aircraft as may be prioritized by the CAAN.

3.9 Order of priority for arriving and departing aircraft

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

3.10 Handling of departing traffic

3.10.1 Take-off

3.10.1.1 ATS personnel shall provide relevant information on local traffic and aerodrome conditions to assist the flight crew to decide when to take-off. Such information shall be updated at ATS Personnel discretion or when requested by the pilot. Pilots shall inform ATS Personnel units of their intentions, e.g. 'holding', 'lining up', 'taking off'. Pilots shall not take off if there are other aircraft on the runway.

3.10.1.2 When an ATC clearance is required prior to take-off, the AFIS unit shall not issue "runway free" information until the ATC clearance has been transmitted to and acknowledged by the aircraft concerned. The ATC clearance shall be forwarded to the aircraft with the least possible delay after receipt of a request made or prior to such request if practicable.

3.10.1.3 Subject to 3.10.1.2, the "runway free" information shall be transmitted when the

aircraft is ready for take-off and at or approaching the departure runway, and the traffic situation permits.

3.10.2 Departure sequence

3.10.2.1 Departures shall normally take place in the order in which they are ready for departure. However, an ATS Personnel may initiate deviations from this to facilitate departures of faster moving aircraft following the same route or to facilitate aircraft which shall be afforded priority.

3.10.3 Separation of departing aircraft

3.10.3.1 Departing aircraft will not normally commence take-off until the preceding departing aircraft has crossed the end of the departure runway or has started a turn or until all preceding landing aircraft are clear of the runway

3.10.3.2 The runway clear (free) information shall be issued when the aircraft is ready for departure and at or approaching the landing runway. However, it does not ensure traffic separation.

3.10.3.3 It is the responsibility of flight crews to ensure that the separation when the aircraft commences take-off.

3.10.4 Clearance

3.10.4.1 Clearances received from other ATS units to aircraft (e.g. from the associated FIC or ACC) shall be relayed at the time of issuing aerodrome information.

3.10.4.2 The ATS Personnel shall ensure that the aircraft has received and understood such clearances by requiring pilots to read back clearance.

Note: When an ATS Personnel uses words "Runway clear (or Free)", it denotes that in his/her opinion no aircraft or vehicle or pedestrian is occupying the runway at the time of transmission. A great caution shall be exercised by flight crews at aerodromes where runway or landing area is not distinctly separated from other part of the movement area despite the "runway clear (or free)" being received from AFIS unit.

3.10.5 Aircraft reporting

3.10.5.1 In order to keep the AFIS unit continuously informed on the traffic situation and enable the unit to provide correct and current information to other aircraft, it is essential that every departing aircraft reports its intentions and manoeuvres to the extent applicable, as specified below.

3.10.5.2 A departing aircraft shall report:

a) Start-up and taxi intention for departure;

b) selected runway if other than preferred runway advised by AFIS unit and, when applicable, runway-holding position;

c) intended route or track after take-off, including intention, if any, to make right turn after take-off.

d) lining up on the runway for departure;

e) ready for departure;

f) any other intention, manoeuvre or action that could affect other traffic.

3.11 Handling of Arriving Aircraft

3.11.1 Arriving aircraft

3.11.1.1 Pilots shall not land if there are other aircraft on the runway. ATS Personnel shall provide relevant information on local traffic and aerodrome conditions to assist the flight crew in deciding whether to land or go-around. Such information shall be updated at ATS Personnel discretion or when requested by the pilot.

3.11.1.2 A landing aircraft shall not normally be informed that the runway is free 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 have vacated the runway-in-use.

3.11.2 **Separation of landing aircraft and preceding landing and departing aircraft**

using the same runway

3.11.2.1 Landing aircraft will not normally cross the runway threshold on its final approach 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.

Position limits to be reached by a landed aircraft (A) or a departing aircraft (B or C) before an arriving aircraft may cross the threshold of the runway-in-use in the landing phase

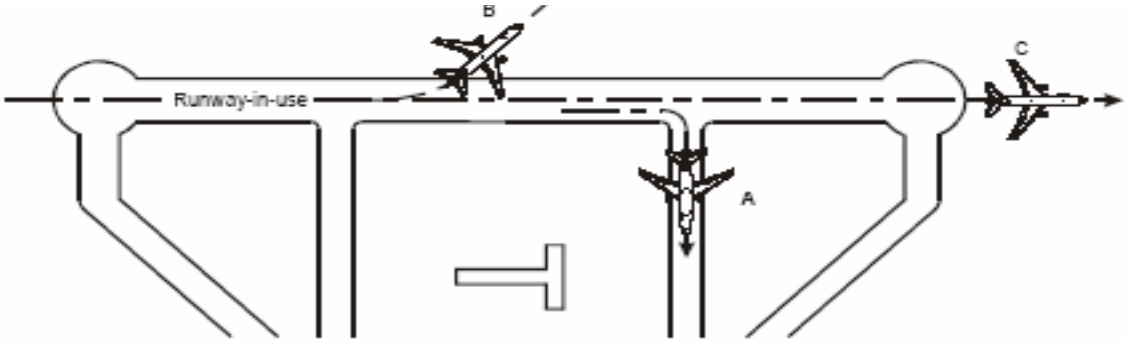


Fig. separation between departing and arriving aircraft.

Note : It is the responsibility of flight crew to ensure separation as mentioned 3.11.2.

3.11.2.2 An aircraft may be advised runway clear (free) when the aircraft enters or about to enter the traffic circuit. However, it does not ensure traffic separation.

3.11.2.3 It is the responsibility of flight crews to ensure that the separation in accordance with 3.18.1.1 will exist when the aircraft commences take-off.

3.11.3 Aircraft reporting

In order to keep the AFIS unit continuously informed on the traffic situation and enable the unit to provide correct and current information to other aircraft, it is essential that every arriving aircraft reports its intentions and manoeuvres to the extent applicable, as specified below:

3.11.3.1 An arriving aircraft shall report:

a) position, level and estimated time of arrival at the aerodrome or at a navigational aid situated close to the aerodrome;

b) preferred runway if other than the runway advised by AFIS unit.

c) intention, if any, to enter right-hand traffic circuit; normally, a left-hand circuit shall

be made;

d) Making ,entering and leaving a visual hold;

e) entering the traffic circuit;

f) the arrival over, or passing significant positions;

g) turning on to base leg or final approach;

h) taxiing to apron or parking area after landing;

i) going around; and/or

j) any other intention, manoeuvre or action that could affect other traffic;

h) Any abnormalities

3.12 Direct pilot to pilot communication procedure

Whenever considered advantageous or necessary two or more aircraft may establish direct pilot to pilot radio communication to inform each other about their intentions and coordinate their operations to prevent collision. Such radio communication shall be informed to AFIS unit if such information is related to safe conduct of flight.

3.13 Runway incursion or obstructed runway

3.14.1 In the event the ATS personnel 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 shall be taken to inform the aircraft of the runway incursion or obstruction and its location in relation to the runway.

Note.— Animals and flocks of birds may constitute an obstruction with regard to runway operations. In addition, an aborted take-off or a go-around executed after touchdown may expose the aeroplane to the risk of overrunning the runway. Moreover, a low altitude missed approach may expose the aeroplane to the risk of a tail strike. Pilots may, therefore, have to exercise their judgment in accordance with CAR 2, 2.4, concerning the authority of the pilot-in-command of an aircraft.

3.14.2 Pilots and ATS personnel shall report any occurrence involving an obstruction on the runway or a runway incursion. The report may be recorded on the ICAO Model Runway Incursion Initial Report Form (See Appendix ……).

3.14 Monitoring of visual aids

3.15.1 ATS personnel shall make use of automatic monitoring facilities, when provided, to ascertain whether the lighting is in good order and functioning according to selection.

3.15.2 In the absence of an automatic monitoring system or to supplementsucha system, the ATS personnel shall visually observe such lighting as can be seen from the 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.

3.15.3 On receipt of information indicating a lighting fault, the ATS personnel shall take such action as is warranted to safeguard any affected aircraft or vehicles, and initiate action to have the fault rectified.

Chapter 4

AFIS Requirement

4.1 AFIS Requirements For Information

4.1.1 AFIS units shall, to the extent possible, be supplied with the same information as that provided to aerodrome control towers.

4.2 Meteorological information

4.2. AFIS units shall supply with up-to-date information on existing and forecast meteorological conditions as necessary for the performance of t h e i r functions.

4.2.1. AFIS u n i t s shall be supplied with current meteorological reports and forecasts for the aerodrome with which they are concerned. Special reports and amendments to forecast shall be communicated to the AFIS units as soon as they are necessary in accordance with established criteria, without waiting for the next routine report or forecast.

4.2.2 AFIS units shall be provided with current pressure data for setting altimeters for the aerodrome concerned.

4.2.3. AFIS units shall he equipped with surface wind indicator(s). The indicator(s) shall be related t o the same location(s) of observation and be fed from the same anemometer(s) as the corresponding indicator(s) in the meteorological station, where such a station exists. Where m u l t i p l e anemometers are used, the indicators to which they are related shall be clearly marked to identify the runway and section of the runway monitored by each anemometer,

4.3 Information on aerodrome conditions and the operational status of associated facilities :

4.3.1. AFIS units shall be kept currently informed of the conditions of the manoeuvring area, Including the existence of temporary hazards, and the operational *status* of any associated facilities at the aerodrome with which *they* are concerned,

4.4 Information on the operational status of navigation aids

4.4.1 AFIS units shall be kept currently informed *of* the operational *status* of non-visual navigation aids, and those visual aids essential for surface movement, take-off, departure, approach and landing procedures within their area of responsibility.

4.5 Information on unmanned free balloons

4.5.1. AFIS units shall be kept informed of details of flights of unmanned free balloons in accordance with *the* provisions contained in CAR 2.

4.6 AFIS Requirements For Communications

4.6.1 Aeronaut mobile service (air-ground communications)

4.6.1. Air-ground communication facilities shall enable direct, rapid, continuous and static-free two-way communications to take place between an AFIS unit and appropriately equipped aircraft operating at any distance within 45km (25 *NM)* of the AFIS aerodrome concerned.

4.6.2 When direct two-way radiotelephony is used for the provision of aerodrome flight information service, recording facilities shall be provided on all such air-ground communication channels.

4.6.3. Aircraft shall be capable of two-way communication with the AFIS unit on the prescribed frequency or frequencies.

4.7 Aeronautical fixed service :

4.7.1 An AFIS unit, in addition to being connected to the flight information centre, the area control centre (ACC) and the approach control unit as applicable, shall have facilities for communications with the associated air traffic services reporting office, when separately be established.

4.7.2. All facilities for direct speech communication between an AFIS unit and air traffic services units shall be provided with recording facilities.

4.7.3. In order that pilots may readily identify the status of the service they are receiving the call sign ”aerodrome information” following the name of the aerodrome shall be used in aeronautical mobile communications to identify a unit providing AFIS e.g Lukla Aerodrome Information. This will avoid any possible confusion with a unit providing aerodrome control service which is identified by the call sign “tower”.

The word “aerodrome” may be deleted after initial contact has been established. If at any time it is apparent that the pilot is not aware that aerodrome control service is not provided, the pilot shall immediately be informed of this fact using the following phraseology: AERODROME CONTROL SERVICE NOT PROVIDED.

4.7.4. The existing phraseology in the MATS chapter 12 (PANS-ATM), part IX may be used by an AFIS unit, where appropriate, to pass information to an aircraft.

4.8. Accommodation And Equipment

AFIS shall be provided from a location which ensures the best possible view of the aerodrome, the surrounding area and, in particular, the manoeuvring area, e.g. a control tower, or a room facing the aerodrome and at least the approach ends of the runway, with large, unobstructed windows.

The equipment in the AFIS unit shall, to the extent possible, be similar to the equipment

required for the aerodrome control tower at an aerodrome with low traffic density.

4.9 Visual ground signals

Visual ground signals listed in CAR 2, Appendix 1,4.2 may be displayed by an AFIS unit as specified by the appropriate ATS authority.

4.10 Flight Plans

Except when other arrangements have been made by the ANSP, flight plans may be submitted, or closed by a report, to the AFIS unit at the aerodrome. The service provided by the AFIS unit in this case would be comparable to the service provided by an ATS reporting office.

Chapter 5

Alerting Service

5.1 Application

5.1.1 Alerting service shall be provided:

a) in so far as practicable, to all aircraft having filed a flight plan or otherwise known to the air traffic services; and

b) to any aircraft known or believed to be the subject of unlawful interference.

5.1.2 Flight information centres or area control centres shall serve as the central point for collecting all information relevant to a state of emergency of an aircraft operating within the flight information region (FIR) or control area concerned and for forwarding such information to the appropriate rescue coordination centre.

5.1.3 In the event of a state of emergency arising to an aircraft while it is in contact with an AFIS unit, such unit shall notify immediately the flight information centre or area control centre responsible which will in turn notify the rescue coordination centre.

5.1.3.1 Nevertheless, whenever the urgency of the situation so requires, the responsible AFIS unit shall 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.

5.2 Emergency phases

5.2.1 An aircraft is considered to be in a state of emergency in accordance with the following:

a) Uncertainty phase when:

1) no communication has been received from an aircraft within a period of thirty minutes after the time a communication shall have been received, or from the time an unsuccessful attempt to establish communication with such aircraft was first made, whichever is the earlier, or when

2) an aircraft fails to arrive within thirty minutes of the estimated time of arrival last notified to or estimated by air traffic services units, whichever is the later, except when no doubt exists as to the safety ofthe aircraft and its occupants.

b) Alert phase when:

1) following the uncertainty phase, subsequent attempts to establish communication with the aircraft or inquiries to other relevant sources have failed to reveal any news of the aircraft, or when

2) an aircraft which fails to land within five minutes of the estimated time of landing and communication has not been re-established with the aircraft, or when

3) information has been received which indicates that the operating efficiency of the aircraft has been impaired, but not to the extent that a forced landing is likely, except when evidence exists that would allay apprehension as to the safety of the aircraft and its occupants, or when

4) an aircraft is known or believed to be the subject of unlawful interference.

c) Distress phase when:

1) following the alert phase, further unsuccessful attempts to establish communication with the aircraft and more widespread unsuccessful inquiries point to the probability that the aircraft is in distress, or when

2) the fuel on board is considered to be exhausted, or to be insufficient to enable the aircraft to reach safety, or when

3) information is received which indicates that the operating efficiency of the aircraft has been impaired to the extent that a forced landing is likely, or when

4) information is received or it is reasonably certain that the aircraft is about to make or has made a forced landing, except when there is reasonable certainty that the aircraft and its occupants are not threatened by grave and imminent danger and do not require immediate assistance.

5.3 Alerting service provided by AFIS units

5.3.1 AFIS units are 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 AFIS unit may have or has been impaired; or

c) requested by the flight crew; or

d) when otherwise deemed necessary or desirable.

5.3.2 Procedures concerning the alerting of the rescue and fire fighting services shall be contained in local instructions. Such instructions shall specify the type of information to be provided to the rescue and fire fighting services, including type of aircraft and type of emergency and, when available, number of persons on board, and any dangerous goods carried on the aircraft.

5.3.3 Aircraft which fail to report after having been transferred to an AFIS unit, or, having once reported, cease radio contact and in either case fail to land five minutes after the expected landing time, shall be reported to the approach control unit, ACC or flight information centre, or to the rescue coordination centre or rescue sub-centre, in accordance with local instructions.

5.4 Use of communication facilities

AFIS units shall, 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.

5.5 Plotting aircraft in a state of emergency

When a state of emergency is considered to exist, the flight of the aircraft involved shall be plotted on a chart in order to determine the probable future position of the aircraft and its maximum range of action from its last known position. The flights of other aircraft known to be operating in the vicinity of the aircraft involved shall also be plotted in order to determine their probable future positions and maximum endurance.

5.6 Information to aircraft operating in the vicinity of an aircraft in a state of emergency

5.6.1 When it has been established by an AFIS unit that an aircraft is in a state of emergency, other aircraft known to be in the vicinity of the aircraft involved shall, except as provided in 5.6.2, be informed of the nature of the emergency as soon as practicable.

5.6.2 When an AFIS unit knows or believes that an aircraft is being subjected to unlawful interference, no reference shall 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.

Chapter 6

Emergency, Communications failure and contingencies

6.1 Emergency procedures

6.1.1 General

6.1.1.1 The various circumstances surrounding each emergency situation preclude the establishment of exact detailed procedures to be followed. The procedures outlined herein are intended as a general guide to AFIS personnel.

6.1.1.2 When an emergency is declared by an aircraft, the AFIS unit shall 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.

6.1.1.3 Changes of radio frequency shall be avoided if possible and shall normally be made only when or if an improved service can be provided to the aircraft concerned. When appropriate, other aircraft operating in the vicinity of the aircraft in emergency shall be advised of the circumstances.

Note.— Requests to the flight crew for the information contained in 6.1.1.2 e) will be made only if the information is not available from the operator or from

other sources and will be limited to essential information.

6.1.2 Unlawful interference and aircraft bomb threat

6.1.2.1 ATS personnel shall be prepared to recognize any indication of the occurrence of unlawful interference with an aircraft.

6.1.2.2 Whenever unlawful interference with an aircraft is known or suspected or a bomb threat warning has been received, AFIS units shall promptly provide assistance as far as practicable and inform the associated FIC/ACC.

6.1.2.3 The following additional procedures shall apply if a threat is received indicating that a bomb or other explosive device has been placed on board a known aircraft. The AFIS unit receiving the threat information shall:

a) if in direct communication with the aircraft, advise the flight crew without delay of the threat and the circumstances surrounding the threat; or

b) if not in direct communication with the aircraft, advise the flight crew by the most expeditious means through other ATS units or other channels.

6.1.2.4 The AFIS unit in communication with the aircraft shall ascertain the intentions of the flight crew and report those intentions to other ATS units which may be concerned with the flight.

6.1.2.5 The aircraft shall 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.

6.1.2.6 An aircraft on the ground shall be advised to remain as far away from other aircraft and installations as possible and, if appropriate, to vacate the runway. The aircraft shall be suggested to taxi to a designated or isolated parking area in accordance with local instructions. Shall the flight crew disembark passengers and crew immediately, other aircraft, vehicles and personnel shall be kept at a safe distance from the threatened aircraft.

6.1.2.7 AFIS units shall not provide any suggestions concerning action to be taken by the flight crew in relation to an explosive device.

6.1.2.8 An aircraft known or believed to be the subject of unlawful interference or which for other reasons needs isolation from normal aerodrome activities shall be suggested a route to the designated isolated parking position. Where such an isolated parking position has not been designated, or if the designated position is not available, the aircraft shall be suggested to proceed to a position within the area or areas selected by prior agreement with the aerodrome authority.

Note.- See CAR 14, Volume I, Chapter 3.

6.2 Air-ground communications failure

6.2.1 When unable to maintain two-way communication with an aircraft operating in a FIZ the AFIS unit shall inform the FIC/ACC/ATS unit immediately.

6.2.2 As soon as it is known that two-way communication has failed, action shall be taken to ascertain whether the aircraft is able to receive transmissions from the AFIS unit by requesting it to transmit, if possible, a specified signal in order to indicate acknowledgement.

6.2.3 If the aircraft fails to indicate that it is able to receive and acknowledge transmissions, it is assumed that the aircraft will:

a) if in visual meteorological conditions:

1) Continue to fly in visual meteorological conditions;

2) land at the nearest suitable aerodrome; and

3) Report its arrival by the most expeditious means to the appropriate ATS unit; or

6.2.4 As soon as it is known that two-way communication has failed, appropriate information describing the action taken by the AFIS unit shall be transmitted blind for the attention of the aircraft concerned.

6.2.5 Pertinent information shall be given to other aircraft in the vicinity of the presumed position of the aircraft experiencing the failure.

6.2.6 As soon as it is known that an aircraft which is operating in its area of responsibility is experiencing an apparent radio-communication failure, an AFIS unit shall forward information concerning the radio-communication failure to the air traffic services unit concerned.

6.3 ATS contingencies

The various circumstances surrounding each contingency situation preclude the establishment of exact detailed procedures to be followed. The procedures outlined below are intended as a general guide to ATS personnel.

6.3.1 Radio-communications contingencies

6.3.1.1 General

ATS contingencies related to communications, i.e. circumstances preventing an

ATS Personnel from communicating with aircraft in the area of responsibility, may be caused by either a failure of ground radio equipment, a failure of airborne equipment, or by the frequency being inadvertently blocked by an aircraft transmitter. The duration such events may be for prolonged periods and appropriate action to ensure that the safety of aircraft is not affected shall therefore be taken immediately.

6.3.1.2 Ground radio failure

6.3.1.2.1 In the event of complete failure of the ground radio equipment used for AFIS, the AFIS unit shall:

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 the adjacent ATS unit, as applicable, of the failure;

c) appraise such positions or units of the current traffic situation; and

d) if practicable, request their assistance, in respect of aircraft which may establish communications with those positions or units.

6.3.1.3 Blocked frequency

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

a) attempt to identify the aircraft concerned;

b) if the aircraft blocking the frequency is identified, attempts shall be made to establish communication with that aircraft, e.g. on the emergency frequency 121.5 MHz or on any VHF frequency designated for air-to-air use by flight crews or any other communication means or, if the aircraft is on the ground, by direct contact;

c) if communication is established with the aircraft concerned, the flight crew shall be instructed to take immediate action to stop inadvertent transmissions on the affected frequency.

6.3.1.4 Unauthorized use of AFIS frequency

6.3.1.4.1 Instances of false and deceptive transmissions on ATS frequencies which may impair the safety of aircraft can occasionally occur. In the event of such occurrences, the AFIS unit concerned shall:

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

b) advise all aircraft on the affected frequency that false and

deceptive information is being transmitted;

c) instruct all aircraft on the affected frequency to verify information before taking any action;

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

e) if possible, advise all aircraft affected when the false and deceptive information is no longer being transmitted.

6.3.1.5 Unauthorized entry of aircraft.

6.3.1.5.1 Incase of any aircraft intentionally or intentionally entering into Nepalese airspace without permission, the concerned ATS unit shall order the aircraft to leave the airspace of Nepal or land at a designated aerodrome within the territory of Nepal and inform it to the Director General of CAAN.

6.3.1.5.2 Any violation of the issue order as mentioned in 6.3.1.4.1 shall immediately be reported to the appropriate ATS Authority of the state of Registry and the state of Operator.

6.3.1.5.3 The procedure in relation to an aircraft intentionally or intentionally entering into the airspace of Nepal shall be prescribed by the Director General of CAAN.

6.3.1.5.4 The pilot in command of a civil aircraft, when instructed to land in a specified aerodrome, shall comply with the ATS instructions.

Chapter 7

Strip Marking Procedure

7.1 Introduction

7.1.1 This chapter specifies the procedures and standards that are to be applied to the processing of flight data by the AFIS Personnel. Data concerning the progress of flight are normally displayed on the Flight Progress Strips to facilitate the prediction and resolution of conflicts between aircraft.

7.1.2 AFIS Personnel shall maintain proper strip marking procedure.

7.1.3 The strips mentioned below shall be maintained for all flights arriving at and departing from AFIS aerodromes within the Kathmandu FIR.

7.1.4 Keep all the strips safe for a period of three months, and then can be disposed of.

7.2 Definitions

7.2.1 **Strip Bay**. A strip bay or simply a bay is a board, metallic or non-metallic, on which strip holders are arranged.

7.2.2 **Active Bay**. An active bay is a bay which is used to accommodate strip holders that are holding active aircraft strips.

7.2.3 **Strip Holder**. A strip holder is rectangular in shape usually made of plastic material to hold the flight progress strip.

7.2.4 **Flight Progress Strip**. A flight progress strip is a rectangular paper strip, color coded and having different boxes, used to record and display all the data necessary for ATS purposes.

7.2.5 **Departure Strip**. A departure strip is a strip, yellow in color, used to display essential details of a departing flight.

7.2.6 **Arrival Strip**. An arrival strip is a strip, blue in color, used to display essential details of an arriving flight.

7.2.7 **Local Strip**. A local strip is a strip, pink in color, used to display essential details of a local traffic.

Note: It is similar to a departure strip, but pink in color.

7.3 Strip writing techniques

7.3.1 Unless otherwise noted all markings in the strip shall be written in black ink. Do not erase or overwrite any item. Draw horizontal line through the items that need correction and write the new item immediately adjacent to it.

7.3.2 Letter shall be printed in Capital.

7.3.3 Arabic numerals shall be used to record figures.

7.3.4 Time shall be recorded in 4 digits.

7.3.5 Time Changes

7.3.5.1 When the hour changes, draw a line through all four digits and place new time beneath the original time.

e.g. 15 55
16 05

7.3.5.2 When the minute changes, draw a line through last two 'minute digits' and place new time beneath the original 'minute digits'.

e.g. 15 50
55

7.4 Departure Strip (yellow)

A/C TYPE (1a)	DEP A/D (2)		RWY (3)	REP PT/PSN (4)		REP PT/PSN (5)		TFR PT/PSN (6)		DEST A/D (7)	
	EOBT (2a)	LEVEL (2c)	1ST CONT. PSN. (3a)	EST (4a)	LEVEL (4c)	EST (5a)	LEVEL (5c)	EST (6a)	LEVEL (6c)	ETA	MISC BOX (8)
A/C CALL SIGN (1)	ATD (2b)		_____ TIME (3b)	ACT. TIME (4b)		ACT. TIME (5b)		TFR TIME (6b)			
TYPE OF FLT SPEED (1b) (1c)											

1. AIRCRAFT (A/C) CALL SIGN

   1a A/C TYPE
   1b TYPE OF FLIGHT
   1c SPEED OF A/C

2. DEPARTURE/AERODROME POINT OF DEPARTURE

   2a ESTIMATED OFF BLOCK TIME (IF EOBT NOT AVBL, READY FOR T/O TIME.)
   2b ACTUAL TIME OF DEP
   2c CRUISING LEVEL OF A/C

3. RUNWAY NOTIFIED BY AIRCRAFT (OR, RUNWAY PREFERRED ADVISED BY AFIS PERSONNEL)

   3a START UP TIME
   3b TAXI TIME

4. 1st REPORTING POINT OR POSITION

   4a ESTIMATE OVER REPORTING PT OR PSN
   4b ACTUAL TIME
   4c LEVEL OF THE A/C

5. 2nd REPORTING POINT OR POSITION

   5a ESTIMATE OVER REPORTING PT OR PSN
   5b ATUAL TIME
   5c LEVEL OF THE A/C

6. TRANSFER POINT OR POSITION

   6a ESTIMATE OVER TFR PT OR PSN
   6b TFR TIME
   6c LEVEL OF THE A/C

7. DESTINATION AERODROME

   7a ESTIMATED TIME OF ARRIVAL
   7b ACTTUAL TIME OF ARRIVAL (**NOT NECESSARY**)

8. MISCELLANEOUS BOX

   INFORMATION OTHER THAN MENTIONED IN THE PREVIOUS BOXES SHALL BE MENTIONED IN THIS BOX (SUCH AS TFC INFO, TECHNICAL PROBLEMS, SIGNIFICANT WEATHER INFO, A/C REQ, FLT DETAIL, ETC).

7.5 Arrival Strip (blue)

A/C TYPE (1a) **A/C CALL SIGN** (1) TYPE OF FLT SPEED (1b) (1c)	DEP A/D (2)		RWY (3)	REP PT/PSN (4)		REP PT/PSN (5)		REP PT/PSN (6)		DEST A/D (7)	MISC BOX (8)
	EOBT (2a)	LEVEL (2c)	1ST CONT. PSN. (3a) ——— TIME (3b)	EST (4a)	LEVEL (4c)	EST (5a)	LEVEL (5c)	EST (6a)	LEVEL (6c)	ETA (7a)	
	ATD (2b)			ACT. TIME (4b)		ACT. TIME (5b)		ACT. TIME (6b)		ATA (7b)	

1. A/C CALL SIGN

   1a A/C TYPE
   1b TYPE OF FLT
   1c SPEED OF A/C

2. DEPARTURE/AERODROME POINT OF DEPARTURE

   2a ESTIMATED OFF BLOCK TIME
   2b ACTUAL TIME OF DEP
   2c CRUISING LEVEL OF A/C

3. RWY NOTIFIED BY A/C (OR, RWY PREFERRED BY AFIS PERSONNEL)

   3a 1st CONTACT POINT, POSITION OR LEVEL
   3b 1st CONTACT TIME

4. 1st REPORTING POINT OR POSITION

   4a ESTIMATE OVER REPORTING PT OR PSN
   4b ACTUAL TIME
   4c LEVEL OF THE A/C

5. 2nd REPORTING POINT OR POSITION

   5a ESTIMATE OVER REPORTING PT OR PSN
   5b ATUAL TIME
   5c LEVEL OF THE A/C

6. 3rd√ REPORTING POINT OR POSITION

   6a ESTIMATE OVER REPORTING PT OR PSN
   6b ACTUAL TIME
   6c LEVEL OF THE A/C

7. DESTINATION AERODROME

   7a ESTIMATED TIME OF ARRIVAL
   7b ACTTUAL TIME OF ARRIVAL

8. MISCELLANEOUS BOX

   INFORMATION OTHER THAN MENTIONED IN THE PREVIOUS BOXES SHALL BE MENTIONED IN THIS BOX (SUCH AS TFC INFO, TECHNICAL PROBLEMS, SIGNIFICANT WEATHER INFO, A/C REQ, OTHER DETAIL, ETC).

7.6 Use of abbreviations and symbols

ATS Personnel can use the approved abbreviations and symbols as mentioned in this document to expedite writing in the flight progress strip.

Chapter 8

Communication Technique & Phraseology

8.1 Communication technique

Note: The communications procedures shall be in accordance with Volume II of Annex 10 — Aeronautical Telecommunications, AFIS Personnel and pilots shall be thoroughly familiar with the radiotelephony procedures contained therein.

8.1.1 Reasons for Standardization

Standard phrases help in avoiding misunderstanding of advice and information as well as in reducing time requirement for communication. Standard phrases, therefore, included in this chapter shall be used by AFIS Personnel and Flight crews in all air-ground communications.

8.1.2 Supplementary Phrases

Owing infinite nature of situation that may arise, the example phrases given in this chapter may not be sufficient. AFIS Personnel, therefore, are expected to use additional phrases which shall be clear, concise and complete.

Note1: AFIS Personnel can use the existing phraseologies prescribed in Chapter12 of MATS Nepal to pass the necessary information to aircraft.

Note2: AFIS Personnel are encouraged to refer and gain advantage from Chapter12 of MATS Nepal and ICAO Manual of Radiotelephony (Doc 9432), which will certainly enrich their air-ground communication skills.

8.1.3 Transmission Technique

The following transmitting techniques will assist in ensuring that transmitted speech is clearly and satisfactorily received by the other end.

a. Always press the transmit switch fully before speaking.

b. Always precede the transmission with a call sign of the station being called, even on the second or subsequent transmissions to the same station.

c. A slight pause before and after numbers will assist in making them easier to understand.

d. Avoid conversational speech.

e. Speak all words plainly and end each word clearly, so as to prevent the

running together of consecutive words.

f. Maintain a formal business like manner and avoid informal phrases.

8.1.4 Letters, Figures and Time

8.1.4.1 When it is necessary to identify and letter of the alphabet, the following standard phonetic alphabet shall be used.

Letter	Spoken as	Pronunciation	Letter	Spoken as	Pronunciation
A	ALFA	AL-FAH	N	NOVEMBER	NO-VEM-BER
B	BRAVO	BRAH-VOH	0	OSCAR	OSS-CAH
C	CHALIE	CHAR-LEE	P	PAPA	PAH-PAH
D	DELTA	DELL-TAH	Q	QUEBEC	KEH-BECK
E	ECHO	ECK-OH	R	ROMEO	ROW-ME- OH
F	FOXTROT	FOKS-TROT	S	SIERRA	SEE-AIR-AH
G	GOLF	GOLF	T	TANGO	TAN-GGO
H	HOTEL	HOH-TELL	U	UNIFORM	YOU-NEE-FORM
I	INDIA	IN-DEE-AH	V	VICTOR	VICK-TAH
J	JULIET	JEW-LEE-ETT	W	WHISKEY	WISS-KEY
K	KILO	KEY-LOH	X	X-RAY	ECKS-RAY
L	LIMA	LEE-MAH	Y	YANKEE	YANG-KEY
M	MIKE	MIKE	Z	ZULU	Z00-LOO

8.1.4.2 Number in whole hundreds or whole thousands shall be pronounced by transmitting each digit in the number of hundreds or thousands followed by the word hundred or thousand as appropriate. Combinations of whole thousands and whole hundreds shall be transmitted by transmitting each digit in the number of thousands followed by the word thousand, followed by the number of hundreds followed by the word hundred

EXAMPLES :	number transmitted as
10	ONE ZERO
75	SEVEN FIVE
583	FIVE EIGHT THREE
600	SIX HUNDRED
5000	FIVE THOUSAND
7600	SEVEN THOUSAND SIX HUNDRED
11000	ONE ONE THOUSAND

18500	ONE EIGHT THOUSAND FIVE HUNDRED
38143	THREE EIGHT ONE FOUR THREE

8.1.4.3 Numbers containing a decimal point shall be transmitted with the decimal point, in appropriate sequence, indicated by the word DECIMAL e.g., Number 118.1 – ONE ONE EIGHT DECIMAL ONE.

Numbers shall be transmitted using the following pronunciations			
Number	**Pronunciation**	**Number**	**Pronunciation**
0	ZE-RO	7	SEV-EN
1	WUN	8	AIT
2	TOO	9	NIN-ER
3	TREE	Decimal	DAY-SEE-MAL
4	FOW-ER	Hundred	HUN-DRED
5	FIFE	Thousand	THOU-SAND
6	SIX		

8.1.4.4 When transmitting time use twenty four hour clock system and transmit each digit separately. When it is certain that no misunderstanding will exist, minutes only may be used. When there is possibility of confusion with other items being transmitted, the prefix TIME shall be used. When giving a time check, the time shall be given to the nearest half minute, e.g. Time 0715 and a half.

8.1.4.5 Readability of signal strength.

The readability of signal strength shall be referred to as a number taken from the following list as appropriate:

1. Unreadable
2. Readable now and then
3. Readable but with difficulty
4. Readable
5. Perfectly readable

8.2 Phraseologies regarding the provision of information

8.2.1 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) [ADDITIONAL] TRAFFIC (direction) BOUND (type of aircraft) (level) ESTIMATED (or OVER) (significant point) AT (time); g) TRAFFIC IS (classification) UNMANNED FREE BALLOON(S) WAS [or ESTIMATED] OVER (place) AT (time) REPORTED (level(s)) [or LEVEL UNKNOWN] MOVING (direction) (other pertinent information, if any). *Denotes pilot transmission.
8.2.2 METEOROLOGICALCONDITIONS	a) [SURFACE] WIND (number) DEGREES (speed) (units); b) WIND AT (level) (number) DEGREES (number) KILOMETRES PER HOUR (or KNOTS);, Note.— Wind is always expressed by giving the mean direction and speed and any significant variations thereof.
8.2.3 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 Note.- These transmissions from an AFIS unit are requests and do not constitute an instruction.	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) REPORT POSITION

	*g) (distance) MILES (GNSS or DME) FROM (name of DME station) (or significant point). * Denotes pilot transmission.
8.2.4 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 UNRELIABLE) [and/or BRAKING COEFFICIENT (equipment and number)]; h) BRAKING ACTION REPORTED BY (aircraft type) AT (time) GOOD (or MEDIUM, or POOR); i) BRAKING ACTION [(location)] (measuring equipment used), RUNWAY (number), TEMPERATURE [MINUS] (number), WAS (reading) AT (time); j) RUNWAY (or TAXIWAY) (number) WET [or DAMP, WATER PATCHES, FLOODED (depth), or SNOW REMOVED (length and width as applicable), or TREATED, or COVERED WITH PATCHES OF DRY SNOW (or WET SNOW, or COMPACTED SNOW, or

	SLUSH, or FROZEN SLUSH, or ICE, or ICE UNDERNEATH, or ICE AND SNOW, or SNOWDRIFTS, or FROZEN RUTS AND RIDGES)]; k) AFIS OBSERVES (weather information); l) PILOT REPORTS (weather information
8.2.5 OPERATIONAL STATUS OF VISUAL AND NON-VISUAL AIDS	a) (specify visual or non-visual aid) RUNWAY (number) (description of deficiency); b) (type) LIGHTING (unserviceability); c) GBAS/SBAS/MLS/ILS CATEGORY (category) (serviceability state); d) TAXIWAY LIGHTING (description of deficiency); e) (type of visual approach slope indicator) RUNWAY (number) (description of deficiency).

8.3 Phraseologies for use on and in the vicinity of the aerodrome

8.3.1 IDENTIFICATION OF AIRCRAFT	SHOW LANDING LIGHTS.
8.3.2 ACKNOWLEDGEMENT BY VISUAL MEANS	a) ACKNOWLEDGE BY MOVING AILERONS (or RUDDER); b) ACKNOWLEDGE BY ROCKING WINGS; c) ACKNOWLEDGE BY FLASHING LANDING LIGHTS
8.3.3 STARTING PROCEDURES … at aerodromes where AFIS can not control start up, AFIS replies	e) START UP AT OWN DISCRETION; f) EXPECT DEPARTURE (time) START UP AT OWN DISCRETION. g) START UP AT OWN DISCRETION (local information) h) EXPECT DEPARTURE (time) START UP AT OWN DISCRETION * Denotes pilot transmission.

8.3.4 TAXI ... aircraft/AFIS	*a) READY TO TAXI (position) b) TRAFFIC (details) AERODROME CODITIONS (details) RUNWAY (numbr) c) WILL TAXI TO HOLDING POINT (name) RUNWAY (number) VIA TAXIWAY (name) d) HOLDING * Denotes pilot transmission.
8.3.5 RELAYING CLEARANCE … AFIS a) (ATC unit) CLEARS (details of clearance) ... confirmation or otherwise of the readback of clearance SAY AGAIN] … (as appropriate);	a) (ATC unit) CLEARS (details of clearance) b) [THAT IS CORRECT] (or NEGATIVE) [I SAY AGAIN] … (as appropriate);
8.3.6 TAKE OFF	a) [REPORT READY] b) READY FOR DEPARTURE c) TRAFFIC (details) NO REPORTED TRAFFIC RUNWAY (number) d) (traffic information) RUNWAY (number) FREE FOR DEPARTURE or RUNWAY (number) OCCUPIED (or BLOCKED) BY (aircraft or vehicles or persons) REPORT AIRBORNE; *e) HOLDING; *f) WILL LINE UP RUNWAY (number) VIA BACKTRACK; g) WILL TAKE OFF RUNWAY (number) * Denotes pilot transmission.

8.3.7 AFTER TAKE -OFF ... to request airborne time	a) REPORT AIRBORNE; b) AIRBORNE (time); c) AFTER PASSING (level) (contact instructions);
8.3.8 ENTERING AN AERODROME TRAFFIC CIRCUIT	*a) [aircraft type] (position) (level) FOR LANDING; b) ROGER [(direction of circuit in use)] [RUNWAY (number)] [SURFACE] WIND (direction and speed) (units) [TEMPERATURE [MINUS] (number)] QNH (or QFE) (number) [(units)] [TRAFFIC(detail)];
8.3.9 IN THE CIRCUIT	(position in cicuit, e.g. (DOWNWIND/FINAL); b) ROGER [RUNWAY (number) FREE] or TRAFFIC (detail) [additional information if required].
8.3.10 APPROACH Note.— The report "LONG FINAL" is made when aircraft turn on to final approach at a distance greater than 7 km (4 NM) from touchdown or when an aircraft on a straight- in approach is 15 km (8 NM) from touchdown. In both cases a report "FINAL" is required at 7 km (4 NM) from touchdown.	a) REPORT BASE (or FINAL, or LONG FINAL); *b) BASE [or FINAL,or LONG FINAL]; c) TRAFFIC (details); d) NO REPORTED TRAFFIC RUNWAY (number); e) RUNWAY (number) FREE or [RUNWAY (number) OCCUPIED]; *f) WILL LAND [RUNWAY (number)]; *g) GOING AROUND. * Denotes pilot transmission

8.3.11 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.
8.3.12 RUNWAY VACATING AND COMMUNICATIONS AFTER LANDING	a) TAXIWAY(name) AVAILABLE TO APRON (STAND) b) YOUR STAND (OR GATE) (designation)

8.4 Phraseologies for vehicles/persons on the manoeuvring area

8.4.1 VEHICLE TRAFFIC ... where detailed instructions are required	*a) [vehicle call sign]] [location] REQUEST PROCEED TO [intentions]; b) PROCEED TO HOLDING POINT [number] [RUNWAY (number)] [HOLD SHORT OF RUNWAY (number) (or CROSS RUNWAY (number))]; *c) [vehicle call sign] REQUEST DETAILED INSTRUCTIONS; d) PROCEED TO HOLDING POINT [number] [RUNWAY (number)] VIA (specific route to be followed) [HOLD SHORT OF RUNWAY (number) (or CROSS RUNWAY (number))]; e) TAKE (or TURN) FIRST (or SECOND) LEFT (or RIGHT); f) PROCEED VIA (identification of taxiway); g) PROCEED VIA RUNWAY (number); h) PROCEED TO TERMINAL location, e.g. GENERAL AVIATION AREA *i) (vehicle call sign) (location) REQUEST PROCEED TO (destination on aerodrome); j) PROCEED STRAIGHT AHEAD; k) PROCEED WITH CAUTION; l) GIVE WAY TO (description *m) GIVING WAY TO (traffic); and position of aircraft or other *n) TRAFFIC (or type of aircraft) IN SIGHT; vehicle); o) FOLLOW (description of p) VACATE RUNWAY (number); other aircraft or vehicle);

	q) RUNWAY (number) VACATED; r) EXPEDITE [(reason)]; *s) EXPEDITING; t) [CAUTION] proceed SLOWER [reason]; *u) SLOWING DOWN. * Denotes vehicle driver transmission
8.4.2 HOLDING VEHICLES ... to hold not closer to a runway than specified	‡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. ‡ Requires specific acknowledgement from the vehicle driver. * Denotes vehicle driver transmission. The procedure words ROGER and WILCO are insufficient acknowledgement of the instructions HOLD, HOLD POSITION and HOLD SHORT OF (position). In each case the acknowledgement shall be by the phraseology HOLDING or HOLDING SHORT, as appropriate.
8.4.3 TO CROSS A RUNWAY – VEHICLES Note.— The driver will, when requested,report "RUNWAY VACATED" when the vehicle is beyond the relevant runway-holding position.	a) REQUEST CROSS RUNWAY *(number)*; Note.— If the AFIS unit is unable to see the crossing vehicle/person (e.g. night, low visibility), the instruction shall always be accompanied by a request to report when the runway has been vacated. b) CROSS RUNWAY *(number)* [REPORT VACATED

	c) EXPEDITE CROSSING RUNWAY (number) TRAFFIC (aircraft type) (distance) KILOMETRES (or MILES) FINAL; d) PROCEED TO HOLDING POINT [number] RUNWAY (number)] VIA (specific route to be followed), HOLD SHORT OF RUNWAY (number)] or [CROSS RUNWAY (number)]; *e) RUNWAY VACATED. * Denotes driver transmission

Chapter 9

Miscellaneous

9.1 Responsibilities of and procedures for pilots

9.1.1 When operating on or in the vicinity of an aerodrome where AFIS is provided, pilots must, on the basis of the information received from the AFIS unit combined with their own knowledge and observations, decide on the course of action to be taken to ensure separation from other aircraft, ground vehicles and obstacles.

9.1.2 It is essential that pilots establish and maintain two-way radio communication with the AFIS unit and that they report their positions, levels and all significant manoeuvres and intentions to the AFIS unit, since the efficiency of the AFIS is dependent on the information received.

9.2 Promulgation of information

Information regarding the availability of AFIS and related procedures shall be included in the relevant parts of the aeronautical information publication (AIP) in the same manner as in the case of aerodromes provided with air traffic control service, The information shall include the following:

a) identification of the aerodrome;

b) location and identification of the AFIS unit;

c) hours of operation of *the* AFIS unit;

d) lateral and vertical limits of t h e f l i g h t information *zone (* FIZ);

e) language(s) used;

f) detailed description of *the* services provided, including alerting service and, if applicable, direction-finding service;

g) special procedures for application by pilots ;

h) any other pertinent informations

9.3 Documents and Records

9.3.1 Documents

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

9.3.1.2 These processes must ensure:

(a) authorization is by a designated authority appropriate to the management and safety accountability structures;

(b) currency can be readily determined;

(c) availability at locations where needed by ATS personnel;

(d) only current versions are available;

(e) a master copy is securely held;

(f) archival where superseded.

9.3.1.3 Reference Materials. For the purposes of sub-regulations, the manuals and documents to be maintained are the following:

(a) manuals for equipment used by staff in the provision of air traffic services;

(b) the relevant sections of the Aerodrome Emergency Plan (aerodrome services only

9.3.2 RECORDS

9.3.2.1 A system for records covers identification, collection, indexing, storage, security, maintenance, access and disposal of records necessary for the provision of air traffic services.

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

9.3.3 RECORDS TO BE KEPT

9.3.3.1 Automatic recordings. The following items used for the provision of air traffic services must be recorded automatically and retained at least for the period shown below:

(a) direct pilot-controller two-way radiotelephony or datalink communications—30 days;

(b) direct-speech or data link between air traffic services units—30 days;

(c) surveillance data from primary and secondary radar equipment -30 days;

(d) automated flight data processing including on-screen display of aircraft tracks and label blocks—30 days.

Automatic recordings. The following items used for the provision of air traffic services must be recorded automatically and retained at least for the period shown below:

(a) direct pilot-controller two-way radiotelephony data link communications 30 days;

(b) direct-speech or data link between air traffic services units—30 days;

(c) surveillance data from primary and secondary radar equipment -30 days;

(d) automated flight data processing including on-screen display of aircraft tracks and label blocks—30 days.

9.3.3.2 Time injection. Automatic recordings must have a means of establishing accurately the time, in hours/minutes/seconds, at which any recorded event occurred.

9.3.3.3 Document records. The following items must 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;

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

9.3..4 MAINTAINING OPERATIONAL LOG BOOKS

9.3.4.1 The Log Book must be used to record all significant occurrences and actions relating to operations, facilities, equipment and staff at an ATS unit.

[Note: Except when forms such as fault reports or Air Safety Incident Reports must also be completed, duplication of information shall be avoided.]

9.3.4.2 A working record or Log Book entry must not be inserted between earlier entries. In the event of an out of sequence entry being necessary, it must 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.

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

9.3.4.4 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); • Results of equipment checks; • Result of time check
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; • Short term changes in staffing or hours of coverage, including variations to required staffing levels; • Any dispensation given against the Regulations • Status of navigation aids.
Handover/takeover	•A resume of outstanding action and unusual

(where as eparate form is not provided and kept as a record)	operations which are current or anticipated, relating to the traffic display and/or SAR activity; • The status of communications and equipment; • The time of handover/takeover, against the signatures of the officers involved
Closure of unit and/or Position	• Time of closure and conditions and actions relating to the closure, followed by changes to equipment status, and any outstanding action; • The time of intended reopening, and the signature of the officer closing the unit/position

9.3.5 VOICE AND DATA RECORDING

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

9.4 ATS FACILITIES AND EQUIPMENT

9.4.1 INTRODUCTION

9.4.1.1 This standard sets out the standards for the design, sitting, construction, equipping and maintenance of ATC facilities where applicable. Further information is contained in an Advisory Circular.

9.4.2 TOWER

9.4.2.1 A tower first commissioned after 1 January 2013, must enable the controller to have:

a. adequate vision to all the manoeuvring area and airspace which are under the ATS Personnel's area of responsibility;

b. a view of all runway ends and taxiways,

c. maximum vision of airborne traffic patterns with primary consideration given to the view from the aerodrome position(s);

d. unobstructed line of sight from the tower eye level to the manoeuvring area of the aerodrome;

e. sufficient visual resolution of all aerodrome movement areas for which he/she has a responsibility;

9.4.2.2 In addition, procedures or facilities are required to ensure:

(a) protection from glare, reflection and noise;

(b) unobstructed view from an existing tower cab

9.4.2.3 Communication. Each tower must contain:

(a) an appropriate power supply to service the facilities identified in this Section;

(b) facilities capable of two-way communications with aircraft, vehicles and persons within its area of responsibility;

(c) facilities capable of providing two-way communications:

(i) between operational positions within the control tower;

(ii) with adjacent ATS units;

(iii) with aerodrome rescue and fire fighting services;

(d) a means of alerting emergency services;

(e) a means of recording air/ground/air and ground/ground communications;

(f) AFTN terminal or other means to provide information normally conveyed by AFTN;

(g) binoculars;

(h) signal lamp, with white, red and green functions.

9.4.2.4 Displays. An AFIS unit which have the regular schedule flight shall have the following displays:

(a) flight data displays (e.g. flight progress boards);

(b) meteorological displays which meet the accuracy criteria specified in Annex 3 and which provide at least the following information:

(i) wind velocity;

(ii) barometric pressure;
(iii) temperature.

Note: The meteorological displays must show mean speed and mean direction of the surface wind. However, this equipment does not ….. AFIS unit to provide such display in rest AFIS aerodrom

Surface wind observations are to be representative of the conditions alongthe runway and near the touchdown zones. If more than one sensor is used, the displays must identify the sensor being utilized for the observation.

(c) operational data displays for:

(i) other significant weather information;

(ii) NOTAMS;

(iii) handover/takeover;

(iv) essential aerodrome information;

(v) relevant maps and charts;

(d) a time display at each operational position.

(e) a means to readily recognize the failure of any terrestrial navigation aid concerned.

9.5 PROVISIONS OF MAPS AND CHARTS

Maps and charts shall be prepared and published by ANSP in the respective SOPs of the concerned airports as per the Standards as mentioned in CAR-4 (Aeronautical Charts).

9.6 PROVISIONS FOR AIRPORT OPERATION

9.6.1 The Air Traffic Service to be provided in Nepal shall be as per the standards specified in the Civil Aviation Requirements issued by the Authority.

9.6.2 The responsibility of ensuring the service as per the standard pursuant to 9.6.1 shall be that of the chief of the concerned airport.

9.6.3 Any information on incident, event or occurrence relating to the air navigation services that affects or may affect the safety of air navigation shall be reported to Civil Aviation Safety Regulation Directorate without any delay.

9.6.4 The chief of the concerned airport shall have the responsibility to install, operate and maintain the communication, navigation and surveillance equipment to support smooth operation of Air Traffic Services.

9.7 PROCEDURE FOR TAKING OVER AND HANDLING OVER WATCH

9.7.1 TAKING OVER WATCH

9.7.1.1 Prior to taking over watch ATS Personnel shall:

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.

9.7.1.2 Obtain full information and briefing from the MET office regarding the weather position and tendencies for the period of their watch whenever necessary as justified by the general weather condition.

9.7.1.3 Familiarize themselves with the serviceability of all equipment under their charge and likely to be used during the period of their watch.

9.7.1.4 Ensure that they are acquainted with any special movements or maneuvers likely to occur during their watch.

9.7.1.5 At station where more than one ATS Personnel are employed at one time on AFIS units, the ATS Personnel watch log shall be signed by the watch supervisor or Senior ATS Personnel on duty. Other ATS Personnel shall record taking over their specific duties as required. To accommodate all the above work ATS Personnel shall report to their respective AFIS Units at least 10 minutes ahead of relieving the shift.

9.7.2 HANDLING OVER WATCH

9.7.2.1 ATS Personnel handling over watch shall ensure that they provide their successors with the complete 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 ensuring or upcoming or following watch.

9.7.2.2 Shall 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 ATS Personnel to complete such actions and subsequent reports and records rather than to transfer the responsibility for completion to another officer. Notwithstanding the fact that watch roster defines the appointed time to hand over, the ATS Personnel handling over watch shall remain on until such time as this responsibility has been discharged.

9.7.3 AFIS ROOM DISCIPLINE

9.7.3.1 VISITORS

No unauthorized person shall be granted acces to an AFIS Room. Allowing such visitors to the AFIS Room is the explicit authority of the watch supervisor and before bringing in authorized visitors a check shall be made with the watch supervisor or the Duty ATS Personnel as to whether the traffic situation permits such a visit. At no time

shall visitors be allowed to interfere with the smooth running of the watch and cell phone shall be kept in manner mode.

9.7.3.2 CLEANLINESS

The watch supervisor or the Duty ATS Personnel depending on the ATS unit, shall ensure that the AFIS Unit Room is kept in a clean and tidy condition at all times and all equipments shall be kept in serviceable condition and stowed away when not in use.

9.7.3.3 SUPERVISION

The watch supervisor or the ATS Personnel -in-charge, depending on the AFIS Unit shall be responsible for the supervision of all staffs and the maintaining good condition.

9.7.3.4 DUTY ROSTER

9.7.3.4.1 A watch keeping roster shall be prepared by the ATS Personnel -in-Charge of the concerned .AFIS unit not later than the 20th day of each month and shall show the hours of watch-keeping and hours of duty required of individuals ATS Personnel throughout the following month.

9.7.3.4.2 ATS Personnel shall adhere to the time and periods of watch keeping duties details in this roster and shall arrive at their work place in time to carry out the procedures detailed in para 9.7 (procedure for taking over handling over watch)

9.7.3.4.3 Duty Roster shall be displayed at the AFIS units.

APPENDIX- A

1.3 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 shall not be used.

Clearance limits

A	= Cleared to aerodrome (point of first intended landing)
V	= Cleared to reporting point
H	= Holding instructions issued
MB	= Cleared to Min Beacon
	= Cleared to leave control area
OM	= Cleared to an Outer Marker
X	= Cleared to cross the airway in the vicinity of reporting position
V	= Cleared over a reporting point (over flight)

Clearance Instruction

C	= ATC CLEARANCE ……
^	= NO delay expected
RSYD	= Release subject to your discretion with regard to…….
CE	= Clearance expires…… (time)
……	= Release not before …….. (time)
RLCE	= Request level change en-route

 = Maintain ……. (level) …….

↓ = Descend

- = To : (used to indicate "Form …….. to ……..)

( ) = Alternative instruction

—_ = Restriction written below this line

/ = After passing

o = Aircraft has reported at an altitude other than that proposed

 = Joining Flight

RL = Report Immediately on reaching (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

OTP = VFR conditions on top

RLS = Release

NDB = Non-directional Radio Beacon

 = Abeam

VR = VOR approach

CAF = Cleared a filed

DLA = Delay

EAC = Expect approach clearance (time)

EFC = Expect further clearance (time)

RP = Report passing

TCP = Transfer of Control point

UFN = Until Further Notice

 = For step climb followed by level information

 = For step descent followed by level information

Some other useful symbol and abbreviation frequently used in practice

 = Control Area

 = To enter control area

& = and

 = Pilot cancelled IFR Flight plan

 = Out of control zone

 = Enter Control Zone

@ = At

ABV = Above ……. ft =+ …….

BLO = Below ……. ft =+ …….

> = Before

< = After

TKOF = Take off

V< (TIME) = Clearance void after …….(time)

ADNL TFC = Additional traffic is ……..

RC = Reserve Course

UFA = Until further advise

INDEF = Delay indefinite

√ = Information forwarded

C→ = Coordination effected

C↑ = Climb coordinated

C↓ = Descent coordinated

…....+ = At or above ……..... ft

…….- = At or below …… ft

↑**CC** = Climb cruise

Z = Delay not determined

APPENDIX -B

Civil Aviation Authority of Nepal

Air Traffic Incident Report Form

(To be filled by Pilot or ATC on behalf of Pilot)

AIR TRAFFIC INCIDENT REPORT FORM

For use when submitting and receiving reports on air traffic incidents. In an initial report by radio, shaded items should be included.

A — AIRCRAFT IDENTIFICATION	**B — TYPE OF INCIDENT**
	AIRPROX / PROCEDURE / FACILITY*

C — THE INCIDENT

1. General

a) Date / time of incident UTC

b) Position

2. Own aircraft

a) Heading and route

b) True airspeed _____ measured in ( ) kt _____ ( ) km/h _____

c) Level and altimeter setting

d) Aircraft climbing or descending

( ) Level flight ( ) Climbing ( ) Descending

e) Aircraft bank angle

( ) Wings level ( ) Slight bank ( ) Moderate bank

( ) Steep bank ( ) Inverted ( ) Unknown

f) Aircraft direction of bank

( ) Left ( ) Right ( ) Unknown

g) Restrictions to visibility (select as many as required)

( ) Sunglare ( ) Windscreen pillar ( ) Dirty windscreen

( ) Other cockpit structure ( ) None

h) Use of aircraft lighting (select as many as required)

( ) Navigation lights ( ) Strobe lights ( ) Cabin lights

( ) Red anti-collision lights ( ) Landing / taxi lights ( ) Logo (tail fin) lights

( ) Other ( ) None

i) Traffic avoidance advice issued by ATS

( ) Yes, based on radar ( ) Yes, based on visual sighting ( ) Yes, based on other information

( ) No

j) Traffic information issued

( ) Yes, based on radar ( ) Yes, based on visual sighting ( ) Yes, based on other information

( ) No

k) Airborne collision avoidance system — ACAS

( ) Not carried ( ) Type ( ) Traffic advisory issued

( ) Resolution advisory issued ( ) Traffic advisory or resolution advisory not issued

l) Radar identification

( ) No radar available ( ) Radar identification ( ) No radar identification

m) Other aircraft sighted

( ) Yes ( ) No ( ) Wrong aircraft sighted

*Delete as appropriate

n)	Avoiding action taken				
	( ) Yes	( ) No			
o)	Type of flight plan	IFR / VFR / none*			
3.	**Other aircraft**				
a)	Type and call sign / registration (if known)				
b)	If a) above not known, describe below				
	( ) High wing	( ) Mid wing		( ) Low wing	
	( ) Rotorcraft				
	( ) 1 engine	( ) 2 engines		( ) 3 engines	
	( ) 4 engines	( ) More than 4 engines			
	Marking, colour or other available details				
c)	Aircraft climbing or descending				
	( ) Level flight	( ) Climbing		( ) Descending	
	( ) Unknown				
d)	Aircraft bank angle				
	( ) Wings level	( ) Slight bank		( ) Moderate bank	
	( ) Steep bank	( ) Inverted		( ) Unknown	
e)	Aircraft direction of bank				
	( ) Left	( ) Right		( ) Unknown	
f)	Lights displayed				
	( ) Navigation lights	( ) Strobe lights		( ) Cabin lights	
	( ) Red anti-collision lights	( ) Landing / taxi lights		( ) Logo (tail fin) lights	
	( ) Other	( ) None		( ) Unknown	
g)	Traffic avoidance advice issued by ATS				
	( ) Yes, based on radar	( ) Yes, based on visual sighting		( ) Yes, based on other information	
	( ) No	( ) Unknown			
h)	Traffic information issued				
	( ) Yes, based on radar	( ) Yes, based on visual sighting		( ) Yes, based on other information	
	( ) No	( ) Unknown			
i)	Avoiding action taken				
	( ) Yes	( ) No		( ) Unknown	

*Delete as appropriate

4. Distance

a) Closest horizontal distance

b) Closest vertical distance

5. Flight weather conditions

a) IMC / VMC*

b) Above / below* clouds / fog / haze or between layers*

c) Distance vertically from cloud _____ m / ft* below _____ m / ft* above

d) In cloud / rain / snow / sleet / fog / haze*

e) Flying into / out of* sun

f) Flight visibility _____ m / km*

6. Any other information considered important by the pilot-in-command

D — MISCELLANEOUS

1. Information regarding reporting aircraft

a) Aircraft registration

b) Aircraft type

c) Operator

d) Aerodrome of departure

e) Aerodrome of first landing _____ destination

f) Reported by radio or other means to _____ (name of ATS unit) at time UTC

g) Date / time / place of completion of form

2. Function, address and signature of person submitting report

a) Function

b) Address

c) Signature

d) Telephone number

3. Function and signature of person receiving report

a) Function _____ b) Signature _____

*Delete as appropriate

E — SUPPLEMENTARY INFORMATION BY ATS UNIT CONCERNED

1. Receipt of report

a) Report received via AFTN / radio / telephone / other (specify)* _____

b) Report received by _____ (name of ATS unit)

2. Details of ATS action

Clearance, incident seen (radar/visually, warning given, result of local enquiry, etc.)

_____

_____

_____

_____

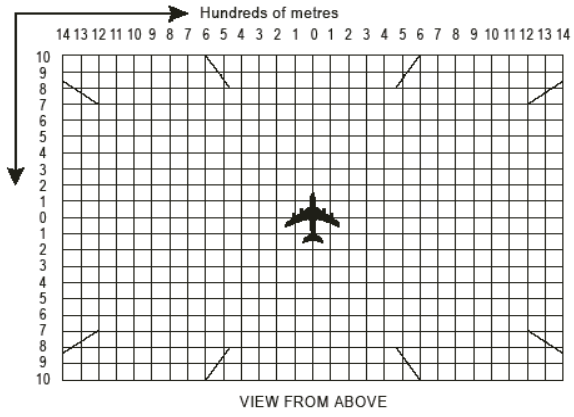
_____

_____

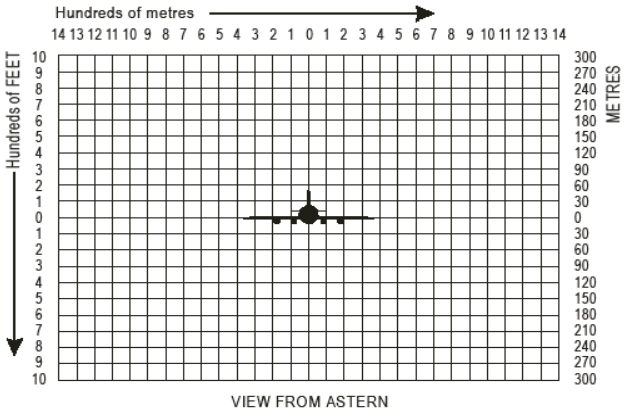
_____

DIAGRAMS OF AIRPROX

Mark passage of other aircraft relative to you, in plan on the left and in elevation on the right, assuming YOU are at the centre of each diagram. Include first sighting and passing distance.



VIEW FROM ABOVE



VIEW FROM ASTERN

*Delete as appropriate

Instructions for completion of the Air Traffic Incident Report Form	
Item	
A	Aircraft identification of the aircraft filing the report.
B	An AIRPROX report shall be filed immediately by radio.
C1	Date / time UTC and position in bearing and distance from a navigation aid or in LAT / LONG.
C2	Information regarding aircraft filing the report, tick as necessary.
C2 c)	E.g. FL 350 / 1013 HPA or 2500 FT / QNH 1 007 HPA or 1200 FT / QFE 998 HPA.
C3	Information regarding the other aircraft involved.
C4	Passing distance - state units used.
C6	Attach additional papers as required. The diagrams may be used to show aircraft's positions.
D1 f)	State name of ATS unit and date / time in UTC.
D1 g)	Date and time in UTC.
E2	Include details of ATS unit such as service provided, radiotelephony frequency, SSR Codes assigned and altimeter setting. Use diagram to show the aircraft's position and attach additional papers as required.

APPENDIX-C

Civil Aviation Authority of Nepal

ATS Incident Report Form

(To be filled by ATS personnel)

CATEGORIES OF OCCURRENCE							
1 ACCID☐ AIRPORX ☐ INCID☐VIOLATION☐INFRINGEMENT ☐							
2 Occurrence Position	3 FL ☐ALT/HT☐	4 Date (dd/mm/yyyy)	5 Time - UTC (HH:MM)		6 Day ☐Night ☐		
OPERATOR	CALLSIGN/ REGN	TYPE	FROM	TO	SSR CODE	MODE C DISPLAYED	IFR/VFR/SVFR
7	8	9	10	11	12	13 ☐YES ☐NO	14
15	16	17	18	19	20	21 ☐YES ☐NO	22
23	24	25	26	27	28	29 ☐YES ☐NO	30
31 RTF Frequencies	32 Radar Equipment	33 Equipment unserviceability			34 QNH	35 Runway in use	
36 Class & Type of Airspace		37 ATS PROVIDED	38 SID/STAR/ROUTE				
39 Was prescribed separation lost?		40 Min. Separation Horizontal ……. nm Vertical …….. ft	41 Alert Activation Collision☐ CA ☐ TCAS ☐ STCA ☐		42 Traffic info given by ATC? ☐YES ☐NO	43 Avoiding action given by ATC? ☐YES ☐NO	
44 BRIEF TITLE Summary							
45 NARRATIVE -use a diagram if necessary (Include NOTAM if necessary.) *se additional sheet if necessary.)*							
46 Name	47 On duty as	48 ATS Unit	49 Time since last break		50 Start time of shift (UTC)	51 Radar recordings held ☐YES ☐NO	
52 RTF recordings held ☐YES ☐NO	53 List other agencies advised …… ……	54 Signature ……	55 Date (dd/mm/yyyy) ……				
56 Address …… …… Telephone ……							

APPENDIX D

Civil Aviation Authority of Nepal

Bird/Other Wildlife Strike Report Form

(To be filled by Pilots, ATC, Airport operator, Airline, Safety personnel, etc.)

<table>
<tr><td colspan="7">1. CATEGORIES OF OCCURRENCE
ACCID☐ INCID ☐HAZARD☐ BIRDSTRIKE☐WILDLIFE STRIKE ☐(Shall fill one of first three boxes and one of the last two boxes.)</td></tr>
<tr><td colspan="2">2. Name of Operator</td><td colspan="2">3. Aircraft Make/Model</td><td colspan="3">4. Engine Make/Model</td></tr>
<tr><td colspan="2">5. Aircraft Registration</td><td colspan="2">6. Date of Incident (dd/mm/yyyy)</td><td colspan="3">7. Time of Incident (UTC) ……
☐Dawn☐Dusk
☐Day ☐Night</td></tr>
<tr><td colspan="2">8. Airport Name</td><td colspan="2">9. Runway Used</td><td colspan="3" rowspan="2">10. Location if en-route (Nearest city, place, etc.)</td></tr>
<tr><td colspan="2">11. FL/ALT/HT (ft)</td><td colspan="2">12. Speed (IAS- kts)</td></tr>
<tr><td rowspan="2">13. Phase of Flight

☐A.Parked
☐B.Taxi
☐C.Take-off Run
☐D.Climb
☐E.Enroute
☐F.Descend
☐G.Approach
☐H.Landing Roll</td><td colspan="6">14. Parts of Aircraft Struck or Damaged</td></tr>
<tr><td></td><td>Struck</td><td>Damaged</td><td></td><td>Struck</td><td>Damaged</td></tr>
<tr><td></td><td>A. Radome
B. Windshield
C. Nose
D. Engine No. 1
E. Engine No. 2
F. Engine No. 3
G. Engine No. 4</td><td>☐
☐
☐
☐
☐
☐
☐</td><td>☐
☐
☐
☐
☐
☐
☐</td><td>H. Propeller
I. Wing/Rotor
J. Fuselage
K. Landing Gear
L. Tail M. Lights
N. Other:
(Specify)</td><td>☐
☐
☐
☐
☐
☐</td><td>☐
☐
☐
☐
☐
☐</td></tr>
</table>

15. Effect on Flight	16. Sky Condition	17. Precipitation
☐ None ☐ Aborted Take-off ☐ Precautionary Landing ☐ Engine Shut Down ☐ Other: (Specify)	☐ No Cloud ☐ Some Cloud ☐ Overcast	☐ Fog ☐ Rain ☐ Snow ☐ None

18. Bird/Other Wildlife Species	19. Number of Bird(s)/Wildlife			20. Size of Bird(s)/Wildlife
	Number	Seen	Struck	☐ Small ☐ Medium ☐ Large
	1	☐	☐	
	2-10	☐	☐	
	11-100	☐	☐	
	More than 100	☐	☐	

21. Pilot warned of Birds	☐ Yes	☐ No

22. Detail Information *(Describe damage, injuries and other pertinent information)*

(Use additional sheet if necessary.)

23. Reported by	24. Title	25. Date