



**ETHIOPIA
AIP
AERONAUTICAL INFORMATION
PUBLICATION**

CIVIL AVIATION AUTHORITY

PART ONE

GENERAL

[GEN]

PART 1 GENERAL (GEN)

GEN 0.

GEN 0.1 PREFACES**1. Name of the publishing Authority**

The authority responsible for Civil Aviation in Ethiopia is the Ethiopian Civil Aviation Authority under the Ministry of Transport.
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CIVIL.AVIATION@ethionet.et**2. Applicable ICAO documents**

The Aeronautical Information Publication (AIP) is prepared in accordance with the Standards and Recommended Practices of Annex 15 to the Chicago Convention and Guidance Material in the Aeronautical Information Services manual (ICAO Doc 8126-AN 872). Charts contained in this AIP are produced in accordance with Annex 4 to the Chicago Convention and the Aeronautical Chart Manual (ICAO Doc 8697-AN 889). This

AIP is published by the authority of the Director General of Civil Aviation Authority. Differences from ICAO Standards, Recommended Practices and Procedures are given in sub section GEN 1.7.

3. The AIP structure and established regular amendment interval**3.1 The AIP structure**

The AIP forms the new ICAO Integrated Aeronautical Information Package, details of which are in section GEN 3.1. The principal AIP structure is shown in graphic form on page GEN 0.1.6.

This AIP issued in one volume is the basic aeronautical information document for Ethiopia and contains aeronautical information of a lasting character essential to air navigation.

The AIP forms part of the Integrated Aeronautical Information Package, which is divided into three parts, General (GEN), Enroute (ENR) and Aerodromes (AD), each of which is further divided into items and sub items containing various types of aeronautical information.

3.1.1 Part 1-General (GEN)

Part 1 Consists of five sections containing information as briefly described hereafter.

GEN 0 Preface; Record of AIP Amendments; Record of AIP Supplement; Checklist of AIP pages; List of hand amendments to the AIP; and the Table of contents to Part 1.

GEN 1. National regulations and Requirements -Designated Authorities; Entry, Transit and Departure of Aircraft, Entry Transit and Departure of Passengers and Crew; Entry Transit and Departure of Cargo; Aircraft instruments, Equipment and Flight Documents Summary of National Regulations and International Agreements/Conventions and Differences from ICAO Standards, Recommended Practices and Procedures.

GEN 2. Tables and codes-Measuring System, Aircraft Markings, Holidays; Abbreviations used in AIS Publications; Chart Symbols; Location Indicators; List of Radio Navigation Aids; Conversion Tables; and Sunrise/Sunset Tables.

GEN 3 Services-Aeronautical Information Services; Aeronautical Charts Air Traffic Services, Communication services; Meteorological Services; and Search and Rescue.

GEN 4. Charges for Aerodromes/Heliports and Air Navigation Services.

3.1.2 Part 2 En route (ENR)

Part 2. Consists of seven sections containing information as briefly described hereafter.

ENR 0. Table of contents to part 2.

ENR 1.**GENERAL RULES AND PROCEDURES**

General rules; Visual flight rules; Instrument flight rules; ATS airspace classification; Holding, approach and departure procedures; Radar services and procedures; Altimeter setting procedures; Regional supplementary procedures; Air traffic flow management; Flight planning; Addressing of flight plan messages; Interception of civil aircraft; Unlawful interference; and Air traffic incidents.

ENR 2**AIR TRAFFIC SERVICES AIRSPACE**

Detailed description of Flight Information Regions (FIR), Upper flight Information Regions (UIR), and terminal control areas (TMA); and other regulated airspace.

ENR 3**ATS ROUTES**

Detailed description of: lower ATS routes; upper ATS routes; helicopter routes; other routes; and en-route holding.

ENR 4**RADIO NAVIGATION AIDS/SYSTEMS**

Radio navigation aids-en-route; Special navigation systems; Name-code designators for significant points; and aeronautical ground lights-en-route.

ENR 5**Navigation warnings**

Prohibited, restricted and danger areas; military exercise and training areas; other activities of dangerous nature; air navigation obstacles-en-route; aerial sporting and recreational activities; and bird migration and areas with sensitive fauna.

ENR 6**En-route chart- ICAO****Part 3 - Aerodromes (AD)**

PART 3 Consists of four sections containing information as briefly described hereafter.

AD 0**Table of contents to part 3**

AD 1**Aerodromes/heliports - Introduction**

Aerodrome/heliport availability; Rescue and fire fighting services and snow plan; Index to aerodromes and heliports; and Grouping of aerodromes/heliports.

AD 2**Aerodromes**

Detailed information about aerodromes, including helicopter landing areas, if located at the aerodromes.

3.2 Regular Amendment Interval

AIP Ethiopia is available in English only and is maintained up-to-date by an amendment service at regular intervals of twice a year. The publication dates will be on the first AIRAC dates of June and December of each year.

AIP amendment service consists of reprinted pages and in the case of minor amendments, manuscript corrections, amendments together with checklists are normally issued as and when necessary. When an AIP amendment will not be

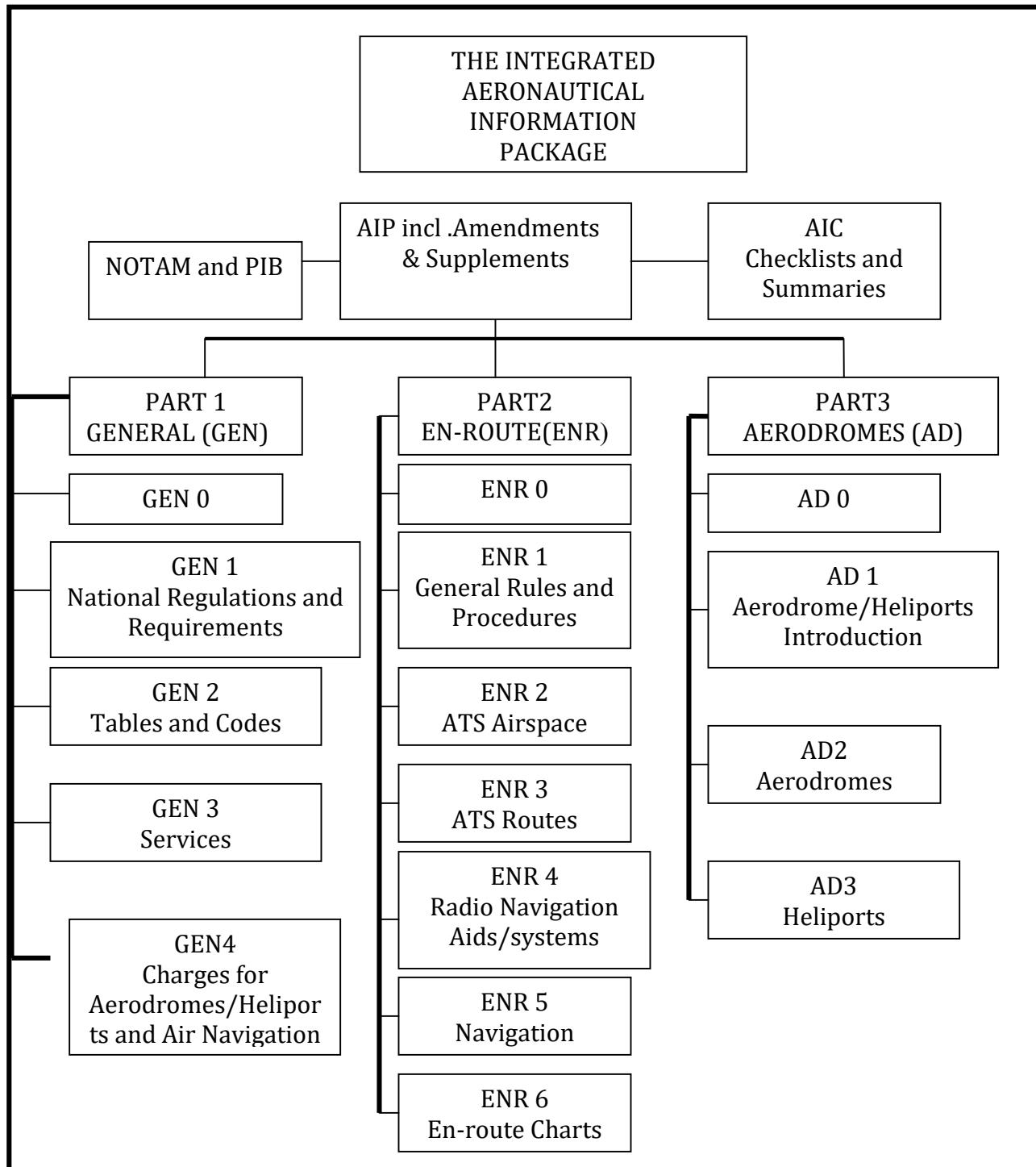
published at the established interval or publication dates, a nil notification shall be originated and distributed by the monthly printed plain-language summary of NOTAM.

4. Service to contact in case of detected AIP errors or omissions.

In the compilation of the AIP, care has been taken to ensure that the information contained therein is accurate and complete. Any errors or omissions which may nevertheless be detected as well as any correspondence concerning the Integrated Aeronautical Information Package mentioned in this preface should be referred to:

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GEN 4. CHARGES FOR AERODROMES/HELIPORTS AND AIR NAVIGATION SERVICES

GEN4.1	Aerodrome/Heliport charges	GEN 4.1-1
GEN 4.1-1	Landing aircraft	GEN 4.1-1
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GEN 4.2	Air Navigation facility charges	GEN 4.2-1

GEN 1.NATIONAL REGULATIONS AND REQUIREMENTS
GEN 1.1 DESIGNATED AUTHORITIES

The addresses of designated authorities concerned with facilitation of international air navigation are as follows:

1. ETHIOPIAN CIVIL AVIATION AUTHORITY

Postal Address: Ethiopian Civil Aviation Authority
 P.O.Box: 978, Addis Ababa, Ethiopia
 Telephone: 251 11 665 02 52,
 251 11 665 02 00
 Tele fax: 251 11 665 02 81
 251 11 665 02 69
 AFTN: HAAAYAYX
 E-mail: CIVIL.AVIATION@ethionet.et

2. ETHIOPIAN AIRPORTS ENTERPRISE

Postal Address:ETHIOPIAN AIRPORTS ENTERPRISE
 P.O.BOX:90652
 ADDIS ABABA, ETHIOPIA
 Telephone: 251 11 665 04 00
 251 11 6650565
 Telefax: 251 11 665 06 86
 E-mail: Bole.ap@ethionet.et

3. METEOROLOGY

Postal Address:
 National Meteorological Services Agency
 P.O.BOX:1090
 ADDIS ABABA, ETHIOPIA
 Telephone Number: 251 11 551 22 99
 251 11 661 57 79
 Telefax: 251 11 551 70 66
 E-mail: nmsa@ethionet.et

4. CUSTOMS

Postal Address: Ethiopian Customs Authority
 P.O.BOX:3248
 Addis Ababa, Ethiopia
 Telephone Number: 251 11 551 31 00
 251 011 665 04 82(airport)
 Telefax: 251 11 551 83 55

5. IMMIGRATION

Postal Address: Security for Nationality Affairs
 P.O.BOX:5741
 Addis Ababa, Ethiopia
 Telephone Number: 251 11 155 38 99,
 251 11 155 08 42/36,
 251 11 662 37 55
 Telefax 251 11 155 32 09

6. HEALTH

Postal Address:Ethiopian food, medicine & health care administration & control Authority
 P.O.BOX:5681
 Addis Ababa, Ethiopia
 Telephone Number: 251 11 552 41 22,
 251 11 552 41 23
 Telefax 251 11 552 13 92
 Air port health quarantine:
Tel:251 11 665 02 23, 251 11 665 13 52
 e-mail :daca@ethionet.et

7. EN-ROUTE CHARGES AND AERODROME CHARGES

EN-ROUTE CHARGES

Postal Address: ETHIOPIAN CIVIL AVIATION AUTHORITY
 FINANCE DEPARTMENT
 P.O.BOX:978
 ADDIS ABABA, ETHIOPIA
 Telephone Number: 251 11 665 02 58
 Telefax: 251 11 665 02 81
 E-mail:
CIVIL.AVIATION@ethionet.et

AERODROME CHARGES

Postal Address: ETHIOPIAN AIRPORTS ENTERPRISE
 FINANCE DEPARTMENT
 P.O.BOX:90652
 ADDIS ABABA, ETHIOPIA
 Telephone Number: 251 11 6650670
 251 11 6650566
 E-mail: Bole.ap@ethionet.et

8. AGRICULTURAL QUARANTINE

Postal Address Bole Airport Hygiene
and Quarantine
P.O.BOX:3056
ADDIS ABABA, ETHIOPIA
Telephone Number:251 11 618 02 42
11 665 03 02

9. AIRCRAFT ACCIDENTS

INVESTIGATION

Bureau

Postal Address: ETHIOPIAN
CIVIL AVIATION AUTHORITY

P.O.BOX:978
ADDIS ABABA, ETHIOPIA
Telephone Number:251 11 665 02 73
Telefax number:251 11 665 02 81
E-mail: ecaa.aib@ethionet.et

1.2 ENTRY, TRANSIT AND DEPARTURE OF AIRCRAFT**1. General**

- 1.1 All flights into from, or over the territory of Ethiopia shall be complied with the regulations of Ethiopia regarding Civil Aviation.
- 1.2 Aircraft landing in or departing from the territory of Ethiopia must make their first landing at International Airport. Under no circumstances shall an aircraft be permitted to use a domestic aerodrome as a point of departure for abroad.
- 1.3 To use any of the aerodromes in Ethiopia the user must first obtain prior authorization from the Civil Aviation Authority.
- 1.4 Aircraft shall arrive or depart within the time limits of operation of air traffic services and aerodrome facilities indicated in the AIP (see AD2.3). In case no hours of operation are mentioned in the AIP, these shall be obtained upon request

2. Scheduled Flights**2.1 General**

2.1.1 For regular international scheduled flights operated by foreign airlines into from, or in transit across Ethiopia, the following requirements must be met.

- a) The airline must have been designated pursuant to a bilateral or multilateral agreement signed by Ethiopia and the state in which the airline is registered.
- b) The airlines permitted to operate into, from or in transit across Ethiopia should notify in time the Ethiopian Civil Aviation Authority about their intended scheduled flights or alteration of them. Application for such permits shall be submitted at the following address:

Postal Address:

Ethiopian Civil Aviation Authority

P.O.BOX:978

Addis Ababa, Ethiopia

Telephone: 251 11 665 02 52,251 11 665 02 00
Ext 293,349

Tele fax 251 11 665 02 81

251 11665 02 69,251 11 665 05 15

AFTN:HAAAYAYX

E-mail: CIVIL.AVIATION@ethionet.et

2.2 Documentary requirements for clearance of aircraft

2.2.1 It is necessary that the under mentioned aircraft documents be submitted by operators for clearance on entry and departure of their aircraft to and from Ethiopia.

All documents listed below must follow the ICAO standard format as set forth in the relevant appendices to Annex 9 and are acceptable when furnished in English or Amharic and completed in print or in legible handwriting.

2.2.2 Aircraft document required

a) Arrival-Five copies of the Passenger Manifest distributed as follows:

Two copies for the Immigration Authorities

One copy for the Quarantine Office

One copy for the Customs Authorities

One copy for the Airport Administration

b) Departure-Six copies of the Passenger Manifest distributed as follows:

Three copies for the Immigration Authorities

One copy for the Quarantine Office

One copy for the Customs Authorities

One copy for the Airport Administration.

c) Transit Flight

If no passengers are embarking or disembarking and no articles are laden or unladen, no aircraft documents need be submitted.

3. Non-Scheduled Flights**3.1 General**

3.1.1 If an operator intends to carry out the following flights it must apply to Ethiopian Civil Aviation

Authority (see address in 2.1.1 above) for permission to carry out such operations:

a) A non-scheduled (a series of non-scheduled flights) in transit across or making non traffic stops in the territory of Ethiopia. Non-scheduled flights (a series of non-scheduled flights) into Ethiopia for the purpose of taking on or discharging passengers' cargo or mail.

- 3.1.2 The application must reach the Authority not less than 24 HRS. When commercial telegram service is used for such request, it shall always be on a reply paid basis. However, aircraft shall not enter the Ethiopian airspace prior to obtaining the necessary permit.
- 3.1.3 The application to perform such flights shall contain the following information:-
- a) Name of Operator/Owner of aircraft (complete address of the operator or charter aircraft).
 - b) Call sign, registration marks and type of aircraft.
 - c) Point of departure and destination.
 - d) Date and time of arrival at and departure from the airport concerned.
 - e) Purpose of flight and number of passengers and/or description and weight of cargo.
 - f) Point of entry into Ethiopia (Lat. & Long. and route).
 - g) Point of exit from Ethiopia (Lat. & Long. and route).
 - h.) Postal address of the operator for billing.

3.2 State Aircraft

Permission from the Ministry of Foreign Affairs is to be obtained for state aircraft to land in or over fly the territory of Ethiopia.

The application for such a request should be directed to the following address with particulars detailed in para.3.1.3 above

Postal Address: Ministry of
Foreign Affairs
P.O.Box: 393, Addis Ababa,
Ethiopia
Telephone Number 251 11 551 43 00
Tele fax 251 11 551 12
44,251 11 551 43 00
E-mail
MFA.Addis@ethionet.et

3.3 Charter Flight

- 3.3.1 Charter flights shall not be operated to or from Ethiopia without the prior approval of the Ethiopian Civil Aviation Authority.
- 3.3.2 The following policy and procedures apply to all IATA and non-IATA carriers

operating scheduled or non-scheduled (charter) services to or from Ethiopia.

- a) Only those charter flights which do not divert significant amount of traffic from scheduled services will be permitted.
- b) Such charter flights have in exceptions circumstances will be operated by the national airline of Ethiopia or by an air carrier of the country of initial origin or ultimate destination of the traffic.

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- c) Other air carriers may be granted permission to operate charters if the air carriers in paragraph (b) above are unable to comply with 3.3-2 (b) above.
- d) Such charter flights shall comply in all respects with relevant IATA Resolutions in force at the time of application for a License.
- e) The Ethiopian Civil Aviation Authority will treat application for "Block off Scheduled Flights" as charter flights and the operations of such flights will be subject to the IATA Resolutions related to charter flights.
- f) Application for "own use" (entity) charters will be dealt with on the merits of each case.
- 3.3.3 Applications for charter licenses must be in the hands of the Ethiopian Civil Aviation Authority not less than seven (7) days prior to the proposed date of operation. Applications filed through commercial telegraphic service must be on a reply-paid basis.
- 3.3.4 Such applications must include the following information:-
- a) Name of operator/owner of aircraft (complete address of the operator of charter of aircraft) and local agent if any.
 - b) Call sign, registration mark and type of aircraft.
 - c) Point of departure and destination.
 - d) Date and time of arrival at and departure from the airport concerned.
 - e) Type of charter (e.g. own use).
 - f) Whether charter is in conformity with IATA Resolution 045 or not.
 - g) Complete itinerary including date, times (UTC) and places
 - h) Number of crew and number of passengers and/or description and weight of cargo.
 - i) Copy of a completed charter application using the form.
 - j) Name of passengers if charter originates in Ethiopia.
- 3.3.5 Document requirements for clearance of aircraft
- 3.3.5.1 Same requirements as for SCHEDULED FLIGHTS
- 4. Private Flights**
- 4.1 Advance notification of arrival**
- 4.1.1 Private aircraft wishing to perform a private flight to Ethiopia or over flying the territory of Ethiopia are required to obtain prior permission from Ethiopian Civil Aviation Authority as mentioned for non-scheduled flights (see Para 3.1.1 to 3.1.3 inclusive).
- 4.2 Document requirements for clearance of aircraft**
- 4.2.1 Same requirements as SCHEDULED FLIGHTS
- 5. Public health measures applied to aircraft**
- The following health measures are required to be carried out in respect of aircraft entering Ethiopia.
- a. The pilot in command of an aircraft must, on landing at the first airport, complete and deliver a General Declaration to the port Health Officer of that airport.
 - b. At least thirty minutes prior to the departure aircraft must be disinfected if arriving from an endemic yellow fever area or a malaria area. This action must be properly recorded in the health section of the General Declaration. The insecticide to be used must conform the specifications of the World Health Organization.
 - c. If evidence of possible health risks including infection or contamination sources is detected on board of aircraft, the aircraft shall be sent to the sanitation station to use all necessary specific health measures in accordance with International Health regulations (IHR, 2005). By the decision of the port Health Officer.

- d. Any illness or condition, on board an aircraft, must be recorded on the General Declaration and reported to the port Health Officer, including but not limited to severe vomiting, diarrhea and high fever.
- e. All International Travelers coming to Ethiopia from yellow fever zone or in transit through yellow fever zone must possess a valid International Certificate of yellow fever vaccination.

5.2 Acceptable methods of disinfection

a) Outgoing aircraft:-IDS inspection before take-off. When disinfection is required, all aircraft leaving Ethiopia will be properly sprayed by means of automatic or hand operated aerosol of a standard strength and formula particularly into those portions of the aircraft which could not basically be reached. All possible mosquito sheltering places such as flight deck, cargo holds, wheel wells and other external apertures shall be sprayed by the quarantine officers assigned at the international airport. Airlines, however, shall not disinfect the aircraft while flying, or in any case while passengers are still in the aircraft.

b) Incoming aircraft:-Operating airlines shall not disinfect their respective aircraft, while the aircraft is in flight but as soon as possible after landing when all passengers have disembarked from the aircraft and at least 30 minutes prior to the time of departure.

Luggage compartment and others that could not be easily reached, however, may be sprayed as near as possible to the time of the aircraft's last departure.

**GEN 1.3 ENTRIES, TRANSIT AND DEPARTURE OF
PASSENGERS AND CREW****1. Custom Requirements****1.1 Passenger's Baggage**

Baggage, the property of and accompanying a passenger may be cleared to a verbal declaration except where any goods in such baggage are liable to duty and tax a written declaration must be submitted.

1.1.1 The following articles are allowed to enter free of customs duty and tax:

a) Persons arriving to take up residence in Ethiopia

Upon first arrival, baggage, the property of and accompanying said person or landed at any customs station within a period of 3 months of first arrival or such further period as the customs authorities may allow:

- i) Necessary and appropriate wearing apparel, personal jewelry and toilet requisites;
- ii) Articles for household use, such as furniture, carpets, glassware, pictures, crockery.
- iii) Cutlery, plate and sewing machines, and such additional articles as binoculars, cameras (including cinematographer cameras of 8,9.5 and 16 mm), sports equipment, portable typewriters and toys, which are demonstrated to the satisfaction of customs to have been in the personal or household use of passengers prior to importation and which are not intended for sale.

b) Returning residents of Ethiopia:

Returning Ethiopians having stayed abroad on business, education and various purposes of as refugees may import goods for personal and family use on duty free basis as per the directives issued by the Ministry of Revenue.

c) Investors:

Foreign investors and Ethiopian investors residing abroad may import goods for personal use on duty free basis as per the directives issued by the Ministry of Revenue. The directives issued by the Ministry of Revenue are available at the Ethiopian Embassies abroad.

d) **Luggage of passengers:** Accompanied luggage of a type described below are Permitted duty free.

One radio ii) One photo camera (not professional) iii) All personal clothes & shoes iv) Recorded audio & video cassettes (six each) v) personal care perfumes, soap, shaves, tooth brush, creams vi) Lipsticks etc (six each) vii) Two (2) liters of beverage, whether or not containing alcohol viii) Cigars not exceeding twenty (20) packs in number and tobacco not exceeding five hundred (500) grams.

e) **Bona-fide tourists:** Baggage, the property of and accompanying said person:

- i) Necessary and appropriate wearing apparel, personal jewelry and toilet requisites;
 - ii) Two (2) liters of alcoholic beverage, whether or not containing alcohol.
- Cigars not exceeding fifty (50) in number, cigarettes not exceeding twenty (20) in packets, and tobacco not exceeding five hundred (500) grams in weight.

The customs may, subject to the taking of such safeguards as they may deem necessary to guard against the sale within Ethiopia of articles imported by bona-fide tourist, allow the importation of any additional portable articles of baggage appropriate to the tourist or to the purpose of his visit.

2. Immigration requirements

General

2.1.1 No documents or visas are required of passengers arriving and departing on the same flight. The transfer of passengers from one carrier to another shall be approved by the Immigration Authorities.

2.1.2 Passengers are required to complete an Embarkation/Disembarkation Card on entry to or exit from Ethiopia in a legible handwritten script in Amharic or English.

2.2 Entry into Ethiopia

2.2.1 *No foreigner shall enter Ethiopia unless he/she is in possession of:-*

- a) a valid travel document
- b) a valid visa
- c) a valid health certificate as may be prescribed by the Ministry of Health.

2.2.2 Exemptions

a) Holders of the following travel documents are exempted from possessing passport:-

i) Laissez-passer issued by the UN, AU and African Development Bank and if only traveling on duty.

ii) Seaman Book issued by any country and if only traveling on duty.

b) The following are exempted from possessing an entry visa:

- i) Nationals of Ethiopia
- ii) Nationals of Kenya & Djibouti who intend to stay in Ethiopia for a maximum of three months.
- iii) Nationals of who intend to stay in Ethiopia for a maximum of three months.

iv) Nationals of Djibouti holding diplomatic, special and official passports issued by the government of Djibouti and if only traveling on duty.

v) Nationals of Government of the Democratic People's Republic of Algeria with valid Diplomatic, or Service passports, for duration of their mission stay for a maximum of three months.

vi) Foreign nationals of Ethiopian origin who are in possession of ID cards of foreign nationals of Ethiopian origin.

vii) Nationals of Russian Federation with valid Diplomatic, or Service passports, for duration of their mission stay for a maximum of three months.

viii) Nationals of Government of People's Republic of China with valid Diplomatic, or Service passports, for duration of their mission stay for a maximum of three months.

2.3 **Type and issuance of visa:** - Visas shall be issued to foreigners as follows:-

2.3.1 Transit visa

a) A transit visa shall be issued by the Ethiopian Diplomatic and Consular Missions abroad. It may also be issued by Immigration Authorities at ports of entry to transit passengers coming from countries where Ethiopian diplomatic representations do not exist.

b) A passenger holding a transit visa shall in addition possess

i) An air ticket with confirmed reservations to proceed to a third country with the next available flight.

ii) a valid visa and health certificate as required for entry to such country.

b) A transit visa shall upon issuance be valid for not more than seven (7) days.

2.3.2 Tourist Visa

A tourist visa shall be issued by the Ethiopian Diplomatic and Consular Missions abroad. Tourist visa may also be issued upon arrival at Bole International Airport for tourists coming from 36 countries approved by the Immigration and Consular Main Department.

a) A foreigner holding a tourist visa shall in addition possess:-

i) an air ticket for travel from Ethiopia to another country.

ii) If not returning to own country, a valid visa and health certificate as required for entry to such country

- b) A tourist visa shall upon issuance be valid for three months.
- c) Any foreigner who has entered Ethiopia by a tourist visa may not be allowed to work in Ethiopia

2.3.3 *Residence and business visas*

- a) Residence and business visas shall be issued by the Ethiopian Diplomatic and Consular Missions abroad to a foreigner who intends to travel to Ethiopia for purposes other than those specified in para.2.3.1 and 2.3.2 above.
- b) A business visa may also be issued upon arrival for foreigners coming from countries where Ethiopian diplomatic representatives do not exist, provided that their application for such visas are forwarded to and approved by the Immigration and Consular Main Department

2.3.4 *Immigrant Visa*

Immigrant visas shall be issued to the following.

- a) Foreigners who have been adopted by Ethiopians or who have valid marriages with Ethiopians and are coming to reside in Ethiopia and to members of their families.
- b) Family members of foreigners holding permanent resident permits in Ethiopia.
- c) Foreigners coming to reside in Ethiopia without either being engaged in any gainful activities or becoming public burden and to members of their families.

2.3.5 *Extension of visas*

Application for extension of the validity of visas shall be submitted to the Immigration and Consular Main Department and where it is deemed

appropriate, the Department may grant such extensions as follows:-

- a) Tourist and business visas may be extended up to three months at a time and the total extension shall not exceed nine (9) months.

- b) A transit visa shall be extended for a total of fifteen (15) days.

2.3.6 *No foreign child under 18 years of age shall enter Ethiopia unless:-*

- a) He is in possession of a valid travel document and valid visa and is received by an adult.
- b) He is registered in the travel document of an adult who accompanies him.

2.4 **Departure from Ethiopia**

2.4.1 No person shall depart from Ethiopia unless he/she is in possession of:

- a) A valid travel document.
- b) A valid visa and health certificate as required for entry to the country of destination.

Note: Foreigners and foreigners of Ethiopian origin possessing ID card of Foreign Nationals of Ethiopian origin. Foreign visitors whose entry visas remain valid until the end of their stays in Ethiopia are not required to possess exit visas when they leave the country.

2.5 **Crew**

2.5.1 Crew members on a scheduled or non-scheduled air service are granted temporary admission into Ethiopia on the presentation of a crew member license or certificate in lieu of passport.

2.5.2 Crew members entering Ethiopia by other means of transport other than those coming for the purpose of joining an aircraft as a crew should comply with the provisions of para.2.2.1

2.6. Fees**2.6.1**

Fees levied on arriving passengers for the different types of visas are as per the rates indicated below.

No	Type of visa	USD
1	Diplomatic Visa	Gratis
2	Service visa	Gratis
3	Business Visa a)single entry b)multiple entry for three months c) multiple entry for six months d) multiple entry for one year	20.00 30.00 50.00 100.00
4	Immigrant visa	50.00
5	Tourist Visa: a) single entry b) multiple entry for three months c) multiple entry for six months	20.00 30.00 40.00
6	Transit Visa a)single transit b) double transit	20.00 30.00
7	Student Visa	20.00

- 2.6.2 Fees payable for visa extension are the same for all continents/regions and are as follows:-

- Business Visa Birr 145

- Tourist Visa Birr 105

- Transit Visa Birr 101

2.6.3 Exemptions

Holders of Diplomatic, Service and Official Passports and holders of UN, AU and African Development Bank Laissez-passer are exempted from the fees payable for visas.

- 2.7 Validity of Document**
- 2.7.1 Period of validity of passport and special travel documents are as follows:-
- a) Diplomatic Passport.....5years
 - b) Service passport..... 5years
 - c) Ordinary passport..... 5years
 - d) Laissez-passer..... up to 1 year

- e) Emergency Travel Document..... Up to 3 months
- F) Refugee Travel Document..... 1 year.

2.7.2 Alien Passport

An alien passport shall be issued to a resident foreigner who is unable to obtain his national travel document or who is stateless.

2.8 Responsibilities of Airline Operators

- 2.8.1 The operator of any carrier carrying any foreigner who intends to enter Ethiopia shall ensure such foreigner statistics as indicated in the requirement of Para 2.1. above.
- 2.8.2 The operator of any carrier carrying any foreigner who intends to enter Ethiopia shall be responsible for ensuring that such foreigner lands only at designated airport of entry.

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- 2.8.3 The operator of any carrier who fails to comply with the requirements of para.2.8.1 and 2.8.2 Above shall be required, at his own expense, to carry out of Ethiopia any foreigner concerned.
- 2.8.4 The operator of any carrier carrying persons into or out of Ethiopia shall upon arrival at and prior to departure from the airport of entry, submit to the Immigration Authorities a list of all persons being carried into or out of Ethiopia.
- 2.8.5 The operator of any carrier carrying any person out of Ethiopia shall be responsible for determining that each such person satisfies the requirement of para.2.4 above.

2.9 Penalty provision

- 2.9.1 The operator of any carrier who:-
- a) Knowingly brings into or carries out of Ethiopia any person in violation of any provisions hereof or of any regulations issued hereunder, or
 - b) Fails to provide a complete and true list of all passengers brought into or carried out of Ethiopia, or
 - c) Fails to provide a complete and true list of all passengers authorized and brought into or carried out of Ethiopia.
 - d) Fails to carry out of Ethiopia any foreigner covered by the provisions of Para 2.8.5 will be punished with a simple imprisonment of not more than two years or a fine of not more than birr 5000(five thousand).
- 2.9.2 In the case where the person convicted under para.2.9.1 is a juridical person, the punishments shall be a fine of up to birr 20,000(twenty thousand).

2.10 Currency carried by passengers on entry into Ethiopia

- 2.10.1 Passengers entering Ethiopia may carry with them an unrestricted amount of foreign exchange provided it is declared to customs on arrival at the airport of entry.

2.10.2 During his/her stay in Ethiopia, the passenger may convert the foreign exchange into Ethiopian currency (Eth.Birr) by presenting the declaration card to an Authorized Bank or Authorized dealer in Ethiopia.

Note: - Transaction in foreign exchange other than with Authorized Banks or dealers are prohibited.

- 2.10.3 When leaving the country, the passenger may take with him/her the unused portion of the foreign exchange provided the declaration card is presented to the customs at the airport of exit.
- 2.10.4 In their own interest, temporary visitors are requested to obtain an official receipt proving surrender of foreign exchange to the hotel in settlement of all bills and acquiring birr notes in exchange. All such receipts should be presented to the Exchange Agency at Addis Ababa or Dire Dawa international airports when applying for exchange into foreign currency of any excess Ethiopian Currency Notes on departure from Ethiopia.

- 2.10.5 Only persons leaving Ethiopia with a travel visa or persons entering into Ethiopia may carry with them Ethiopian Currency up to Birr 10.00.

3. Public Health Requirements

- 3.1 **Yellow Fever:**-A Yellow Fever vaccination certificate is required from travelers over 1 year of age coming from infected areas and also when leaving Ethiopia.
Exempt are:-Transit passengers not leaving the airport.

- 3.2 **Malaria:**-Malaria risk exists throughout the year in the whole country below 2000 meters elevation.

GEN 1-4 Entry, transit and departure of cargo**1. Customs Requirements Concerning Cargo and Other Articles**

- 1.1 All goods imported into or exported from Ethiopia are subject to permit from the Exchange Controller, National Bank of Ethiopia to which application should be made.
- 1.2 Upon importation or exportation, the following documents are required for the clearance of goods through customs:
 - a) Invoices
 - b) Air freight document (airway bill)
 - c) Insurance document
 - d) Bank permit
- 1.3 Upon importation or exportation, customs duties are chargeable on all goods which are classified as trade items.
- 1.4 Although goods for export are subject to license from the Exchange Controller, an open license has been granted for tourists and temporary visitors to take with them on departure any souvenir, product of manufacture of Ethiopian origin which they have purchased during their stays without restriction as to value.

Note: *For the export of skins, hides and antique articles export certificates are required.*

- 1.5 As regards air cargo being transferred from one flight to another flight at the same airport and with respect to goods retained aboard an aircraft for onward-carriage to a destination outside Ethiopia, the pilot in-command will be required to present the cargo manifest for examination by the customs authorities.
- 1.6 In case of cargo and other articles being transferred from one international airport to another international airport in Ethiopia, the customs authorities at the first airport will check the cargo manifest and issue a transit permit for such cargo or other articles sealed and accompanied by proper documents.

2. Agricultural quarantine requirements

- 2.1 Each import or export of animals and plants to and from Ethiopia must be accompanied by proper veterinarian good health certificates.

GEN 1.5 AIRCRAFT INSTRUMENTS, EQUIPMENT AND FLIGHT DOCUMENTS

1. General

All airplanes (Commercial and Non-Commercial Air Transport Aircraft) operating within the Addis Ababa FIR shall carry aircraft instrument Equipment and Flight Documents stipulated in the Ethiopian Civil Aviation Authority's (ECAA) Directive-General Aircraft Operating Rules and Procedures- ECARAS part 8 in addition, commercial Air Transport aircraft shall carry the instrument and equipment stated in CAA Commercial Air Transport Operations ECARAS part 7.1.1.4

2. INSTRUMENTS AND EQUIPMENTS

2.1 Special equipment to be carried -----

NIL

- 2.2 All civil fixed-wing turbine-engine aircraft having a maximum take-off mass exceeding 15,000kg or a maximum approved passenger seating configuration of more than 30.**
- 2.2-1 Radio apparatus capable of providing traffic advisories (TA) and resolution advisory (RA) in the vertical plane for the purpose of Airborne Collision Avoidance (ACAS II).**
Procedure to protect aircraft that are appropriately equipped with ACAS-II and pressure altitude reporting transponders:-
 - a) With effect from January 1, 2005 Turbine Engined Aeroplanes with a maximum certificated take-off mass in excess of 5700kg or authorized to carry more than 19 passengers that are not equipped with

ACAS-II. But equipped with pressure altitude reporting transponders shall not be permitted to enter the Addis Ababa Bole International airport control zone during the time international commercial air transport aircraft equipped with ACAS-II are in operation at the airport.

- b) ATC shall instruct such flights to remain outside Addis Ababa CTR until such time that international commercial air transport aircraft have landed or departed from the airport.
- c) In order to avoid the inconvenience that may be caused, operators of aircraft with the above specific conditions are instructed to re-schedule their operation to/from the airport in close co-ordination with the relevant ATS authority.

General Aviation aircraft that are not equipped with pressure altitude reporting transponders (REF. 07/2002 of September 12, 2002) shall not be permitted to enter the CTR during the time international commercial air transport operations equipped with ACAS-II are in progress at the airport.

- d) Those aircraft that are equipped with pressure altitude reporting transponders shall be accepted within the control zone when clearance is obtained from the appropriate ATS unit during the day time only.
- e) Turbine Engined Aeroplanes referred to in (a) above shall not enter into international commercial operation. One time special authorization may be granted by the appropriate authority on a case by case basis.
- f) International commercial aircraft equipped with ACAS-II shall always have priority of operation to/from the airport over non-ACAS-II equipped aircraft.

- g) Non-ACAS-II equipped aircraft shall not fly along designated ATS routes or cross such routes without clearance from the appropriate ATS unit.
- h) The Pilot in command of non-ACAS-II equipped aircraft shall comply

with the provisions stated above and also be responsible to fly clear of all designated ATS routes and maintain his own lateral separation from such ATS routes unless authorized by the relevant ATS unit.

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GEN 1-6 Summary of National Regulations and International Agreements/Conventions

1. National Regulations

The following is a list of Civil Aviation Legislation, Air Navigation Regulation, and etc. ratified and enforce in Ethiopia. It is essential that persons engaged in Air Navigation in this country be acquainted with the relevant regulations.

1.1 Ethiopian Civil Aviation Re-establishment Proclamation no.616/2008.

This legislation enacted by the House of People's Representatives lays the foundation of Civil Aviation in the country. Other legislations are based on this proclamation.

1.2 The Registration of Aircraft Regulation no 306/1965/ as amended

This legislation governs aircraft registration in Ethiopia.

1.3 Montreal Convention For The Unification of Certain Rules For International Carriage By Air Ratification Proclamation No 820/2014

Copies of the documents may be obtained at the price quoted there under from the following address.

Berhanena Selam Printing Press
P.O.Box 980
Addis Ababa, Ethiopia

Other legislations

Different Directives issued by the Ethiopian Civil Aviation Authority govern air transport and navigation.

These Directives include:

- Aviation Personnel,etc
- Airworthiness

Copies of other legislation may be obtained at a price quoted there under from:

Aviation Regulation Deputy General
Director Bureau
Ethiopian Civil Aviation Authority
P.O.Box 978
Addis Ababa, Ethiopia
Fax- 251-11 665 02 81
E-mail caa.airnav@ethionet.et

2 International Agreement**2. INTERNATIONAL AGREEMENTS/CONVENTIONS**

REF NO.	Title	Date of ratification	Content
1	Convention on International Civil Aviation (Chicago)	1/3/47	Agreement on certain principles and arrangements.
2	International Air Services Transit Agreement (Chicago)	22/3/45	TWO Freedoms agreement.
3	International Air Transport Agreement (Chicago)	22/3/45	"FIVE Freedoms" agreement.
4	Article 45 (Montreal)	25/10/54	Amendment to the convention
5	Article 48 (a), 49 (e) and 61 (Montreal)	25/10/54	Amendment to the convention
6	Article 50 (a) (Montreal)	23/1/63	Amendment to the convention
7	Article 50 (a) (New York)	16/6/71	Amendment to the convention
8	Article 56 (a) (Vienna)	9/9/71	Amendment to the convention
9	Article 50 (a) (Montreal)	22/4/75	Amendment to the convention
10	Article 56 (Montreal)	15/12/99	Amendment to the convention
11	Protocol of Amendment (Final Clause) (Montreal)	6/9/79	Amendment to the convention
12	Article 83 bis (Montreal)	25/6/81	Amendment to the convention
13	Article 3 bis (Montreal)	22/5/85	Amendment to the convention
14	Convention on the International Recognition of Rights in aircraft	7/6/79	Rights in aircraft internationally
15	Convention for the Unification of Certain Rules relating to international carriage by air (Warsaw)	14/8/50	Agreement with regard the amount of compensation on damages
16	Additional protocol No.1(Montreal)	14/7/87	Amendment to the Warsaw convention
17	Additional protocol No.2	14/7/87	Amendment to the Warsaw convention
18	Additional protocol No.3	14/7/87	Amendment to the Warsaw convention
19	Montreal protocol No 4	14/7/87	Amendment to the Warsaw convention
20	Convention on offences and certain other acts committed on board an aircraft	27/3/79	Offences or acts committed by a person on board an aircraft and the measures to be taken.
21	Convention for the Suppression of Unlawful Seizure of aircraft	26/3/79	Suppression of seizure of aircraft
22	Convention for the Suppression of unlawful Acts against the safety of Civil Aviation	26/3/79	Unlawful acts of seizure or exercise of control of aircraft in flight and the measures to be taken.

2. INTERNATIONAL AGREEMENTS/CONVENTIONS

REF NO.	Title	Date of ratification	Content
22	Article 56 (Montreal)	22/5/85	Agreement to the convention.
23	International Air Services Transit Agreement (Chicago)	30/9/77	Raising the authentic languages of the convention to four
24	Protocol for the suppression of violence at airports serving International Civil Aviation	15/12/99	Define acts of violence which may cause distract on ports & damage facilities, which ought to be prosecuted.
25	Convention on international interest on mobile equipment (Cape Town protocol)	21/11/06	ESTABLISHING International legal regime for the creation enforcement, perfection and priority of rights on three categories of high value mobile equipment.
26	Protocol to the convention on international interest on mobile equipment specific to Aircraft equipment.(Cape town protocol)	21/11/05	Supplement and modify the convention to meet the particular requirements of aircraft financing
27	The registration of Aircraft Regulation No.306/1965/ as amended	1965	Registration of aircraft
28	Convention on International Interest on mobile equipment specific to Aircraft equipment (Cape town protocol)	21/11/03	Supplement and modify the convention to meet the particular requirements of aircraft financing
29	International Air Services Transit Agreement (Chicago)	22/3/45	Raising the authentic languages of the convention to four

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GEN 1-7 Differences from ICAO standards, Recommended Practices and Procedures

1. Annex1- Personnel licensing (11th edition) No difference
2. Annex 2 -RULES OF THE AIR (10th edition) No Difference
3. Annex 3 Meteorological services for international air navigation (18th edition)

Reference Differences

- 3.5 With regard to meteorological watch, very few actual weather reports are available in the Addis Ababa Flight Information Region during the night; therefore the meteorological watch office service is not as efficient as it is during the day.
 - 4.1.5 The observers are located in the terminal buildings where there are limitations in the observational viewpoints except at Addis Ababa Aerodrome.
 - 4.7 No runway visual range observation is made.
 - 7.1.1 (b) SIGMET information at transonic and supersonic cruising levels not supplied.
 - 7.2.3 "SIGMET SST" not issued
 - 9.2.2 Meteorological information for pre-flight planning for supersonic transport aircraft not supplied.
 - 9.2.3 Briefing for supersonic transport aircraft not available.

10.1.9 Meteorological information to Flight Information Center and Area Control Center for supersonic aircraft not supplied.

4. Annex 4 - Aeronautical charts (11th edition) -No differences
5. Annex 5 - Units of measurement to be used in air and ground operations (5th edition) - No differences
6. Annex 6 - Operation of aircraft part 1 (9th edition), part 2 (8th edition) part 3 (5th edition)) - No differences

- 7. Annex 7 - Aircraft Nationality and registration marks (12th edition)** - No differences.
- 8. Annex 8 - Airworthiness of aircraft (10th edition)** - No differences

9. Annex 9 - Facilitation (12th edition)

Reference	Differences
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- 2.6 Passenger manifest remains to be a requirement.
- 2.38 Prior permission is required 15 days before the intended date of operation if mail services are used for requesting such permission. Seven days prior notice is required when using telegram or telex service.
- 3.5.3 The initial period of validity of a passport is not more than one year.
- 3.8 Visitors are required to pay for entry visas.
- 3.8.3 A temporary visa is valid only for one month and upon request can be extended up to two months.
- 3.10 Contents of the Embarkation/Disembarkation card vary from that of Appendix 5 of Annex 9
- 3.17 All baggage of passengers is subject to customs inspection.
- 3.17.1 No dual-channel baggage clearance system has been installed.
- 3.25.2 No foreigner is allowed in Ethiopia unless he/she is in possession of a valid entry visa and an international health certificate.
- 3.28 Exit visas are required for nationals as well as temporary visitors at the end of their stays.

- 3.30 Baggage of outgoing passengers is subject to inspection.
- 4.13 Cargo and unaccompanied baggage's are not exempted from physical examination.
- 4.23 Only imported private gift packages and trade samples not exceeding the value of Birr 75 are exempted from duty and other clearance formalities.
- 4.30 Sampling physical examination is carried out only when each package has uniformity.
- 4.53 Unaccompanied baggage is treated as cargo. However, declaration formalities shall be required to be carried out only if unaccompanied baggage exceeds 60 kg weight.
10. **Annex 10 - Aeronautical telecommunications vol I (5th edition), Vol II (6th edition), Vol III (1st edition), Vol IV (3rd edition), Vol V (2nd edition)** - No differences
11. **Annex 11 - Air traffic services (13th edition)** - No differences
12. **Annex 12 - Search and rescue (8th edition)** - No differences
13. **Annex 13 - Aircraft accident investigation (10th edition)** - No differences
14. **Annex 14 - Aerodromes Vol I (6th edition), Vol II (3rdnd edition)**-No differences.
15. **Annex 15 Aeronautical information services (14th edition)**
AD 1.2.2 Not applicable

16.	Annex 16	Environmental protection Vol I (6th edition), Vol II (3rd edition) No differences	19.	Annex 19	Safety Management Systems No differences
17.	Annex 17	Security- safeguarding international civil aviation against acts of unlawful interference (9th edition)- No differences	20.	DOC 4444 Air Traffic Management (15th edition)-	No differences.
18.	Annex 18	The safe transport of dangerous goods by air (4th edition)-	21.	DOC 7030/4 Regional supplementary procedures (5th edition)-	No differences

GEN 2. TABLES AND CODES

GEN 2.1 MEASURING SYSTEM, AIRCRAFT MARKINGS, AND HOLIDAYS

1. Units of Measurement

The ICAO table of units has been selected for use in messages containing dimensional units transmitted by all aeronautical stations in the International Telecommunication Services

and in messages transmitted from aircraft engaged in international operations to aeronautical stations. The blue table of Units is also used in the AIP and in NOTAM.

The table of units of measurements shown below will be used by Aeronautical stations within Ethiopia FIR for air and ground operations.

For measurement of	Units used
Distance used in navigation, position reporting,etc.- generally in excess of 2 nautical miles	*Nautical Miles and tenths
Relatively short distances such as those relating to aerodromes(e.g. runway lengths)	Meters
+Altitudes, elevations and heights	Feet/Meters
Horizontal speed including wind speed	Knots/KM hr
Vertical speed	Feet per minute
Wind direction for landing and taking off	Degrees Magnetic
Wind direction except for landing and taking off	Degrees True
Visibility including runway visual range	Kilometers or meters
Altimeter setting	Hectopascal
Temperature	Degrees Celsius (Centigrade)
Weight	Metric tones or Kilograms
Time	Hours and minutes, the day of 24 hours beginning at midnight UTC
Notes:-*One (1) international nautical mile	=1,852 Meters
+Cruising levels are given in flight level numbers and not in altitudes	

2. Time system

Universal coordinated Time (UTC) is used by air navigation services and in documents published by the aeronautical information service. Local time is 3 hours ahead of UTC.

In reporting time, the nearest full minute is used e.g., 12 hr 40 Min 40 Sec is reported as 1241.

Geographical positions in the AIP are normally given to an accuracy of a second, such that latitude is given with 6 digits and longitude is given with 7 digits (both in degrees, minutes and seconds)

Example: HAAB N085800 E0384754

Note: Geographical coordinates indicating latitude and longitude are transformed to the World Geodetic System-1984 (WGS-84).

3. Geodetic reference datum

3.1 Name/designation of datum

5. Public holidays

5.1 From 01 September to 31 August of each calendar year the following dates will be considered as Public Holidays in Ethiopia.

All Saturdays and all Sundays	
11 September	Ethiopian New Year (Kidus Yohannes)
16 October*	Id Al-Adeha (Arefa)
27 September	Finding of the True Cross (Meskel)
07 January	Ethiopian Christmas
14 January*	Birth day of the prophet Mohammed (Moulid)
19 January	Ethiopian Epiphany
28 July*	Id-Al Fater(Ramadan)
02 March	Victory of Adwa
18 April*	Ethiopian Good Friday
20 April*	Ethiopian Easter
01 May	International Labour-day
05 May	Ethiopian Patriots Victory day
28 May	Down fall of the Dergue

* Changes will be notified by AIP amendment, AIC or summary of NOTAM class one.

During the above public holidays, airlines permitted to operate into, from or in transit across Ethiopia should notify in time the Civil Aviation Authority about their intended scheduled /non-scheduled flights or

alterations thereof. Application for such permits shall be submitted at the following address:

Civil Aviation Authority
Telephone Number: 251 11 665 09
85(ACC/FIC)
AFTN: HAAAZQZX
Addis Ababa, Ethiopia

GEN 2.2ABBREVIATIONS**A**

A	Amber
AAA	Amended Meteorological message
A/A	Air-to-air
AAL	Above Aerodrome Level
ABM	Abeam
ABN	Aerodrome Beacon
ABT	About
AC	Altocumulus
ACAS	Air borne Collision Avoidance System
ACC	Area Control Center or Area Control
ACCID	Notification of an Aircraft Accident
ACFT	Aircraft
ACK	Acknowledge
ACN	Aircraft Classification Number
ACP	Acceptance Message
ACPT	Accept or Accepted
ACT	Activity
AIREP	Air-report
AIS	Aeronautical Information Service
ALERFA	Alert Phase
ALR	Alerting Message
ALRS	Alerting Service
ALS	Approach Lighting System
ALT	Altitude
ALTN	Alternate or Alternating (Light Alternates in color)
AMA	Area Minimum Altitude
AMD	Amend or Amended
AMDT	Amendment (AIP Amendment)
AMS	Aeronautical Mobile Services
AMSL	Above Mean Sea Level
AMSS	Aeronautical Mobile Satellite Services
ANS	Answer
AOC	Aerodrome Obstacle Chart
AD	Aerodrome
ADDN	Addition or Additional
ADF	Automatic Direction-Finding Equipment
ADIZ	Air Defense Identification Zone
ADJ	Adjacent
ADZ	Advice
AES	Aircraft Earth Station
AFIL	Flight Plan Field in the air
AFIS	Aerodrome Flight Information Service
AFM	Yes or Affirm or that is Correct
AFRS	Aerodrome Fire and Rescue Service
AFS	Aeronautical Fixed Service
AFT	After ... (time or place)
AFTN	Aeronautical Fixed Telecommunication Network

A/G	Air-to-ground
AGA	Aerodromes, Air routes and ground aid
AGL	Above Ground Level
AGN	Again
AIC	Aeronautical Information Circular
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information regulation and Control
AOR	Area of Responsibility
AP	Airport
APCH	Approach
APR	April
APRX	Approximate or Approximately
APSG	After Passing
ARP	Aerodrome Reference point
ARR	Arrive or Arrival
ARR	Arrive (Message Type Designator)
ARS	Special Air-Report
AS	Alto Stratus
ASC	Ascent to or ascending to
ASDA	Accelerate-stop distance available
ASPH	Asphalt
ATA	Actual time or 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
ATS	Air Traffic Services
ATTN	Attention
ATZ	Aerodrome Traffic Zone
AUG	August
AUTH	Authorized or Authorization prescribed
AUW	All Up Weight
AVASIS	Abbreviated Visual Approach Slope Indicator System
AVBL	Available or Availability
AVGAS	Aviation Gasoline
AWY	Airway
B	
B	Blue
BA	Braking Action
BCN	Beacon (Aeronautical Ground Lights)
BCST	Broadcast
BDRY	Boundary
BECMG	Becoming
BFR	Before
BKN	Broken
BL....	Blowing (followed by DU=dust SA=sand or SN=snow
BLDG	Building
BLO	Below Clouds

BLW	Below
BOMB	Bombing
BRG	Bearing
BRKG	Breaking
BS	Commercial broadcasting station
BTL	Between layers
BTN	Between
C	
C	Center (runway identification)
C	Degrees Celsius (centigrade)
CAA	Civil Aviation Authority
COOR	Co-ordinate or co-ordinate
CAT	Category (ILS/MM)
CATCO	Chief Air turbulence
CAVOK	Visibility, cloud & present weather better than prescribed values or conditions
CB	Cumulonimbus
CC	Cirrocumulus
CD	Candela
CDN	Coordination message
CGL	Circling Guidance light(S)
CH	Channel
CHG	Modification Message
CI	Cirrus
CIT	Near or Over Large Towns
CIV	Civil
CLBR	Calibration
CLD	Cloud
CLG	Calling
CLR	Clear or Cleared clearance
CLSD	Closed
CM	Centimeter
CMB	Climb to or Climbing to
CMPL	Completion or Completed/Complete
CNL	Cancel or Canceled
CNL	Flight Plan Cancellation Message
COM	Communication
CON	Console
CONC	Concrete
COND	Condition
CONS	Continuous
CONST	Construction or constructed
CONT	Continue(s) or continued
COP	Change-over point
COR	Correct or corrected correction
COV	Cover or covered or covering
C/S	Call sign
CS	Cirrostratus
CTA	Control area
CTAM	Climb to and maintain
CTC	Contact

CTL	Controll
CTN	Caution
CTR	Control zone
CU	Cumulus
CUST	Customs
CW	Continuous-wave
CWY	Clear way
D	
D	Danger area (followed by identification)
D	Downward (tendency in RVR during previous 10 minutes)
DA	Decision altitude
DATCO	Duty air traffic control officer
DCT	Direct (in relation to flight plan clearances and type of approach)
DEC	December
DEG	Degrees
DEP	Depart to or departing to
DES	Descend to or descending to
DEST	Destination
DETRESFA	Distress phase
DEV	Deviation or deviating
DH	Decision height
DIST	Distance
DIV	Divert or diverting
DME	Distance-measuring equipment
DNG	Danger or dangerous
DOM	Domestic
DOC	Document
DP	Dew point temperature
DPT	Depth
DR	Dead reckoning
DRG	During
DS	Dust Storm
DSB	Double side band
DSCND	Descend to and maintain
DTG	Date-time-group
DTRT	Deteriorate or deteriorating
DU	Dust
DUC	Dense upper cloud
DUPE	This is duplicate message
DUR	Duration
DVOR	Doppler VOR
DZ	Drizzle
E	
E	East or eastern longitude
EAL	Ethiopian Airlines Corporation
EAF	Ethiopian air force
EAT	Expected approach time
EB	Eastbound
EET	Estimated elapsed time
EFC	Expect future clearance

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EHF	Extremely high frequency
ELBA	Emergency location beacon aircraft
ELVE	Elevation
ELR	Extra long range
EMERG	Emergency
END	Stop end (related to RVR)
ENE	East north east
ENG	Engine
ENRT	Enroute
EQPT	Equipment
ESE	East south east
EST	Estimated time over significant point or estimate or estimated
EST	Boundary estimate message
ETA	Estimated time of arrival or
	Estimating arrival
ETD	Estimated time of departure or
	Estimating departure
ETO	Estimated time over significant point
EV	Every
EXC	Except
EXER	Exercise or exercising or to exercise
EXTD	Extend or Extending
EXP	Expect or expected or expecting

F

F	Fixed Facilities
FAC	Facilities
FAL	Facilitation of International Air Transport
FAP	Final Approach Point
FATO	Final Approach & take-off Area
FAX	Facsimile Transmission
FCST	Forecast
FEB	February
FG	Fog
FIC	Flight Information Center
FIR	Flight Information Region
FIS	Flight Information Service
FL	Flight Level
FLD	Field
FLG	Flashing
FLR	Flares
FLT	Flight
FLTCK	Flight Check
FLUC	Fluctuating or Fluctuation/Fluctuated
FLW	Follow(s) or following
FLY	Fly or flying
FM	From
FNA	Final approach
FPL	Filed flight plan
FPM	Feet per minute
FPR	Flight plan route

FR	Fuel remaining
FREQ	Frequency
FRI	Friday
FRNG	Firing
FRONT	Front (Relating to weather)
FRQ	Frequent
FSL	Full stop landing
FST	First
FT	Feet (Dimensional unit)
FU	Smoke
FZ	Freezing
FZDZ	Freezing drizzle
FZFG	Freezing fog
FZRA	Freezing rain

G

G	Green
GA	Go ahead, resume sending
G/A	Ground-to-air
G/A/G	Ground-to-air-and-air-to -Ground
GCA	Ground controlled approach system or ground controlled approach
GEN	General
GEO	Geographic or true
GES	Ground earth station
GLD	Glider
GND	Ground
GNDCK	Ground check system
GNSS	Global navigation satellite system
GP	Glide path
GR	Hail
GRASS	Grass landing area
GRID	Processed meteorological data in the form of grid point value in aeronautical meteorological codes
GRVL	Gravel
GS	Ground speed

H

H24	Continuous day and night service
HAPI	Helicopter approach path indicator
HBN	Hazard beacon
HDF	High frequency direction finding station
HDF	Heading
HEL	Helicopter
HF	High frequency (3000 -30000KHZ)
HGT	Height or height above
HJ	Sunrise to sunset
HLDG	Holding
HN	Sunset to sunrise
HO	Service available to meet operational requirements
HOL	Holiday
HOSP	Hospital aircraft
HPA	Hectopascal

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HQ	Headquarters
HR	Hours
HS	Service available during hours scheduled operations
HURCN	Hurricane
HVDF	High and very high frequency direction finding stations (at the same location)
IAC	Instrument approach chart
IAF	Initial approach fix
IAO	In and out of clouds
IAR	Intersection of air routes
IBN	Identification beacon
ICE	Icing
ID	Identifier or identify
IDENT	Identification
IF	Intermediate approach fix
IFR	Instrument flight rules
IGA	International general aviation
ILS	Instrument landing system
IM	Inner marker
IMC	Instrument meteorological
IMG	Immigration
IMPR	Improve or immediately
INTRP	Interrupt or interruption or interrupted
INTST	Intensity
ISA	International standard atmosphere
ISB	Independent sideband
ISOL	Isolated
IMT	Immediate or immediately
INA	Initial approach
INBD	In bound
INC	In cloud
INCERFA	Uncertainty phase
INFO	Information
INP	If not possible
INPR	In progress
INS	Inertial navigation system
INST	Install or installed or installation
INSTR	Instrument
INT	Intersection
INTL	International
INTRG	Interrogator
J	
JAN	January
JTST	Jet stream
JUN	June
K	
KG	Kilograms
KHZ	Kilohertz
KM	Kilometers

KMH	Kilometers per hour
KPA	Kilo Pascal
KT	Knots
KW	Kilowatts
L	
L	Left (run way identification)
L	Locator (see LM, LO)
LAN	Inland Latitude
LDA	Landing distance available
LDAH	Landing distance available, helicopter
LDG	Landing
LDI	Landing direction indicator
LEFT	Left (direction or turn)
LEN	Length
LF	Low frequency (30 to 300 KHZ altitude)
LGT	Light or lighting
LGTD	Lighted
LIH	Light intensity high
LIL	Light intensity medium
LIM	Light intensity medium
LLZ	Localizer
LM	Locator, middle
LMT	Local mean time
LNG	Long (used to indicate the JTST type of approach desired or JUL July required
LO	Locator, outer
LOC	Locally or location or Locator
LONG	Longitude
LORAN	LORAN (Long range air navigation system)
LRG	Long range
LTD	Limited
LT	Land line teletypewriter
LV	Light and variable (relating wind)
LVE	Leave or leaving
LVL	Level
LYR	Layer or layered
M	
M	Meters
M	Mach Number (followed LAT by figures)
M	Meters (preceded by figures)
MAA	Maximum authorized Altitude
MAG	Magnetic
MAINT	Maintenance
MAP	Aeronautical Maps & Charts
MAR	March
MAS	Manual A1 simplex
MAX	Maximum
MAY	May
MB	Milibars
MCA	Minimum crossing altitude
MCW	Modulated continuous wave

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MDA	Minimum descent altitude
MD	Medium frequency direction finding station
MD	Minimum descent height
MEA	Minimum en-route altitude
MEHT	Minimum eye height over threshold (for visual approach slope indicator systems)
MET	Meteorological or meteorology
METAR	Aviation routine weather report (international meteorological figure code)
MF	Medium frequency (300 to 30000 KHZ)
MOC	Minimum obstacle clearance (required)
MOD	Moderate (used to indicate the intensity of weather phenomena E.g. MODRA=Moderaterian)
MON	Above mountains
MON	Monday
MOV	Move or moving
MPS	Meters per second
MRA	Minimum reception altitude
MRG	Medium range
MRP	ATS/MET reporting point
MS	Minus minimum safe altitude
MSG	Message
MSL	Mean sea level
MT	Mountain
MTU	Metric units
MTW	Mountain waves
MVDF	Medium and very high frequency direction-finding stations (at the same location)
MX	Mixed type of ice formation
MCW	Modulated continuous wave
MDA	Minimum descent altitude
MD	Medium frequency direction finding station
MD	Minimum descent height
MEA	Minimum en-route altitude
N	
N	North or northern latitude
NAT	North Atlantic
NB	Northbound
NBFR	Not before
NDB	Non-directional radio beacon
NE	North-east
NEB	North-eastbound
NEG	No or negative or permission not granted or that is no correct
NGT	Night
NIL	None or I have nothing to send you
NM	Nautical miles
NML	Normal
NE	North north east
NNW	North North West
NO	No
NOF	International NOTAM Office
NOSIG	No significant change (for use trend type landing forecasts)

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
NOV	November
NR	Number
NRH	No reply heard
NS	Nimbo-stratus
NSW	Nil significant weather
NTO	National touring organization
NW	North west
NWB	North-westbound
NXT	Next
PAR	Precision approach radar
PARL	Parallel
PAX	Passenger (s)
PERM	Permanent
PCD	Proceed or proceeding
PCN	Pavement classification number
PE	Ice pellets
PER	Performance
PERM	Permanent
PJE	Parachute Jumping Exercise
O	
OAC	Oceanic area control center
OPMET	Operational meteorological indicator
OPN	Open or operate or operative or operating or operational
OPR	Operator or operate or operative or operating or operational
OPS	Operations
O/R	On Request
ORD	Indication of an order
OSV	Ocean station vessel
OTLK	Outlook (used in SIGMET message for volcanic ash and tropic cyclones)
OTP	On top
OTS	Organized track system
OUTB	Outbound
OVC	Overcast
P	
P...	Prohibited area (followed by identification)
PALS	Precision Approach Lighting System (specify category)
PAPI	Precision Approach Path Indicator
PANS	Procedures for Air Navigation Services
PAR	Precision Approach Rader
PARL	Passenger (s)
PCD	Proceed or Proceeding
PCN	Pavement Classification Number
PE	Ice Pellets
PER	Performance
PERM	Permanent
PJE	Parachute jumping exercise
PLA	Practice low approach

PLN	Flight plan
PLVL	Present level
PN	Prior notice required
PNR	Point of no return
PO	Dust devils
POB	Persons on board
POSS	Possible
PPI	Plan position indicator
PPR	Prior Permission Required
PPSN	Present Position
PRI	Primary
PRKG	Parking
PROB	Probability
PROC	Procedure
PROV	Provisional
PS	Plus
PSG	Passing
PSN	Position
PTN	Procedure Turn
PWR	Power
Q	
QBI	Compulsory IFR Flight
QDM	Magnetic Heading (Zero Wind)
QDR	Magnetic Bearing
QFE	Atmospheric Pressure at Aerodrome
QFU	Magnetic orientation of runway
QNH	Altimeter sub-scale setting obtain elevation when on the ground True Bearing
QUAD	Quadrant
R	
R	Red
R...	Restricted area (followed by Identification)
R	Right (runway identification)
RG	Range (lights)
RIF	Re clearance in flight
RITE	Right (direction of QTE turn)
RL	Report Leaving
RLA	Relay to
RLCE	Request Level Change Enroute
RLLS	Runway Lead-in Lighting System
RLNA	Requested Level Not Available
RMK	Remark
RNAV	Area Navigation to be
RA	Rain
RAC	Rules of the Air and Traffic Services
RAFC	Regional Area Forecast Center
RAPID	Rapid or Rapidly
RASH	Rain Showers
RASN	Rain and Snow or Showers of Rain Snow
RB	Rescue Boat
RBI	Radar Blip Identification message

RCA	Reach Cruising Altitude
RCC	Rescue Co-ordination Center repeat or repeat
RCF	Radio Communication failure (Message type designator)
RCH	Reach and Reaching
RCL	Runway Center Line
RCLL	Runway Center Line Light(s)
RCLR	Re Cleared
RQ	Indication of a request
RQMNTS	Requirements
RDL	Radial
RDO	Radio
RE	Recent (used to qualify weather phenomena e.g. RERA=recent pronounced "ARNAV")
RNG	Radio range
RNP	Required Navigation Performance
ROC	Rate of Climb
ROD	Rate of Descent
ROFOR	Route Forecast (in meteorological code)
RPL	Repetitive flight Plan
RPLC	Replace or replaced
RPS	Radar Position Reference datum height RPT request
RQP	Request Flight Plan (message type)
RR	Report reaching
RRA	(or RRB, RRC ...etc sequence) delayed message (message type designator)
RSC	Rescue sub-center
RSP	Responder beacon
RSR	En-route Surveillance Radar
RTD	Delayed (used to indicate delayed meteorological message)
RTE	Route
RTF	Radio telephone
RTG	Radio teletypewriter
RTN	Return or returned or returning
RTT	Radio teletypewriter Standard regional route transmitting frequencies
RV	Rescue vessel
RVR	Runway visual range
RWY	Runway
S	
S	South or southern latitude
SA	Sand
SALS	Simple approach lighting system
SAN	Sanitary
SAP	As soon as possible
SAR	Search and rescue
SARPS	Standard sand recommended practices (IC)
SAT	Saturday Senior air traffic control officer
SATCOM	Satellite communication
SB	Southbound
SC	Start cumulus
SCT	Scattered
SDBY	Stand by
SE	South-east
SEB	South-eastbound

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SEC	Seconds
SEC T	Sector
SELCAL	Selective calling system
SEP	September
SER	Service or servicing or served
SEV	Sever (used e.g. to qualify and icing turbulence reports)
SFC	Surface
SGL	Signal
SH	Shower (e.g. SHRASN=Showers of rain and snow)
SHF	Super high frequency (3000 to 30000 MHZ)
SID	Standard Instrument Departure
SIF	Selective Identification Feature
SIG	Signature
SIGMET	Information concerning en-route weather phenomena which may affect the safety of aircraft operations
SIMUL	Simultaneous or simultaneously
SIGWX	Significant Weather
SKC	Sky Clear
SKED	Schedule or scheduled
SLP	Speed Limiting Point
SLW	Slow
SMC	Surface Movement Control
SMR	Surface Movement Radar
SN	Snow
SPECI	Aviation Selected Special Weather Report (in international meteorological report figure code)
SPECIAL	Local Special Meteorological Report (in abbreviated plain language)
SPL	Supplementary flight Plan Message
SPOT	Spot wing
SR	Sunrise
SRA	Surveillance Radar Approach
SRE	Surveillance radar element of Precision approach radar system
SRG	Short range
SRR	Search and rescue region
SRY	Secondary
SS	Sandstorm
SS	Sunset
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
STD	Standard
STF	Stratford
STN	Station
STNR	Stationary
STOL	Short take-off and landing
STS	Status
STWL	Stop way light(s)
SUBJ	Subject to

SUN	Sunday
SUP	Supplement (AIP supplement)
SUPPS	Regional supplementation procedure
SVC	Service message
SVCBL	Serviceable
SW	South-west
SWY	Stop way
T	
T	Temperature
TA	Transition altitude
TACAN	UHF tactical air navigation aid
TAF	Aerodrome forecast
TAM	Technical Acknowledgment Message
TRAN	Transmits or transmitter
TAIL	Tail wind
TRL	Transitional level
TAR	Terminal area surveillance Radar
TAS	True air speed
TAX	Taxing or taxi
TC	Tropical cyclone
TCU	Transfer or control cancellation message
TDZ	Touchdown Zone
TECR	Technical Reason
TEL	Telephone
TEMPO	Temporary or Temporarily
TEND	Trend forecast
TFC	Traffic
TGL	Touch-and-go landing
TGS	Taxing guidance System
THR	Threshold
THRU	Through
THU	Thursday
TIL	Until
TIP	Until Past... (place)
TKOF	Take-off
TL...	Till (followed by time by which weather change is forecast end)
TLOF	Touchdown and lift-off area
TMA	Terminal control; area
TNA	Turn altitude
TNH	Turn Height
TRN	Mon-radar transfer of control message
TO	To... (place)
TOC	Top of Climb
TODA	Take-Off Distance Available
TODAH	Take-Off Distance Available Helicopter
TOP	Cloud top
TORA	Take-Off Run Available
TROP	Tropopause

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TRS	Tropical revolving storm
TS	Thunderstorm (in aerodrome used alone means thunder reports and forecasts,
TT	Teletypewriter
TUE	Tuesday
TURB	Turbulence
TVOR	Terminal VOR
TWR	Aerodrome Control
TWY	Taxi way
TWYL	Taxi way Link
TXT	Text
TYP	Type of aircraft
U	
U	Upward (tendency in RVR during previous 10 minutes)
UAB	Until advised by.....
UAC	Upper Area Control Center
UAR	Upper Air Route
UDF	Ultra high frequency Direction Finding station
UFN	until Further Notice
UHDT	Unable Higher Due Traffic
UHF	Ultra High Frequency (300 to 3000 MHZ)
UIC	Upper information center
UIR	Upper flight information region
ULR	Ultra long range
UNA	Unable
UNAP	Unable to approve
UNL	Unlimited
UNREL	Unreliable
U/S	Unserviceable
UTA	Upper control area
UTC	Co-ordinate universal time
V	
VAC	Visual Approach Chart
VAL	Visual Approach and Landing Chart
VAN	Runway control Van
VAIL	Magnetic Variation
VAR	Visual Approach Radio Range
VASIS	Visual Approach Slope Indicator System
VC	Vicinity of the aerodrome (followed by FG=Fog, FC=Runnel color, PO=Dust/sand whirls, BLDU=Blowing dust, BLSA=Blowing Sand or BLSN blowing snow, e.g. VCFG= (vicinity for)
VCY	Vicinity
VDF	Very high frequency Direction Finder station
VER	Visual Flight Rules
VHF	Very High Frequency (30-300 MHZ)
VIP	Very Important Person
VIS	Visibility
VLF	Very long frequency (3 to 30 KHZ)
VLR	Very long range
VMC	Visual meteorological conditions
VOLMET	Meteorological information for aircraft in flight

VOR	VHF omni directional range
VORTAC	VOR and TACAN combination
VOT	VOR airborne equipment test facility
VRA	By visual reference to the ground
VRB	Variable
VSA	By visual reference to the ground
VSP	Vertical Speed

W

W	West or western longitude
W	White
WAC	World Aeronautical Chart-ICAO
WAFS	World area forecast center
WB	Westbound
WBAR	Wing bar lights
WD	Words or groups
WDSPR	Widespread
WDI	Wind Direction Indicator
WEF	With effect from or effective from
WED	Wednesday
WI	Within
WID	Width
WIE	With immediate effect or effective immediately
WILCO	Will comply

WINTEM	Forecast upper wind and temperature for aviation
WIP	Work in progress
WKN	Weaken or weakening
WO	Without
WPT	Way-point

WRNG	Warning
WS	Wind shear
WSW	West south west
WT	Weight
WX	Weather

X

X	Cross
XBAR	Crossbar (of approach lighting system)

XNG Crossing

XS Atmospheric

Y

Y Yellow

YES Yes (affirmative)

YR Your

Z

Z Co-ordinate Universal time (meteorological messages)

GEN 2.3 CHART SYMBOLS

1.1 Aerodrome Charts

	Civil (land)
	Sheltered anchorage
	Heliport
	Abandoned or Closed Aerodrome

	Obstacle light
	Runway visual range (RVR) observation site
	Obstacle light
	Point light
	Landing direction indicator (unlighted)
	VOR Check point
	Landing direction indicator (unlighted)

1.2 Aerodrome symbols for Approach Charts

	Aerodromes affecting the traffic pattern on the aerodrome on which the procedure is based
	The aerodrome on which the procedure is based

1.3 Aerodrome charts

	Hard Surface runway
	Unpaved runway
	Stopway (SWY)
	Taxiways and parking areas
	Aerodrome reference point
	Helicopter alighting area on an aerodrome

1.4 OBSTACLES

	Obstacle
	Lighted obstacle
	Group obstacles
	Lighted group obstacles
	Exceptionally high obstacle (optional symbol)
	Exceptionally high obstacle - lighted

GEN 2-3.2

11 DEC 14

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1.5 RADIO NAVIGATION AIDS

	Non- directional radio beacon (NDB)
	VHF omnidirectional range (VOR)
	Distance measuring equipment (DME)
	Collocated VOR and DME radio navigation aids (VOR/DME)
	Compass rose to be orientated on the chart in accordance with the alignment of the station (normally magnetic north)
	Radio Marker beacon Elliptical
	Bone shape
	Instrument Landing System (ILS)
Distance in KM (NM) to DME Identification of radio navigation aid	15 KM KAV
Radial bearing from, and identification of, VOR	R 090 KAV

1.6 AIR TRAFFIC SERVICES

	Flight information region (FIR)
	Aerodrome traffic zone (ATZ)
	Control area (CTA)
	Airway (AWY)
	Controlled route
	Un controlled route

	Advisory airspace (ADA)			
	Control Zone (CTR)			
	Air defence identification zone (ADIZ)			
	Advisory route (ADR)			
26 36	Change-over Point (COP) To be superimposed on the appropriate route symbol at right angles to the route			
Altitude/Flight level	17 000	FL 200	Altitudes /Flight Levels	
16 000	FL 190			
15 000	FL 180			
14 000	FL 170			
13 000	FL 160			
12 000	FL 150			
EGO/CELE	Eqd 5000 ft asl	FL 140		
<input checked="" type="checkbox"/> Compulsory	ATS/MET reporting Point			
<input type="checkbox"/> On request				
	Onward Flt	Compulsory Flt	Optional Flt	
ATC info				
radar				
ATIS				
RTF				
TCAS				
HGS				
WXR				

Reporting and fly-by/flyover functionality

1.7 AIRSPACE RESTRICTIONS

	Restricted airspace (prohibited, restricted or danger area)
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Amendment 02/14

CIVIL AVIATION AUTHORITY
Addis Ababa

	Common boundary for two areas
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1.8 TOPOGRAPHY

	Contours
	Approximate contours
	Relief shown by hachures
	Bluff, cliff or escarpment
.17456 17456	Highest elevation on chart
.6397	Spot elevation
.8975	

1.9 HYDROGRAPHY

	Shore line (reliable)
	Large river (perennial)
	Small river (perennial)
	Rivers and streams (non-perennial)
	Falls
	Lakes (non-perennial)
	Lakes (non-perennial)
	Swamp

1.10 CULTURE

	City or Large town
	Town

	Buildings
	Dual highway
	Primary road
	Secondary road
	Trail
	Road bridge
	Railroad (single track)
	Boundaries (international)
	Outer boundaries
	Telegraph or telephone line

1.11 Other symbols on Charts

	Minimum Sector Altitude (MSA)
	Terminal Arrival Altitude (TAA)
	Holding Pattern

1.12 Approach charts profile view symbols

	Missed Approach track
	Runway
	DME Fix
	Radio Navigation aid
	Instrument Landing System
	Radio marker beacon

GEN 2.4 LOCATION INDICATORS

1. Encode

Adaba	HAAD*	Gore	HAGR*
Addis Ababa ACC/FIC/CAA HQ	HAAA	Gura	HAGU*
Addis Ababa/Bole COM/MET/NOF	HAAB	Hosanna	HAHS*
Arba Minch	HAAM*	Humera	HAHU*
Assosa	HASO*	Jijiga	HAJJ*
Awasa /Lake Awasa	HALA*	Jimma	HAJM*
Awash	HAAW*	Kebri Dahir	HAKD*
Axum	HAAX*	Kelafo	HAKL*
Baco	HABC*	Lalibella	HALL*
Bahir Dar	HABD	Maji	HAMJ*
Beica	HABE*	Masslo	HAML*
Bulchi	HABU*	Mekele	HAMK
Buno Bedele	HABB*	Mendi	HAMN*
Calub	HACB*	Metema	HAMM*
Dageha Bur	HADB*	Mieso	HAME*
Dallol	HADL*	Mizan Teferi	HAMT*
Danghilla	HADN*	Motta	HAMO*
Dansha	HADA*	Mui River	HAMR*
Debre Marcos	HADM*	Negele	HANG*
Debre Tabor	HADT*	Nejjo	HANJ*
Debre Zeit/Harar Meda (MIL)	HAHM*	Nekemte	HANK*
Dembidollo	HADD*	Pawe	HAPW*
Dessie (Combolcha)	HADC*	Semera	HASM*
Dire Dawa	HADR	Shakiso	HASK*
Dodola	HADO*	Sheik Hussen	HASH*
Fincha	HAFN*	Shilabo	HASL*
Geladi	HAGL*	Shire	HASR*
Gambella	HAGM*	Soddo	HASD*
Ghinnir	HAGH*	Tendaho	HATO*
Goba	HAGB*	Tippi	HATP*
Gode	HAGO*	Waca	HAWC*
Gondar	HAGN*	Warder	HAWR*

* Station not served by AFTN

2. Decoded

Indicator	Location	Indicator	Location
HAAA	Addis Ababa/ACC/FIC CAA HQ	HAJJ*	Jijiga
HAAB	Addis Ababa/Bole COM/MET/NOF	HAJM*	Jimma
HAAD*	Adaba	HAKD*	Kebri Dahaar
HAAM*	Arba Minch	HAKL*	Kelafo
HAAW*	Awash	HALA*	Awasa/Lake
HAAX*	Axum	HALL*	Lalibela
HABB*	Buno Bedelle	HAME*	Mieso
HABC*	Baco	HAMJ*	Maji
HABD	Bahir Dar	HAMK	Mekele
HABE*	Beica	HAML*	Masslo
HABU*	Bulchi	HAMM*	Metema
HACB*	Calub	HAMN*	Mendi
HADA*	Dansha	HAMO*	Motta
HADB*	Degeha Bur	HAMR*	Mui River
HADC*	Dessie/Comolcha	HAMT*	Mizan Teferi
HADD*	Dembidello	HANG*	Negele
HADL*	Dallol	HANJ*	Nejjo
HADM*	Debre Marcos	HANK*	Nekemte
HADN*	Danghilla	HAPW*	Pawe
HADO*	Dodola	HASD*	Sodo
HADR	Dire Dawa	HASK*	Sheik Hussien
HADT*	Debre Tabor	HASH*	Shakiso
HAFN*	Fincha	H ASL *	Shilabo
HAGB*	Goba	HASM*	Semera
HAGH*	Ghinnir	HASO*	Assosa
HAGL*	Geladi	HASR*	Shire
HAGM*	Gambella	HATO*	Tendaho
HAGN*	Gondar	HATP*	Tippi
HAGO*	Gode	HAWC*	Waca
HAGR*	Gore	HAWR*	Warder
HAGU*	Gura		
HAHM*	Debre Zeit/Harar Meda (MIL)		
HAHS*	Hossana		
HAHU*	Humera		

*Station not served by AFTN

GEN 2.5 LISTS OF RADIO NAVIGATION AIDS

<i>Station name</i>	<i>Facility</i>	<i>ID</i>	<i>Purp ose</i>	<i>Station name</i>	<i>Facility</i>	<i>ID</i>	<i>Purpos e</i>
Addis Ababa/Gewasa	DVOR/DM E	GWZ		Lake Awasa	NDB	LA	E
Addis Ababa/Bole	NDB	AB	A	Lalibella	NDB	LLB	AE
	CVOR/DM E	ADS	AE	Mekele	CVOR/DM E	QHA	AE
	L	BL	A		ILS/ DME		
					ILS/LLZ	IMK	
	ILS/LLZ	IAA	A		ILS/GP	IMK	
	ILS/DME	IAA	A		ADS-B		AE
	ILS/GP	IAA	A		L	MK	A
	NDB	AB	A				
	L	BL	A				
	VOR/DME	ADS	AE				
	ILS/LLZ	IBA	A				
Arba Minch	L	AM	A				
	ADS-B		AE				
Axum	NDB	AX	AE				
Bahir Dar							
	CVOR/DM E	BDR	AE				
	ILS/ DME	IBN	A				
Dire Dawa	L	AY	A				
	CVOR/DM E	DW A	AE				
	ADS-B		AE				
Debre Marcos	NDB	DM	E				
Baro Gambella	VOR/DME	BRO	AE				
Gode	NDB	GO	E				
	ADS-B		AE				
Gore	ADS-B		AE				
Gonder	L	AZZ	A				
Jigjiga	NDB	JJ	AE				
Jimma	NDB	JM	AE				

GEN 2-6 CONVERSION TABLES										
METERS INTO FEET						1 FT=.3048M				
M	0	1	2	3	4	5	6	7	8	9
0	0	3.28	6.56	9.84	13.12	16.40	19.68	22.97	26.25	29.35
10	32.81	36.09	39.37	42.65	45.93	49.21	52.49	55.77	59.05	62.34
20	65.62	68.90	72.18	75.46	78.74	82.02	85.30	88.58	91.86	95.14
30	98.42	101.70	104.99	108.27	111.15	114.83	118.11	121.39	124.67	127.95
40	131.23	134.51	137.79	141.07	144.36	147.64	150.92	154.20	157.48	160.76
50	164.04	166.32	170.60	173.88	177.16	180.44	183.72	187.01	190.29	193.57
60	196.85	200.13	203.41	206.69	209.97	213.25	216.53	219.81	223.09	226.38
70	229.66	232.94	236.22	239.50	242.78	246.06	249.34	252.62	255.90	259.18
80	262.46	265.74	269.03	272.31	275.59	278.87	282.15	285.43	288.71	291.99
90	295.27	298.55	301.83	305.11	308.40	311.96	314.96	318.24	321.52	324.80
	0	10	20	30	40	50	60	70	80	90
100	328.08	360.89	393.70	426.50	459.31	492.12	524.93	557.74	590.54	623.35
200	656.16	688.97	721.78	754.58	787.39	820.20	853.01	885.82	918.62	951.43
300	984.24	1017.0	1049.9	1082.7	1115.5	1148.3	1181.1	1213.9	1246.7	1279.5
400	1312.3	1345.1	1377.9	1410.7	1443.6	1476.4	1509.2	1542.0	1574.8	1607.6
500	1640.4	1673.2	1706.0	1738.8	1771.6	1804.4	1837.2	1870.1	1902.9	1935.7
600	1986.5	2001.3	2034.1	2066.9	2099.7	2132.5	2165.3	2198.1	2230.9	2263.8
700	2296.6	2329.4	2362.2	2395.0	2427.8	2460.6	2493.4	2526.2	2559.0	2591.8
800	2624.6	2657.4	2690.3	2723.1	2755.9	2788.9	2821.5	2854.3	2887.1	2919.9
900	2952.7	2985.5	3018.3	3051.1	3084.0	3116.8	3149.6	3182.4	3215.2	3248.0
	0	100	200	300	400	500	600	700	800	900
1000	3280.0	3608.9	3937.0	4265.0	4593.1	4921.2	5249.3	5577.4	5905.4	6233.5
2000	6561.6	6889.7	7217.8	7545.8	7873.9	8202.0	8530.1	8858.2	9186.2	9514.3
3000	9842.4	10170	10499	10827	11155	11483	11811	12139	12467	12795
4000	13123	13451	13779	14107	14436	14764	15092	15420	15748	16076
5000	16404	16732	17060	17388	17716	18044	18372	18701	19029	19357
6000	19685	20013	20341	20699	20997	21325	21653	21981	22309	22638
7000	22966	23294	23622	23950	24278	24606	24934	25262	25590	25918
8000	26246	26574	26903	27231	27559	27887	28215	28543	28871	29199
9000	29527	29855	30183	30511	30840	31168	31498	31824	32152	32480

CONVERSION TABLES-FEET INTO METERS 1 FT=0.3048M										
FT	0	1	2	3	4	5	6	7	8	9
0	0	0.30	0.61	0.91	1.22	1.52	1.83	2.13	2.44	2.74
10	3.05	3.35	3.66	3.96	4.27	4.57	4.88	5.18	5.49	5.79
20	6.10	6.40	6.71	7.01	7.32	7.62	7.92	8.23	8.53	8.84
30	9.14	9.45	9.75	10.06	10.36	10.67	10.97	11.28	11.58	11.89
40	12.19	12.50	12.80	13.11	13.41	13.72	14.02	14.33	14.63	14.94
50	15.24	15.54	15.85	16.15	16.46	16.76	17.07	17.37	17.68	17.98
60	18.29	18.59	18.90	19.20	19.51	19.81	21.12	20.42	20.73	21.03
70	21.34	21.64	21.95	22.25	22.56	22.86	23.16	23.47	23.77	24.08
80	24.38	24.69	24.99	25.30	25.60	25.91	26.21	26.52	26.82	27.13
90	27.43	27.74	28.04	28.35	28.65	28.96	29.26	29.57	29.87	30.18
	0	10	20	30	40	50	60	70	80	90
100	30.48	33.53	36.58	39.62	42.67	45.72	48.77	51.82	54.86	57.91
200	60.96	64.01	67.06	70.01	73.15	76.20	79.25	82.30	85.34	88.39
300	91.44	94.49	97.54	100.58	103.63	106.68	109.73	112.78	115.82	118.87
400	121.92	124.97	128.02	131.06	134.11	137.16	140.21	143.26	146.30	149.35
500	152.40	155.45	158.50	161.54	164.59	167.64	170.69	173.74	176.78	179.83
600	182.88	185.93	188.98	192.02	195.07	198.12	201.17	204.22	207.26	210.31
700	213.36	216.41	219.46	222.50	225.55	228.60	231.65	234.70	237.74	240.79
800	243.84	246.89	249.94	252.98	256.03	259.08	262.13	265.18	268.22	271.27
900	274.32	277.37	280.42	283.46	286.51	289.56	292.61	295.66	298.70	301.75
	0	100	200	300	400	500	600	700	800	900
1000	304.80	335.28	365.76	396.24	426.72	457.20	487.68	518.16	548.64	579.12
2000	609.60	640.08	670.56	701.04	731.52	762.00	792.48	822.96	853.44	883.92
3000	914.40	944.88	975.36	1005.8	1036.3	1066.8	1097.3	1127.8	1158.2	1188.7
4000	1219.2	1249.7	1280.2	1310.6	1341.1	1371.6	1402.1	1432.6	1463.0	1493.5
5000	1524.0	1554.5	1585.0	1615.4	1645.9	1676.4	1706.9	1737.4	1767.8	1798.3
6000	1828.8	1859.3	1889.8	1920.2	1950.7	1981.2	2011.7	2042.2	2072.6	2103.1
7000	2133.6	2164.1	2194.6	2225.0	2255.5	2286.0	2316.5	2347.0	2377.4	2407.9
8000	2438.4	2468.9	2499.4	2529.8	2560.3	2590.8	2621.3	2651.8	2682.2	2712.7
9000	2743.2	2773.7	2804.2	2834.6	2865.1	2895.6	2926.1	2956.6	2987.0	3017.5
	0	1000	2000	3000	4000	5000	6000	7000	8000	9000
10000	3048.0	3352.8	3657.6	3962.4	4267.2	4572.0	4876.8	5181.6	5486.4	5791.2
20000	6096.0	6400.8	6705.6	7010.4	7315.2	7620.0	7924.8	8229.6	8534.4	8839.2
30000	9144.0	9448.8	9753.6	10058	10363	10668	10973	11278	11582	11887
40000	12192	12497	12802	13106	13411	13716	14021	14326	14630	14935
50000	15240	15545	15850	16154	16459	16764	17069	17374	17678	17983

TABLES AND CODES
CONVERSION TABLES-NAUTICAL MILES/KILOMETERS/NAUTICAL MILES

NM/KM	0	1	2	3	4	5	6	7	8	9
10	0	1.852	3.704	5.556	7.408	9.260	11.11	12.96	14.82	16.67
10	18.52	20.37	22.22	24.08	25.93	27.78	29.63	31.48	33.34	35.19
20	37.04	38.89	40.47	42.6	44.45	46.30	48.15	50.80	51.86	53.71
30	55.56	57.41	59.26	61.12	62.97	64.82	66.67	68.52	70.38	72.23
40	74.08	75.93	77.78	79.64	81.49	83.34	85.19	87.04	88.90	90.75
50	92.6	94.45	96.3	98.16	100.0	101.9	103.7	105.6	107.4	109.3
60	111.1	113.0	114.8	116.7	118.5	120.4	122.2	124.1	125.9	127.3
70	129.6	131.5	133.3	135.2	137.0	138.9	140.7	142.6	144.4	146.3
80	148.2	150.0	151.9	153.7	155.6	157.4	159.3	161.1	163.0	164.8
90	166.7	168.5	170.4	172.2	174.1	175.9	177.8	179.6	181.5	183.4
		10	20	30	40	50	60	70	80	90
100	185.2	203.7	222.2	240.8	259.3	277.8	296.3	314.8	333.4	351.9
200	370.4	388.9	407.4	426.0	444.5	463.0	481.5	500.0	518.6	537.1
300	555.6	574.1	592.6	611.2	629.7	648.2	666.7	685.2	703.8	722.3
400	740.8	759.3	777.8	796.4	814.9	833.4	851.9	870.4	889.0	907.5
500	926.0	944.5	963.0	981.6	1000	1019	1037	1056	1074	1093
600	1111	1130	1148	1167	1185	1204	1222	1241	1259	1278
700	1296	1315	1333	1352	1370	1389	1407	1426	1444	1463
800	1482	1500	1519	1537	1556	1574	1593	1611	1630	1648
900	1667	1685	1704	1722	1741	1759	1778	1796	1815	1834
KM/NM	0	1	2	3	4	5	6	7	8	9
10	0	0.540	1.080	1.620	2.160	2.700	3.780	4.320	4.320	4.860
10	5.40	5.939	6.479	7.019	7.559	8.099	9.179	9.719	9.719	10.26
20	10.80	11.34	11.88	12.42	12.96	13.50	14.58	15.12	15.12	15.66
30	16.20	16.74	17.28	17.82	18.36	18.90	19.98	20.52	20.52	21.06
40	21.60	22.14	22.68	23.22	23.76	24.30	25.38	25.92	25.92	24.46
50	27.00	27.54	28.08	28.62	29.16	29.70	30.24	31.32	31.32	31.86
60	32.40	32.94	33.48	34.02	34.56	35.10	35.64	36.72	36.72	37.26
70	37.80	38.34	38.88	39.42	39.96	40.50	41.04	42.12	42.12	42.66
80	43.20	43.74	44.28	44.82	45.36	45.90	46.44	47.52	47.52	48.05
90	48.59	49.13	49.67	50.21	50.75	51.29	51.83	52.91	52.91	53.45
	0	10	20	30	40	50	60	70	80	90
100	54.00	59.40	64.80	70.20	75.60	80.99	86.39	91.79	97.19	102.6
200	108.0	113.4	118.8	124.2	129.6	135.0	140.4	145.8	151.2	156.6
300	162.0	167.4	172.8	178.2	183.6	189.0	194.4	199.8	205.2	210.6
400	216.0	221.4	226.8	232.2	237.6	243.0	248.4	253.8	259.2	264.6
500	270.0	275.4	280.8	286.2	291.6	297.0	302.4	307.8	313.2	318.6
600	324.0	329.4	334.8	340.2	345.6	351.0	356.4	361.8	367.2	372.6
700	378.0	383.4	388.8	394.2	399.6	405.0	410.4	415.8	421.2	426.6
800	432.0	437.4	442.8	448.2	453.6	459.0	464.4	469.8	475.2	480.5
900	485.9	491.3	496.7	502.1	507.5	512.9	518.3	523.7	529.1	534.5

TABLES AND CODES
GEN 2.6 CONVERSION TABLES
NAUTICAL MILES/METERS/NAUTICAL MILES

NM/M	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0	185.2	370.4	555.6	740.8	926	1111.2	1296.4	1481.6	1666.8
1	1852	2037.2	2222.4	2407.6	2592.8	2778	2963.2	3148.4	3333.6	3518.8
2	3704	3889.2	4074.4	4259.6	4444.8	4630	4815.2	5000.4	5185.6	5370.8
3	5556	5741.2	5926.4	6111.6	6296.8	6482	6667.2	6852.4	7037.6	7222.8
4	7408	7593.2	7778.4	7963.6	8148.8	8334	8519.2	8704.4	8889.6	9074.8
5	9260	9445.2	9630.4	9815.6	10008	10186	10371	10556	10724	10927
6	11112	11297	11482	11668	11853	12038	12223	12408	12594	12779
7	12964	13149	13334	13520	13705	13890	14075	14260	14446	14631
8	14816	15001	15186	15372	15557	15742	15927	16121	16298	16483
9	16668	16853	17038	17224	17409	17594	17779	17969	18150	18300
M/NM	0	100	200	300	400	500	600	700	800	900
0	0	0.54	0.108	0.162	0.216	0.27	0.324	0.378	0.432	0.486
1000	0.54	0.594	0.648	0.702	0.756	0.81	0.864	0.918	0.972	1.026
2000	1.08	1.134	1.188	1.242	1.296	1.35	1.404	1.458	1.512	1.566
3000	1.62	1.674	1.728	1.782	1.836	1.89	1.944	1.998	2.052	2.106
4000	2.16	2.214	2.268	2.322	2.376	2.45	2.484	2.538	2.592	2.646
5000	2.7	2.754	2.808	2.862	2.916	2.97	3.024	3.078	3.132	3.186
6000	3.24	3.294	3.348	3.402	3.456	3.51	3.564	3.618	3.672	3.726
7000	3.78	3.834	3.388	3.942	3.996	4.05	4.104	4.158	4.212	4.266
8000	4.32	4.374	4.428	4.482	4.536	4.59	4.644	4.698	4.752	4.805
9000	4.86	4.913	4.967	5.021	5.075	5.129	5.183	5.237	5.291	5.345

TABLES AND CODES
CONVERSION TABLES-KILOGRAMES TO POUNDS 1KG=2.20LB

Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb
1	2.20	40	88.18	79	174.16	10000	22046.0
2	4.41	41	90.39	80	176.37	11000	24250.6
3	6.61	42	92.59	81	178.57	12000	26455.2
4	8.82	43	94.80	82	180.78	13000	28659.8
5	11.02	44	97.00	83	182.98	14000	30864.4
6	13.23	45	99.21	84	185.19	15000	33069.0
7	15.43	46	101.41	85	187.39	16000	35273.6
8	17.64	47	103.62	86	189.60	17000	37478.2
9	19.84	48	105.82	87	191.80	18000	39682.2
10	22.05	49	108.03	88	194.01	19000	41887.4
11	24.25	50	110.23	89	196.21	20000	44092.0
12	26.46	51	112.44	90	198.41	21000	46296.6
13	28.66	52	114.64	91	200.62	22000	48501.2
14	30.86	53	116.84	92	202.82	23000	50705.8
15	33.07	54	119.05	93	205.03	24000	52910.4
16	35.27	55	121.25	94	207.23	25000	55115.0
17	37.48	56	123.46	95	209.44	26000	57319.6
18	39.68	57	125.66	96	211.64	27000	59524.2
19	41.89	58	127.87	97	213.85	28000	61728.2
20	44.09	59	130.07	98	216.05	29000	63933.4
21	46.30	60	132.82	99	218.26	30000	66138.0
22	48.50	61	134.48	100	220.5	35000	77161.0
23	50.71	62	136.69	200	440.9	40000	88184.0
24	52.91	63	138.89	300	661.4	45000	99207.0
25	55.12	64	141.09	400	881.8	50000	110230.0
26	57.32	65	143.30	500	1102.3	60000	132276.0
27	59.52	66	145.50	600	1322.8	70000	154322.0
28	61.73	67	147.71	700	1543.2	80000	176368.0
29	63.93	68	149.91	800	1763.7	90000	198414.0
30	66.14	69	152.12	900	1984.1	100000	220460.0
31	68.34	70	154.32	1000	2204.6		
32	70.55	71	156.53	2000	4409.2		
33	72.75	72	158.73	3000	6613.8		
34	74.96	73	160.94	4000	8818.4		
35	77.16	74	163.14	5000	11023.0		
36	79.37	75	165.35	6000	13277.6		
37	81.57	76	167.55	7000	15432.2		
38	83.78	77	169.75	8000	17636.8		
39	85.98	78	171.96	9000	19841.4		

TABLES AND CODES

CONVERSION TABLES-POUNDS TO KILOGRAMES 1LB=0.454KG									
Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg
1	0.454	41	18.898	81	36.741	13000	5896.670	53000	24040.270
2	0.907	42	19.501	82	37.194	14000	6350.670	54000	24493.860
3	1.361	43	19.505	83	37.648	15000	6803.850	55000	24947.450
4	1.814	44	19.958	84	38.101	16000	7257.440	56000	25401.000
5	2.268	45	20.412	85	38.555	17000	7711.020	57000	25854.630
6	2.722	46	20.866	86	39.009	18000	8164.620	58000	26308.222
7	3.175	47	21.319	87	39.462	19000	8618.210	59000	26761.810
8	3.629	48	21.773	88	39.916	20000	9071.800	60000	27215.400
9	4.802	49	22.226	89	40.369	21000	9525.390	61000	27668.990
10	4.536	50	22.68	90	40.823	22000	9978.980	62000	28122.580
11	4.990	51	23.134	91	41.277	23000	10432.570	63000	28576.170
12	5.443	52	23.587	92	41.730	23000	10886.160	64000	29029.760
13	5.897	53	24.041	93	42.184	25000	11339.750	65000	29483.350
14	6.350	54	24.494	94	42.637	26000	11793.340	66000	29936.940
15	6.804	55	24.948	95	43.091	27000	12246.930	67000	30390.530
16	7.258	56	25.402	96	43.542	28000	12700.20	68000	30844.120
17	7.711	57	25.855	97	43.998	29000	13154.110	69000	31297.710
18	8.165	58	26.309	98	44.451	30000	13607.700	70000	31751.300
19	8.618	59	26.762	99	44.905	31000	14061.290	71000	32204.890
20	9.072	60	27.216	100	45.359	32000	14514.880	72000	32658.480
21	9.526	61	27.670	200	90.718	33000	14968.470	73000	33112.070
22	9.979	62	28.123	300	136.077	34000	15422.060	74000	335656.660
23	10.433	63	28.577	400	181.436	35000	15975.650	75000	34019.250
24	10.86	64	29.030	500	226.795	36000	16329.240	76000	34472.840
25	11.340	65	29.484	600	272.154	37000	16782.830	77000	34926.340
26	11.794	66	29.938	700	317.513	38000	17236.420	78000	35380.020
27	12.247	67	30.391	800	362.872	39000	17690.010	79000	35833.610
28	12.701	68	30.845	900	408.231	40000	18143.600	80000	36287.200
29	13.154	69	31.298	1000	453.590	41000	18597.190	81000	36740.790
30	13.608	70	31.751	2000	909.180	42000	19050.780	82000	37194.380
31	14.062	71	32.205	3000	1360.770	43000	19504.370	83000	37647.970
32	14.560	72	32.658	4000	1814.360	44000	19957.960	84000	38101.560
33	14.970	73	33.112	5000	2267.950	45000	29411.550	85000	38555.150
34	15.424	74	33.565	6000	2721.540	46000	20865.140	86000	39008.740
35	15.878	75	34.090	7000	3175.130	47000	21318.730	87000	39462.330
36	16.332	76	34.473	8000	3628.720	48000	21772.320	88000	39915.920
37	16.756	77	34.926	9000	4982.310	49000	22225.910	89000	40369.510
38	17.240	78	35.380	10000	4535.900	50000	22679.500	90000	40823.100
39	17.694	79	35.833	11000	4989.390	51000	23133.090	100000	45349.900
40	18.144	80	36.287	12000	5443.080	52000	23586.080	200000	90718.000

GEN 2-7 Sunrise-Sunset tables

1 The tables on the following pages have been prepared by the Ethiopian National Meteorological

Agency and are reproduced here with their permission. The tables include 6 civil airports and aerodromes.

1.1 The times in the tables are given in UTC for sunrise (SR) and sunset (SS) for the years from 2007 to 2012.

1.2 The tables are calculated for the year 2007, which is used as an "average year" for the years from 2007 to 2012. In this period, the times on an arbitrary date and place will deviate less than 2 minutes from the times on the same date and place in the "average year".

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BAHIR DAR/Bahir Dar	GEN 2.7.3	JIMMA	GEN 2.7.6
DIRE DAWA/Dire Dawa Int'l	GEN 2.7.4	GONDER	GEN 2.7.7

ADDIS ABABA
 Bole International
HAAB
 085800N
 0384754E

MONTH DAY	Time of SR	Time of SS	MONTH DAY	Time of SR	Time of SS	MONTH DAY	Time of SR	Time of SS
JAN 1	0342	1515	MAY 1	0308	1537	SEP 3	0316	1533
6	0344	1518	6	0306	1538	8	0316	1530
11	0345	1521	11	0305	1538	13	0315	1526
16	0347	1523	16	0304	1539	18	0315	1523
21	0348	1526	21	0303	1540	23	0315	1520
26	0349	1527	26	0303	1541	28	0314	1517
31	0349	1529	31	0303	1543	30	0314	1516
FEB 5	0349	1531	JUN 5	0303	1543	OCT 3	0314	1515
10	0347	1532	10	0304	1544	8	0314	1512
15	0345	1534	15	0305	1545	13	0314	1509
20	0343	1535	20	0306	1547	18	0314	1507
25	0342	1535	25	0307	1549	23	0314	1505
28	0340	1536	30	0308	1550	28	0315	1503
MAR 2	0340	1536	JUL 5	0309	1550	NOV 2	0317	1502
7	0337	1536	10	0311	1551	7	0318	1501
12	0335	1536	15	0312	1551	12	0320	1500
17	0332	1536	20	0313	1551	17	0321	1500
22	0329	1536	25	0314	1550	22	0323	1500
27	0326	1536	30	0315	1549	27	0325	1501
APR 1	0322	1536	AUG 4	0315	1548	DEC 2	0327	1502
6	0320	1536	9	0316	1546	7	0329	1504
11	0317	1536	14	0316	1544	12	0331	1506
16	0314	1536	19	0316	1542	17	0334	1508
21	0312	1536	24	0316	1539	22	0337	1510
26	0310	1536	29	0316	1536	27	0340	1512

BAHIR DAR
 Bahir Dar
 HABD
 113500N 0371900E

MONTH DAY	Time of SR	Time of SS	MONTH DAY	Time of SR	Time of SS	MONTH DAY	Time of SR	Time of SS
JAN 1	0348	1521	MAY 1	0314	1543	SEP 3	0322	1538
6	0350	1524	6	0312	1544	8	0322	1536
11	0351	1527	11	0311	1544	13	0321	1532
16	0353	1529	16	0310	1545	18	0321	1529
21	0354	1532	21	0309	1546	23	0321	1526
26	0355	1533	26	0309	1547	28	0320	1523
31	0355	1535	31	0309	1549	30	0320	1522
FEB 5	0355	1537	JUN 5	0309	1550	OCT 3	0320	1521
10	0353	1538	10	0310	1551	8	0320	1518
15	0351	1540	15	0311	1552	13	0320	1515
20	0349	1541	20	0312	1554	18	0320	1513
25	0348	1541	25	0313	1555	23	0320	1511
28	0346	1542	30	0314	1556	28	0321	1509
MAR 2	0346	1542	JUL 5	0315	1556	NOV 2	0320	1508
7	0343	1542	10	0317	1557	7	0320	1507
12	0341	1542	15	0318	1557	12	0320	1506
17	0338	1542	20	0319	1557	17	0320	1506
22	0335	1542	25	0320	1556	22	0320	1506
27	0332	1542	30	0321	1555	27	0321	1507
APR 1	0327	1542	AUG 4	0321	1554	DEC 2	0323	1508
6	0324	1542	9	0322	1552	7	0324	1510
11	0321	1542	14	0322	1550	12	0326	1512
16	0319	1542	19	0322	1548	17	0327	1514
21	0318	1542	24	0322	1545	22	0329	1516
26	0316	1543	29	0322	1542	27	0330	1519

DIRE DAWA
 Dire Dawa International
HADR
 093818N
 0415054E

MONTH DAY	Time of SR	Time of SS	MONTH DAY	Time of SR	Time of SS	MONTH DAY	Time of SR	Time of SS
JAN 1	0330	1503	MAY 1	0256	1525	SEP 3	0304	1521
6	0332	1506	6	0254	1526	8	0304	1518
11	0333	1509	11	0253	1526	13	0304	1514
16	0335	1511	16	0252	1527	18	0303	1411
21	0336	1514	21	0251	1528	23	0303	1408
26	0337	1515	26	0251	1529	28	0302	1405
31	0337	1517	31	0251	1530	30	0302	1404
FEB 5	0337	1524	JUN 5	0251	1532	OCT 3	0302	1503
10	0335	1524	10	0252	1533	8	0302	1500
15	0333	1524	15	0253	1534	13	0302	1457
20	0331	1524	20	0254	1536	18	0302	1455
25	0330	1524	25	0255	1537	23	0302	1453
28	0328	1524	30	0256	1538	28	0303	1451
MAR 2	0328	1524	JUL 5	0257	1538	NOV 2	0305	1450
7	0325	1524	10	0259	1539	7	0306	1449
12	0323	1524	15	0300	1539	12	0308	1448
17	0320	1524	20	0301	1539	17	0309	1448
22	0322	1524	25	0302	1538	22	0311	1448
27	0314	1524	30	0303	1537	27	0313	1449
APR 1	0310	1524	AUG 4	0303	1536	DEC 2	0315	1450
6	0308	1524	9	0304	1534	7	0317	1452
11	0305	1524	14	0304	1532	12	0319	1454
16	0306	1524	19	0304	1530	17	0322	1456
21	0300	1524	24	0304	1527	22	0325	1458
26	0258	1524	29	0304	1524	27	0328	1501

MAKALE
Mekele Alula Aba Nega
HAMK
132800N
0393241E

MONTH DAY	Time of SR	Time of SS	MONTH DAY	Time of SR	Time of SS	MONTH DAY	Time of SR	Time of SS
JAN 1	0339	1512	MAY 1	0305	1534	SEP 3	0313	1530
6	0341	1515	6	0303	1534	8	0313	1527
11	0342	1518	11	0302	1535	13	0312	1523
16	0344	1520	16	0301	1536	18	0312	1520
21	0345	1523	21	0300	1537	23	0312	1517
26	0346	1524	26	0300	1538	28	0311	1514
31	0346	1526	31	0300	1540	30	0311	1513
FEB 5	0346	1528	JUN 5	0300	1541	OCT 3	0311	1512
10	0343	1529	10	0301	1542	8	0311	1509
15	0342	1531	15	0302	1543	13	0311	1506
20	0340	1532	20	0303	1545	18	0311	1504
25	0339	1532	25	0304	1546	23	0311	1502
28	0337	1533	30	0305	1547	28	0312	1500
MAR 2	0337	1533	JUL 5	0306	1547	NOV 2	0314	1459
7	0334	1533	10	0308	1548	7	0315	1458
12	0332	1533	15	0309	1548	12	0317	1457
17	0329	1533	20	0310	1548	17	0318	1457
22	0326	1533	25	0311	1547	22	0320	1457
27	0323	1533	30	0312	1546	27	0322	1458
APR 1	0319	1533	AUG 4	0312	1527	DEC 2	0324	1459
6	0317	1533	9	0313	1526	7	0326	1501
11	0314	1533	14	0313	1523	12	0328	1503
16	0311	1533	19	0313	1520	17	0330	1505
21	0309	1533	24	0313	1517	22	0333	1507
26	0307	1533	29	0313	1514	27	0337	1510

JIMMA
HAJM
074015.76N
0374933.01E

MONTH DAY	Time of SR	Time of SS	MONTH DAY	Time of SR	Time of SS	MONTH DAY	Time of SR	Time of SS
JAN 1	0346	1519	MAY 1	0312	1541	SEP 3	0320	1537
6	0348	1522	6	0310	1542	8	0320	1534
11	0349	1525	11	0309	1542	13	0319	1530
16	0351	1527	16	0308	1543	18	0319	1527
21	0352	1530	21	0307	1544	23	0319	1524
26	0353	1531	26	0307	1545	28	0318	1521
31	0353	1533	31	0307	1547	30	0318	1520
FEB 5	0353	1535	JUN 5	0307	1548	OCT 3	0318	1519
10	0351	1536	10	0308	1549	8	0318	1516
15	0349	1538	15	0309	1550	13	0318	1513
20	0347	1539	20	0310	1552	18	0318	1511
25	0345	1539	25	0311	1553	23	0318	1509
28	0344	1540	30	0312	1554	28	0319	1507
MAR 2	0344	1540	JUL 5	0313	1554	NOV 2	0321	1506
7	0341	1540	10	0315	1555	7	0322	1505
12	0338	1540	15	0316	1555	12	0324	1504
17	0336	1540	20	0317	1555	17	0325	1504
22	0333	1540	25	0318	1554	22	0327	1504
27	0330	1540	30	0319	1553	27	0329	1507
APR 1	0326	1540	AUG 4	0319	1552	DEC 2	0331	1506
6	0324	1540	9	0320	1550	7	0333	1508
11	0321	1540	14	0320	1548	12	0335	1510
16	0318	1540	19	0320	1546	17	0338	1512
21	0316	1540	24	0320	1543	22	0341	1514
26	0314	1540	29	0320	1540	27	0344	1517

GONDAR HAGN
123156.40N 0372554.47E

MONTH DAY	Time of SR	Time of SS	MONTH DAY	Time of SR	Time of SS	MONTH DAY	Time of SR	Time of SS
JAN 1	0347	1520	MAY 1	0313	1542	SEP 3	0321	1538
6	0349	1523	6	0311	1543	8	0321	1535
11	0350	1526	11	0310	1543	13	0320	1531
16	0352	1528	16	0309	15444	18	0320	1528
21	0353	1531	21	0308	1545	23	0320	1525
26	0354	1532	26	0308	1546	28	0319	1522
31	0354	1534	31	0308	1548	30	0319	1521
FEB 5	0354	1536	JUN 5	0308	1549	OCT 3	0319	1520
10	0352	1537	10	0309	1550	8	0319	1517
15	0350	1539	15	0310	1551	13	0319	1514
20	0348	1540	20	0311	1553	18	0319	1512
25	0347	1540	25	0312	1554	23	0319	1510
28	0345	1541	30	0313	1555	28	0320	1508
MAR 2	0345	1541	JUL 5	0314	1555	NOV 2	0322	1507
7	0342	1541	10	0316	1556	7	0323	1506
12	0340	1541	15	0317	1556	12	0325	1505
17	0337	1541	20	0318	1556	17	0326	1505
22	0334	1541	25	0319	1555	22	0328	1505
27	0331	1541	30	0320	1554	27	0330	1506
APR 1	0327	1541	AUG 4	0320	1553	DEC 2	0332	1507
6	0325	1541	9	0321	1551	7	0334	1509
11	0322	1541	14	0321	1549	12	0336	1511
16	0319	1541	19	0321	1547	17	0339	1513
21	0317	1541	24	0321	1544	22	0342	1515
26	0315	1541	29	0321	1541	27	0345	1518

GEN 3 SERVICES**GEN 3.1 AERONAUTICAL INFORMATION****SERVICE****1. Responsible Service**

1.1 The Aeronautical Information Service, which forms part of the Air Navigation Department of the Ethiopian Civil Aviation Authority ensures the flow of information necessary for the safety, regularity and efficiency of international and national air navigation within the area of its responsibility as indicated under Para. 2.1 below..

1.2 AIS Headquarters

Postal Address: Ethiopian Civil Aviation Authority

Aeronautical Information Services Directorate

P.O. Box 978

Addis ABABA, Ethiopia

Telephone Number: 251-011-665 02 00 Ext. 318

Tele fax Number: 251-011-6650281, 251-011-665 02 74

AFTN Address: HAAAYGYX

E-mail caa.airnav@ethionet.et

E-mail for Addis Ababa Bole International:
caa.airnav@ethionet.et

1.3 International NOTAM office

The International NOTAM Office is under the Aeronautical Information Services Directorate of the Air Navigation Department at the headquarters, which is located at Addis Ababa Bole International Airport.

Postal Address:

Ethiopian Civil Aviation Authority

International NOTAM Office

Addis Ababa Bole International Airport

P.O. Box 978

Addis ABABA, Ethiopia

Telephone Number: 251-011-665 02 60, 251-011-665 02 00 Ext 280

Tele fax Number: +251-011-665 02 74

AFTN Address: HAABYNYX

Collective AFTN Address: HAZZNAXX

E-mail caa.airnav@ethionet.et

2. Area of responsibility

2.1 The Aeronautical Information Service (AIS) in Ethiopia is responsible for the collection and dissemination of information for the entire territory of Ethiopia and for the Airspace which is included in the Addis Ababa Flight Information Region for air traffic control purposes.

3. Aeronautical Publications

3.1 Aeronautical Information is provided in the form of the Integrated Aeronautical Information Package consisting of the following elements:

- Aeronautical Information Publication (AIP)
- Amendment service to the AIP (AIP AMDT)
- Supplement to the AIP (AIP SUP)
- NOTAM and pre-flight information (PIB)
- Aeronautical Information Circulars (AIC)
- Checklists and Summaries

3.2 *Aeronautical Information Publication (AIP)*

3.2.1 The AIP, issued in one volume is the basic aeronautical information document published for Ethiopia and contains information of a lasting character essential to air navigation. It is available in English only and is maintained up to date by an amendment service at regular intervals of twice a year consisting of

reprinted pages and in the case of minor amendments manuscript corrections, amendments together with checklists are normally issued as and when necessary.

3.3 *Amendment Service to the AIP (AIP AMDT)*

3.3.1 AIP amendment publication dates will be on the first AIRAC dates of June and December of each year. When an AIP amendment will not be published at the established interval or publication dates, a NIL notification shall be originated and distributed by the monthly printed plain-language summary of NOTAM or by AIP supplements.

3.4 *Supplements to the AIP (AIP SUP)*

3.4.1 AIP supplements are published as and when necessary to bring to the attention of users any temporary changes of long duration (three months or longer) and/or information of operational significance containing extensive text and/or graphics, which affect one or more parts of the AIP. Operationally significant changes are published under the AIRAC procedure, specified in the Aeronautical Information Services Manual (Doc 8126) page 37 item 4.4. AIRAC information will be issued so that the information will be received by the user not later than 28 days, and for major changes not later than 56 days, before the effective date.

- 3.4.2 AIP supplements are published as and when necessary to disseminate information of direct operational significance which:
- a) Is of an ephemeral nature
 - b) Requires advance distribution or,
 - c) Is appropriate to the AIP but immediate dissemination is required.

- 3.4.3 Each AIP supplement is assigned a serial number, a new series being established for each calendar year. A checklist of AIP supplement currently in force is issued once a year. AIP supplement is retained as the first item in an AIP binder by means of yellow pages.

3.5 NOTAM and Pre - Flight Information Bulletins (PIB)

- a) *NOTAM (Distribution by Telecommunications)*

NOTAM distributed by telecommunications are used mainly for the notification of temporary

information of timely significance, unforeseen changes, unserviceabilities etc., or any other emergency is distributed by the international NOTAM Office in three series as follows:

Series A NOTAM NOTAM containing information of concern to long or medium range flights, and given selected international distribution.

Series B NOTAM NOTAM containing full information on all airports facilities and procedures available for use by international distribution to adjacent states only.

Series C NOTAM NOTAM containing information of concern to Aircraft other than those engaged in International civil aviation, and given national distribution only.

Each NOTAM is assigned a serial number preceded by the appropriate letter indicating the series. The serial number starts with NR-1 at 0000 UTC on January 1 every year.

NOTAMs are exchanged between Addis Ababa NOF and other international NOTAM offices as follows.

	A Series		B Series
Abu Dhabi (E)	Dar Es-Salaam	Monrovia	Cairo
Accra	Djibouti	Moscow	Dar Es-Salaam
Amsterdam (E)	Entebbe	Muscat	Djibouti
Amman	Frankfurt	Nicosia	Entebbe
Ankara (R)	Harare	Nairobi	Jeddah
Antananarivo	Helsinki (E)	New Delhi(E)	Karachi
Asmara	Jeddah	Paris	Khartoum
Athinai	Johannesburg	Rome	Mogadiscio
Angola	Karachi	Sanaa	Nairobi
Bahrain	Khartoum	Singapore (E)	Roma
Bangkok	Kinshasa	Sofia	Sanaa
Beijing	Kigali	Tel Aviv	
Beirut	Kuwait	Tripoli	
Beograd (R)	Lagos	Washington (E)	
Bombay	Lilongwe	Wien (R)	
Brazzaville	London	Wind hoak(E)	
Bucuresti (R)	Lusaka	Amman	
Bujumbura (R)	Madrid	Asmara	
Cairo	Maputo (E)	Athinai	
Copenhagen (E)	Mauritius	Bombay	
Dakar	Mogadiscio	Beijing	

E - Sent

R - Received only

By arrangement with the Civil Aviation Authority, responsible for the Aeronautical Information Service of the Republic of Djibouti, the International NOTAM office of Addis Ababa issues NOTAM class I concerning the Republic of Djibouti.

b) *Pre-flight information bulletins (PIB);*

Important NOTAMs of selected coverage and Maps and charts are displayed on the wall at both Addis Ababa Bole and Dire Dawa Int'l airport briefing offices for self briefing purposes.

3.6 **Aeronautical Information Circular (AIC)**

The Aeronautical Information circular contains information of general technical

interest and information relating to administrative matters which is inappropriate to AIP or NOTAM, and are published in English only. A checklist of outstanding AIC is issued at the end of each calendar year.

3.7 **Checklists and Summary of NOTAM**

A checklist of NOTAM currently in force is issued every month over the AFTN and in addition a printed plain language summary of their substance is sent by air mail to those who had originally received, the NOTAM over the AFTN as well as to others on request.

A Checklist of AIP supplements and a checklist of Aeronautical Information Circulars currently in force are issued yearly at the end of December.

3.8 Sale of Publications

AIP Ethiopia including amendment service and AIP supplement are distributed free of charge to ICAO Authorities and all other AIS offices on the basis of reciprocity. For any other subscribers the price should be payable in USD or equivalent in birr based on the prevailing bank exchange rate as follows:

AIP.....	USD 100
AIP amendment per year.....	USD 30
AIP Supplement per year.....	USD 10
Postage.....	USD 60

Payment should be made to:

Civil Aviation Authority,
Account No. 0172094005100.
Commercial Bank of Ethiopia, Airport
Branch,

Addis Ababa.

4. AIRAC system

In order to control and regulate the flow of changes requiring amendments to Aeronautical Information such as conditions of aerodrome and en-route facilities, procedures and navigational warnings and amendments to charts; such changes, whenever possible, will be issued at predetermined dates, according to the AIRAC system.

These Amendments/Supplements which are identified by the acronym "AIRAC" shall be distributed at least 42 days in advance of the effective date with the objective of reaching recipients at least 28 days in advance. The schedule of the pre-determined dates of the "Regulated system" (AIRAC) effective dates for publication of aeronautical information applicable for the year 2005 to 2018 inclusive are indicated hereunder.

2013	2014	2015	2016	2017	2018
10 January	9 January	8 January	7 January	5 January	4 January
7 February	6 February	5 February	4 February	2 February	1 February
7 March	6 March	5 March	3 March	2 March	1 March
4 April	3 April	2 April	31 March	30 March	29 March
2 May	1 May	30 April	28 April	27 April	26 April
30 May	29 May	28 May	26 May	25 May	24 May
27 June	26 June	25 June	23 June	22 June	21 June
25 July	24 July	23 July	21 July	20 July	19 July
22 August	21 August	20 August	18 August	17 August	16 August
19 September	18 September	17 September	15 September	14 September	13 September
17 October	16 October	15 October	13 October	12 October	11 October
14 November	13 November	12 November	10 November	9 November	8 November
12 December	11 December	10 December	8 December	7 December	6 December

Schedule of AIRAC effective dates

5. Pre- Flight information service at Aerodromes

A pre-flight information service is available at Addis Ababa Bole Int'l and Dire Dawa Int'l Airports. AIPs, Supplements to the AIP, NOTAM, AIC, Checklists and summaries are available in the International NOTAM office

located at the Addis Ababa Bole Int'l Airport. Important NOTAMs of selected coverage with WAC 1:1,000,000 and Jeppesen Flight planning charts are displayed.

A self briefing pre-flight information service is available at each of the following aerodromes, with the coverage indicated.

<i>Aerodrome</i>	<i>Coverage</i>
Addis Ababa/ Bole Int'l	Abu Dhabi, Accra, Amsterdam, Athens, Bangkok, Beijing, Bombay, Brazzaville, Bujumbura, Cairo, Dakar, Dar Es-Salaam, Djibouti, Entebbe, Frankfurt, Harare, Jeddah, Johannesburg, Karachi, Khartoum, Kinshasa, Kigali, Lagos, Lilongwe, London, Lusaka, Maputo, Monrovia, Muscat, Nairobi, New Delhi, Rome, Sanaa.
Dire Dawa Int'l	Abu Dhabi, Aden, Asmara, Bombay, Djibouti, Muscat, Nairobi, Sanaa.

GEN 3.2 Aeronautical charts**3.2.1 Responsible Authority**

The Civil Aviation Authority has a limited range of aeronautical charts available for use by all types of Civil Aircraft. The Civil Aviation Authority produces those Charts, associated with the AIP, which are listed in GEN 3-2.3 and 3-2.4 of this section with the exception of the small scale charts, which are produced in the country. These charts are available on sale from the agents listed in paragraph 3. Other charts, suitable for pre-flight planning and briefing, selected from those listed in the ICAO Aeronautical Chart Catalogue (Doc 7101-MAP /562), are available for reference at aerodrome AIS units.

ICAO charts are produced in accordance with ICAO Standards, Recommended Practices and, when applicable with the procedures contained in the following ICAO documents.

Annex 4 -Aeronautical Charts

Doc 8168 Aircraft Operations, Vol. II (Construction of Visual and instrument flight procedures).

Doc 8697 Aeronautical Chart Manual.

There are no differences to these provisions.

3.2.2 Maintenance of charts

3.2.2.1 The aeronautical charts included in the AIP are regularly kept up-to-date or are replaced by amendments to the AIP. Significant amendments or revisions in aeronautical information to other aeronautical chart series are also included in the AIP and may be promulgated in the AIP supplement if appropriate. Information concerning new maps and charts will be notified by Aeronautical Information Circular or AIP Supplement as appropriate.

3.2.2.2 Items of information found after publication to have been incorrect at the

aeronautical information date, are corrected immediately by NOTAM if they are of operational significance, attention being directed to the particular chart affected.

3.2.2.3 Revision of the aeronautical information on all charts is constantly in progress and amended reprints are published regularly twice a year as production resources permit.

3.2.3 Purchase arrangements

The charts as listed under paragraph GEN 3-2.3 / GEN 3-2.4 may be obtained from the:

Postal Address: Ethiopian Civil Aviation

Authority

Aeronautical Information Services Directorate

P.O. Box 978

Addis Ababa, Ethiopia

Telephone Number: 251-011 665 02 00/ Ext. 318

Fax Number: 251-011-665 02 81

AFTN Address: HAAAYGYX

E-mail Address: caa.airnav@ethionet.et

3-2.4 Aeronautical chart series available

1. The following ICAO charts are produced and published by the Civil Aviation Authority Ethiopia:

- a) World Aeronautical Chart - ICAO 1:1,000,000
- b) Aerodrome Chart - ICAO
- c) Aircraft Ground movement Chart - ICAO
- d) Aircraft Parking/Docking Chart - ICAO

- e) Aerodrome Obstacle Chart-ICAO Type A (Operating Limitations)
- f) Precision Approach Chart- ICAO
- g) En route Chart - ICAO
- h) Area Chart - ICAO
- i) Standard Departure Chart- Instrument (SID)-ICAO
- j) Standard Arrival Chart - Instrument (STAR) - ICAO
- k) Instrument Approach Chart- ICAO
- l) Visual Approach Chart - ICAO

List of chart series

Title of series	Scale	Name and/or number		Price(\$)	Date
World Aeronautical Chart-ICAO(WAC)	1:1000,000	Addis Ababa Asmara Awasa Degeh Bur Goba-Robe Nakfa Nekemte	(2789) (2688) (2810) (2790) (2809) (2667) (2788)	10 10 10 10 10 10 10	Nov 15 Nov 15 Nov 15 Nov 15 Nov 15 Nov 15 Nov 15
Aircraft parking/doking Chart-ICAO		Addis Ababa Bole/Int'l	AD2-HAAB-22		13 DEC 12
Instrument Approach Chart-ICAO (IAC)	1:250 000	Addis Ababa Bole/Int'l - ILS, RWY 25L - RNAV (GNSS) RWY 25R - RNAV (GNSS) RWY 25L - RNAV (GNSS) 07R - RNAV (GNSS) 07L - ILS RWY 25R (CAT A/B/C/D) - VOR/DME RWY 25R (CAT A/B/C/D) - VOR/DME RWY 25R (CAT C/D) - VOR/DME/AB/BL RWY 25 CAT A /B - VOR/DME ADS RWY 25L CATA/BC/D - NDBs AB/BL RWY 25 CAT A/B - AB/BL NDBs RWY 25 CAT C/D - ILS RWY 25L - RNAV (GNSS) RWY 07L	AD2.HAAB-29 AD2.HAAB-30 AD2.HAAB-31 AD2.HAAB-32 AD2.HAAB-33 AD2.HAAB-34 AD2.HAAB-35 AD2.HAAB-36 AD2.HAAB-37 AD2.HAAB-38 AD2.HAAB-39 AD2.HAAB-40 AD2.HAAB-45 AD2.HAAB-47		25 JUN 15 25 JUN 15 25 JUN 15 26 JUN 14 26 JUN 14 26 JUN 14 26 JUN 14 26 JUN 14 26 JUN 14 13 JUN 02 12 SEP 96 13 JUN 02 25 JUN 15 25 JUN 15
		Axum - RNAV (GNSS) RWY 34	AD2-HAAX-10		25 JUN 15
		Arba Minch			
		NDB 21 CAT A/B	AD2-HAAM-4		24 JUN 04
		Bahir Dar - VOR/DME RWY 04 CAT A/B VOR/DME RWY 04 C/D - RNAV (GNSS) RWY 04 - RNAV (GNSS) RWY 22	AD2-HABD-8 AD2-HABD-9 AD2-HABD-11 AD2-HABD-12		19 JUN 08 19 JUN 08 25 JUN 15 25 JUN 15
		Dire Dawa Int'l VOR/DME RWY 15 CAT A/B VOR/DME RWY 15 CAT C/D L RWY 15 CAT A/B L RWY 15 CAT C/D	AD2-HADR-10 AD2-HADR-11 AD2-HADR-12 AD2-HADR-13		13 JUN 02 13 JUN 02 13 JUN 02 13 JUN 02
		Gambella RWY 36 CAT A/B NDB RWY 36 CAT C/D LOCATER NDB BR RWY 36	AD2-HAGM-8 AD2-HAGM-9 AD2-HAGM-10 AD2-HAGM-11		12 SEP 96 12 SEP 96 13 JUN 02 13 JUN 02

List of chart series

Title of series	Scale	Name and/or number	Price(\$)	Date
Instrument Approach Chart-ICAO (IAC)		Gonder RNAV GNSS RWY 36	AD2-HAGN-9	25 JUN 15
		Jimma NDB RWY 31 CAT A/B	AD2-HAJM-8	12 SEP 96
		Mekele NDB RWY 11 CAT A/B/C/D Visual Approach chart-ICAO VOR/DME RWY 29 CAT A/B/C/D SID CHART ICAO VOR/DME RWY 11 CAT A/B/C/D VOR/DME ILS RWY 29 CAT A/B/C/D	AD2-HAMK-8 AD2-HAMK-10 AD2-HAMK-11 AD2-HAMK-12 AD2-HAMK-13 AD2-HAMK-14	25 JUN 15 12 SEP 96 25 JUN 15 02 FEB 06 25 JUN 15 25 JUN 15
		HAAX NDB RWY 34 CAT A/B	AD2-HAAX-5	24 JUN 04
Visual Approach Chart-ICAO	1:250 000	Addis Ababa Bole/Int'l	AD2-HAAB-41	13 JUN 02
		Axum	AD2-HAAX-8	24 JUN 04
		Bahir Dar	AD2-HABD-10	12 SEP 96
		Gonder	AD2-HAGN-6	12 SEP 96
		Lalibella	AD2-HALL-4	12 SEP 96
		Mekele	AD2-HAMK-9	02 FEB 06
Aerodrome Chart-ICAO (AC)		Addis Ababa Bole/Int'l	AD2-HAAB-20	26 JUN 14
		RWY 07L/25R		
		Arba Minch	AD2-HAAM-5	13 JUN 02
		Axum	AD2-HAAX-6	13 DEC 12
		Bahir Dar	AD2-HABD-6	12 SEP 96
		Dire Dawa Int'l	AD2-HADR-14	13 JUN 02
		Gambella	AD2-HAGM-6	13 JUN 02
		Gonder	AD2-HAGN-4	24 JUN 04
		Jimma	AD2-HAJM-6	12 SEP 96
		Lalibella	AD2-HALL-5	24 JUN 04
		Mekele	AD2-HAMK-6	13 JUN 02
Aerodrome Obstacle Chart-ICAO Type A (AOC)		Addis Ababa Bole/Int'l		
		RWY 07L/25R	AD2-HAAB-23	13 JUN 02
		Addis Ababa Bole/Int'l		
		RWY 07R/25L	AD2-HAAB-24	02 JUN 11
	1:10,000	Arba Minch	AD2-HAAM-6	13 JUN 02
		Axum	AD2-HAAX-7	13 DEC 12
	1:10000	Bahir Dar	AD2-HABD-7	12 SEP 96
	1:10,000	Dire Dawa Int'l	AD2-HADR-9	02 FEB 06
	1:10,000	Gambella	AD2-HAGM-7	13 JUN 02
	1:10,000	Gonder	AD2-HAGN-5	13 JUN 02
	1:10,000	Jimma	AD2-HAJM-7	12 SEP 96
	1:10,000	Lalibella	AD2-HALL-6	24 JUN 04
	1:10,000	Mekele	AD2-HAMK-7	13 JUN 02

List of chart series

<i>Title of series</i>	<i>Scale</i>	<i>Name and/or number</i>		<i>Price(\$)</i>	<i>Date</i>
Enroute-ICAO (EC)		Addis Ababa FIR	ENR 6-1		26 JUN 14
Northern Ethiopia Domestic Route Network		Addis Ababa FIR	ENR 6-4		02 FEB 06
Terminal Area Chart-ICAO (TAC)		Addis Ababa Bole/Int'l	AD2-HAAB-21		26 JUN 14
Standard Instrument Departure Chart-(SID)-ICAO		Addis Ababa Bole/Int'l North and East	AD2-HAAB-26		13 JUN 02
		Addis Ababa Bole/Int'l South and West	AD2.HAAB-27		13 JUN 02
		Axum RNAV (GNSS) RWY 16	AD2-HAAX-9		20 DEC 07
		BAHIR DAR - RNAV (GNSS) RWY 04	AD2-HABD-13		20 DEC 07
		- RNAV (GNSS) RWY 22	AD2 HABD-14		20 DEC 07
		Mekele	AD2.HAMK-12		02 FEB 06
Standard Instrument Arrival Chart (STAR) - ICAO					
		Gonder RNAV(GNSS) RWY 35	AD2-HAGN-8		25 JUN 15
		Addis Ababa Bole/Int'l Addis Ababa RWY25L/R	AD2.HAAB-28		11 DEC 14
		Addis Ababa RNAV(GNSS) RWY 07R/L	AD2.HAAB-42		16 DEC 10
		Axum RNAV (GNSS) RWY 34	AD2.HAAX-11		20 DEC 07
		Bahir Dar RNAV (GNSS) RWY 22	AD2 HABD-15		20 DEC 07
AERODROME GROUND MOVEMENT CHART-ICAO		ADDIS ABABA BOLE /INT'L	AD2 HAAB-46		11 DEC 14

7. Topographical Charts

To supplement the aeronautical charts, a wide range of charts are available from:

Postal Address:

Ethiopian Mapping Agency

P.O.Box 597

Addis Ababa, Ethiopia

Telephone Number 251 11 551 84 45

Tele fax Number 251-11-551 51 89

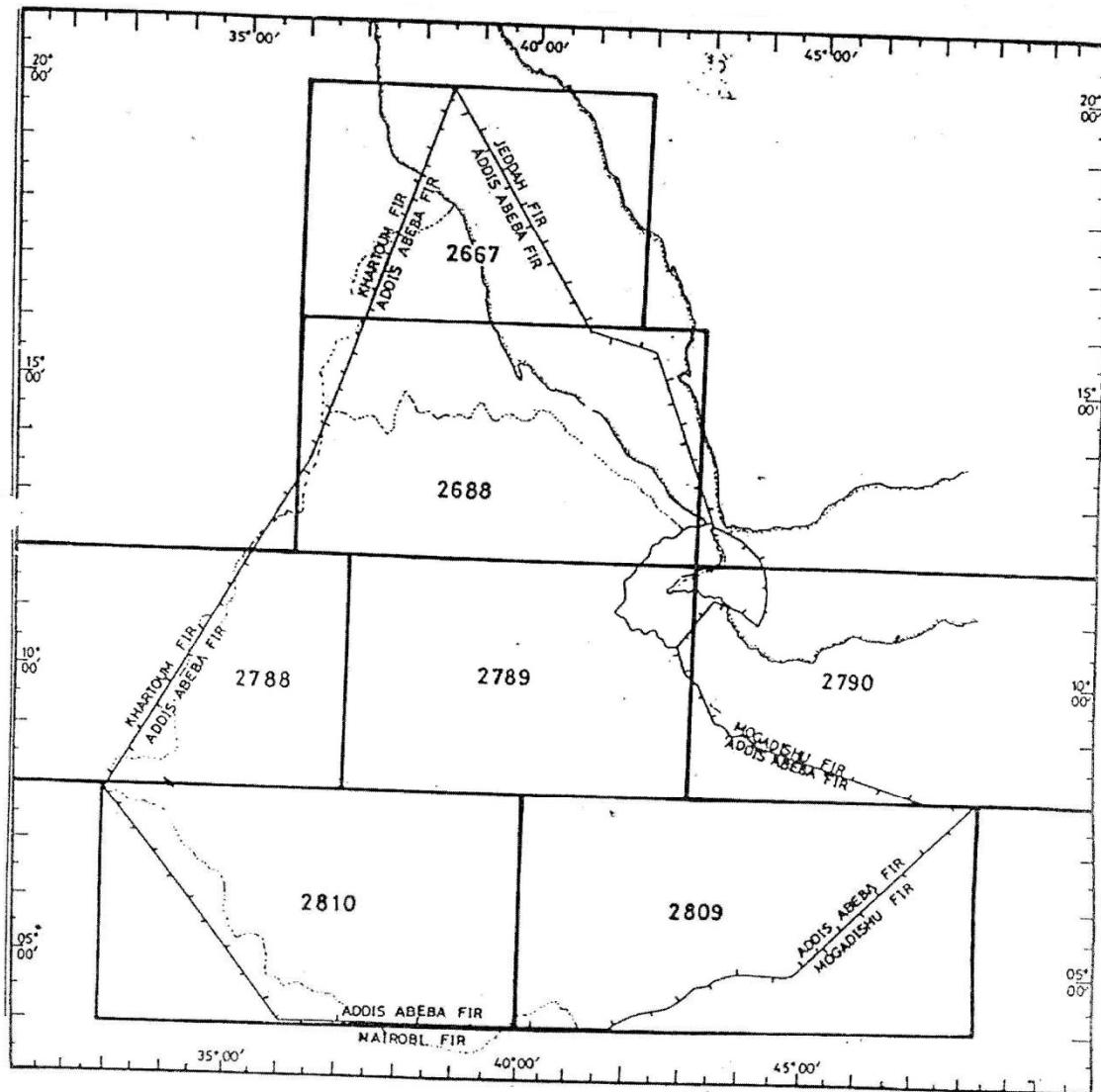
8. Corrections of charts not contained in the AIP

Hereunder following a summary of amendments to be the current charts published by CAA Ethiopia and listed on page GEN 3.2-3 and GEN 3.2-4

Charts	Location	Corrections
WAC 1:1,000,000 2789 Addis Ababa		<p>245 to read FL 660/FL245 outside HA(R) 1 and HA (R) 2</p> <p>-change upper limit of Addis Ababa TMA to read FL 195</p> <p>-change upper limit of Addis Ababa TMA to read FL 660</p> <p>-change route UR 400 ADS VOR/DME to BD NDB to read W887</p> <p>-change route W870 DWA VOR/DME/ AVUSI to read UR780</p> <p>-Delit roure W890 DWA VOR/DME to SOLUL</p> <p>-ATS Airspace moved to Ethio-Eritrian boundary and add ATS route W 885 DWA VOR/DME/Hargeisa and W890 TIKAT/MASLO/MANDERA (See ENR 6.1 AND ENR 4.3)</p>
2688-Asmara	143900N 0391500E	<p>-Add REP point GETAR on route UR870(cancel W890)</p> <p>-change REP point ATBON to read APDOS on route UR/R775</p> <p>-Delete route UR 400 ADS VOR/DME to FIR (14325N 0363212E)</p> <p>-Add route UM220 (RNAV) SML to LW MGA 168°/3486° with REP points:-</p> <p>-USUBA</p>
2810 Awasa	091730N 0342348E 080806N 0343424E 064512N 0345224E 050120N 0351436E	<p>-GM NDB</p> <p>-IMTOR</p> <p>UTOLI</p>

Charts	Location	Corrections
2810 -Awasa		<ul style="list-style-type: none"> -change route designator UA10 to UA 727 -“ UNL/FL 245 to read FL 660/FL245 outside HA(R) 1 and HA (R) 2 -change Jimma ATZ upper limit “2000 ALT“ to read “14500 ATL” -add ATS route W 15 AVONO/MANDERA and W890 TIKAT/MASLO/MANDERA (see ENR 6.1 and ENR 4.3) -change “UM651” upper limit “UNL to read “FL 660” -change UM665 to read UM651 (RNAV) -Add ATS route W885 DWA VOR DME/Hargeisa - Add ATS route W 15 AVONO/MANDERA and W890 TIKAT/MASLO/MANDERA (see ENR 6.1 and ENR 4.3)
2790-Dege habur		
2809-Goba-Robe		<ul style="list-style-type: none"> -change “UM665” to read “UM651 (RNAV)“ -change route „W870“to read „UR780“ -add ATS route W 15 AVONO/MANDERA and W890 TIKAT/MASLO/MANDERA (see ENR 6.1 and ENR 4.3)
2788 -Nekemte	100324N 0343424E 091730N 0342348E 080806N 0343424E	<ul style="list-style-type: none"> -Add UM220 (RNAV)SML to LW MAG 168°/348° with REP points -AXOTI -USUBA GM NDB -Add LOW/UPP limit of UM220 (RNAV) FL245 within Addis FIR -Change route designator UA10 to UA727 -Add ATS route W15 AVONO/MANDERA and W890 TIKAT/MASLO/MANDERA (See ENR 6.1 and ENR 4.3)

3.2.8 INDEX TO THE WORLD AERONAUTICAL CHARTS ICAO 1:1,000,000



3. AIR TRAFFIC SERVICES

1. Responsible authority

The Authority responsible for the overall administration of Air Traffic Service provided for International Civil Aviation within the Addis Ababa FIR is the Air Navigation Services Deputy Director General of the Civil Aviation Authority acting under the authority of the Director General.

Postal Address: Air Navigation
Services Deputy Director General
Ethiopian Civil Aviation Authority

P.O. Box 978
Addis Ababa, Ethiopia
Telephone Number: 251-011-66502 65
/251-011-665 02 00 /Ext 255
Tele fax Number: 251-011-665 02 81
AFTN Address: HAAAYAYX
E-mail Address:
caa.airnav@ethionet.et

2. Area of Responsibility

Air Traffic Services as Indicated in the following paragraphs, are provided for the territory of Ethiopia, including the territory of the Republic of Djibouti above FL245 as well as in the Airspace encompassed by the Addis Ababa FIR.

- 2.1 With the exception of certain Military Aerodromes, Air Traffic Services in Ethiopia provided by the Civil Aviation Authority under the guidance of Air traffic services directorate of the, Air Navigation Services Deputy Director General at CAA Head quarters.
- 2.2 At present Addis Ababa FIR comprise the Airspace of Ethiopian territory, and the Airspace above FL 245 over the territory of the Republic of Djibouti, as defined in ENR 2.
 - 2.2.1 Provision of air traffic services is the responsibility of Djibouti approach within Djibouti TMA at or below FL 245. Elsewhere, within Addis Ababa FIR excluding HA (R) -1 and HA (R) -2 below FL 290, provision of Area Control Service is the responsibility of Addis ACC/FIC.

3. Types of Services

3.1 The following types of services are provided.

Approach Control Services are provided by the respective Approach Control Units as specified in ENR 2 for:

- a) Arriving and Departing controlled flights; or
- b) En-route flights which are released by Addis ACC, while flying across the respective TMAs depending upon the relevant airspace classes.

Aerodrome Control Services are provided by Aerodrome Control TWRs specified in ENR 2 according to the relevant Airspace classes.

Air Traffic Control Service is exercised:

- a) within Airways (see ENR 3)
- b) Within UTA, TMA and in control zones at controlled aerodromes equipped with navigational aids (see ENR 2)
- c) At other controlled aerodromes where control zones are not established.

Flight Information Service, Alerting service within the FIR and *Area Control Service* along the airways beyond Asmara sector is provided by Addis Center.

The axis of each airway is constituted by line connecting significant points identified by radio navigation facilities and/or geographical points.

The Airspace within the Addis Ababa FIR, between FL 245 and FL 660 is designated as upper airspace and the airspace below FL 245 is designated as lower airspace.

Air Traffic Control, Flight Information and alerting service is provided by:

- a) Addis ACC along the airways including those parts of airways traversing terminal control areas of Djibouti above FL 245 with the exception of the airspace encompassed by Asmara Sector.
- b) The relevant aerodrome control tower and approach control units in coordination with Addis Center as necessary for arriving and departing aircraft

The description of the airspace designated for air traffic service purposes is found in several tables all forming part of ENR 3.

NOTE: Air Navigation facilities within the Addis Ababa FIR outside the territory of Ethiopia and certain facilities operated by Ethiopian Airlines Corp., (see AD2) are not the responsibility of the Civil Aviation Authority.

- 3.2 In general the air traffic rules and procedures enforce and the organization of the air traffic services is in conformity with ICAO Standards Recommended Practices and Procedures. Differences between the National and International rules and procedures are given in ENR 1 and 2, the regional supplementary procedures and altimeter setting procedures being reproduced in full with an indication where there is a difference.
- 3.3 Restricted Areas are established within the Ethiopian territory. These areas are shown in ENR 5. Extreme caution should be strictly adhered to, where such areas are adjacent to normal air traffic routes.

Activation of areas subject to periodical activities is notified well in advance by NOTAM, giving reference to the area by its identification.

3. Co-ordination between the Operator and ATS

- 4.1 Co-ordination between the Operator and Air Traffic Services in Ethiopia is effected in accordance with 2.14 of ICAO Annex 11 and 2.1.1.4 and 2.1.1.5 of Part VIII of the procedures for Air Navigation Services- Air Traffic Management (DOC 4444, PANS - RAC).
- 4.2 In accordance with Annex 2 and PANS-RAC the procedure for Repetitive Flight Plans (RPL), prescribed by the CAA ATS Authority, is detailed in PANS-RAC, Appendix 2. RPL may be submitted to the AIS Head quarter either by the Operator (or his designated representative) personally or to the address given in GEN 3.3-1.

4. Minimum Flight Altitudes

The minimum flight altitudes on the ATS Routes as listed in ENR 3 have been determined so as to ensure at least 300M (1000FT) vertical clearance above the highest obstacle within 10NM on each side of the center line of the route or 600M (2000FT) above the mountainous area. However, where angular divergence of the Navigational Aid Signal in combination with the distance between the Navigational Aids could result in the Aircraft being more than 5NM on either side of the center line the 10NM protection limit is increased by the extent to which the divergence is more than 5NM from the center line.

ATS units address list

Unit name	Postal address	Telephone NR	Telefax NR	e-mail	AFS address
1	2	3	4	5	6
Addis Ababa ACC	Air Traffic Service/ATS Addis Ababa Bole Airport P.O.Box 978 Addis Ababa	Tel- 251 11 665 0519 251 11 665 05 17	(251) 11 665 0515 (251) 11 665 0281	caa.airnav@ethionet.et caa.eats@ethionet.et	HAAAZQZX

GEN. 3.4 COMMUNICATION SERVICES**1. Responsible authority**

The authority responsible for the administration of communications services in Ethiopia is the Communication Navigation and Surveillance Directorate of the Civil Aviation Authority.

Postal Address: Communication Navigation and Surveillance Directorate Civil Aviation Authority
P.O. Box 978
Addis Ababa, Ethiopia
Telephone Number: 251-011-665 02
65/251-011-665 02 00Ext. 215
Tele fax Number: 251-011-665 02
81

AFTN Address: HAAAYAYX

E-mail Address:caa.airnav@ethionet.et

ICAO Standards, Recommended Practices and Procedures contained in the following documents are applied. No difference exists from ICAO regulatory material.

Annex 10 Aeronautical Telecommunications
DOC 7030 Part 3 Regional Supplementary Procedures (COM Procedures for AFI)
DOC 7910 Location Indicators
DOC 8400 ICAO Abbreviations and Codes
DOC8585 Designator for Aircraft Operating Agencies, Aeronautical Authorities and Services.

DOC 8259 the planning and engineering of the AFTN
DOC 8643 Aircraft Type Designators

2. Area of responsibility

Arrangements for such services on a continuing basis should be made with the, Communication Navigation and Surveillance Directorate.

Responsibility for the day-to-day operations of these services is vested in station communication officers located at Addis Ababa/Bole International Airport. Inquiries, suggestions or complaints regarding any telecommunication service should be referred to the Communication Navigation and Surveillance Directorate.

3. Types of Services**3.1 Radio Navigation Service**

The following types of radio aid to navigation are available:

LF & MW non-directional beacon (NDB)
Instrument landing system (ILS)
VHF Omni directional Radio Range (VOR) and (DVOR)
Distance-measuring equipment (DME)

3.2 Radio and satellite communication

- voice telephone communication:-Through NAFISAT
- Aeronautical VHF communication: 118.0 to 136 VHF band.
- HF Communication 5517,7595,11300 &13288 KHZ

Data communication AFTN services through NAFISAT

FIR communication system:-

Support by owned satellite system enroute VHF service

emergency, without informing the control radio station.

Fixed Service

Messages to be transmitted over the aeronautical fixed services are accepted only if they satisfy the requirements of:

- a) Annex 10 Vol II Chapter 3.3.3;
- b) Are prepared in the form specified in Annex 10;
- c) The text of an individual message does not exceed 200 groups;

General aircraft operating agency messages are only accepted for transmission to countries which have agreed to accept Class "B" traffic.

3.3 Mobile /fixed service

Mobile service

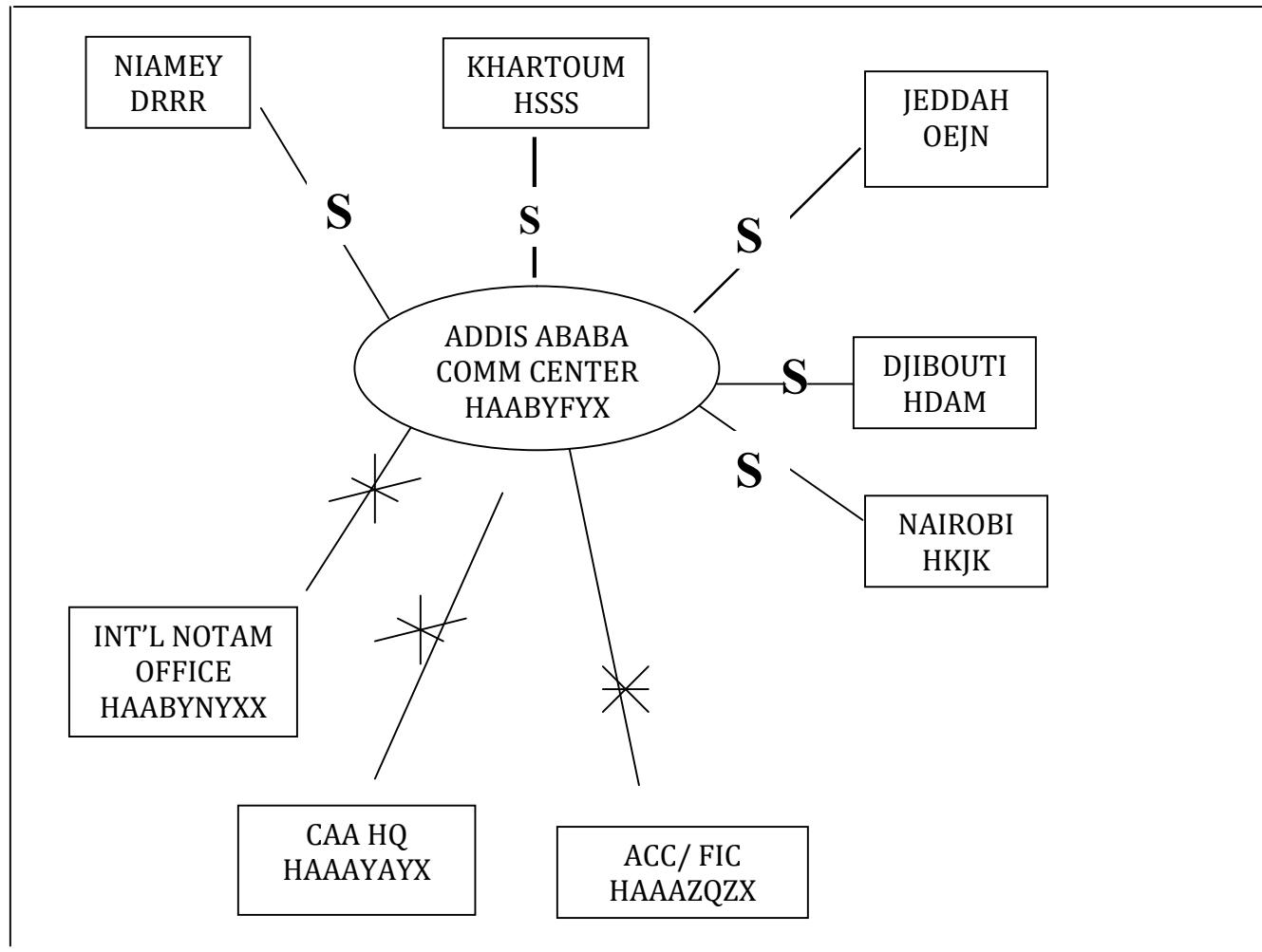
The aeronautical stations maintain continuous watch on their stated frequencies during the published hours of service unless otherwise notified. An aircraft should normally communicate with air-ground control radio station which exercises control in the area in which it is flying. Aircraft should maintain continuous watch on the appropriate frequency of the control station and should not abandon watch, except in an

3.4 Broadcasting Service

The following meteorological broadcasts are available for the use of aircraft in:

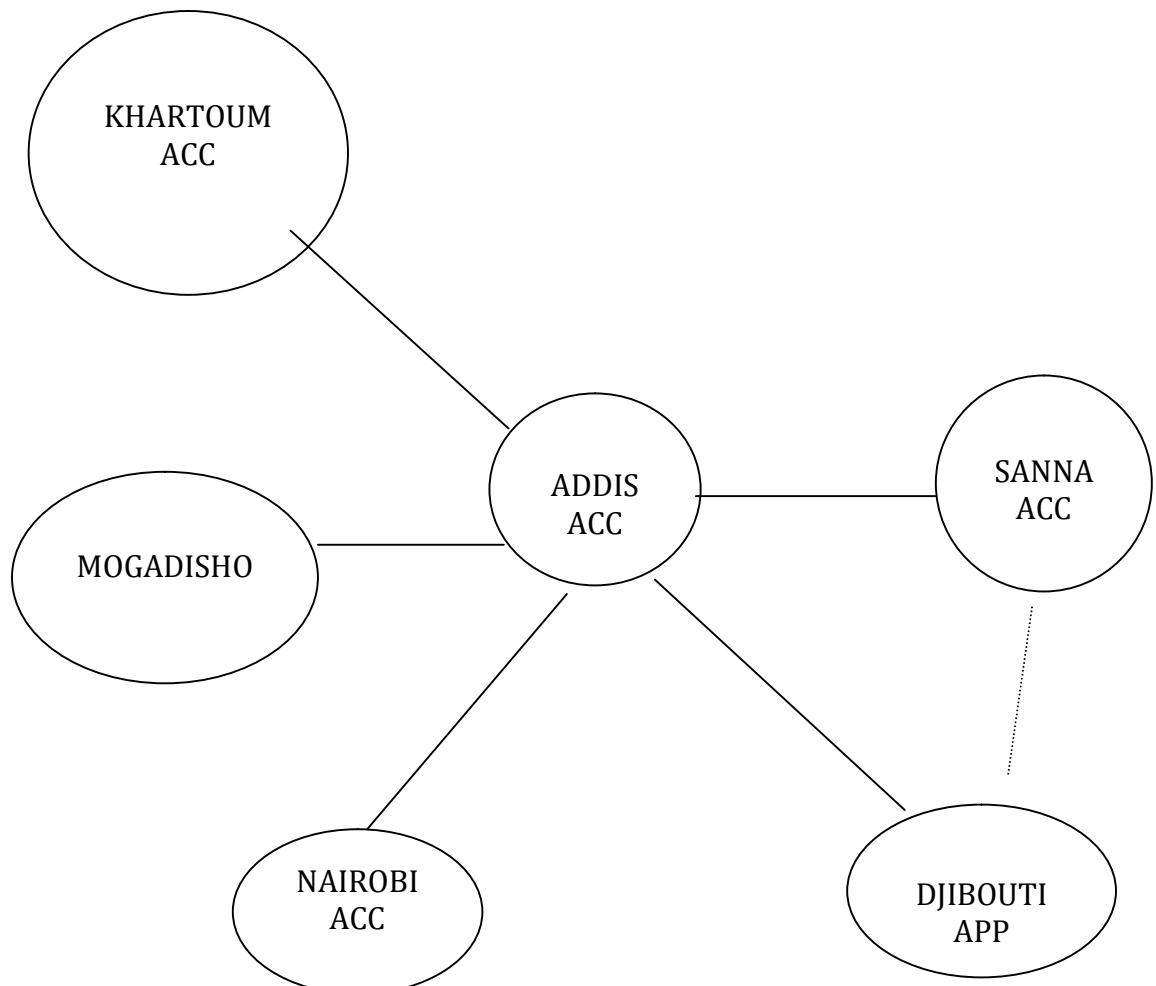
- a) SYNOPS, TEMPS, PILOTS AND TAFORS
- b) VHF RTF Meteorological information on request. Full details are given in GEN 3-5

3.5 Language used-English

AERONAUTICAL FIXED SERVICES: Data Com

LEGEND	
LANDLINE CIRCUIT	— X —
NAFISAT	S

AERONAUTICAL FIXED SERVICES: NAFISAT DIRECT SPEACH



GEN 3-5 Meteorological services**1. Responsible authority**

- 1.1 The National Meteorological Services Agency is responsible for the provision of the Meteorological Services for Civil Aviation in Ethiopia.

Postal Address:National Meteorological Services Agency
P.O.Box 1090
Addis Ababa, Ethiopia
Telephone Number:251 116 615779
Telefax Number:251-11-6625296
Telex Number: NIL
AFTN Address:HAABMYX
E.mail nmsa@ethionet.et

1.2 Applicable ICAO documents

The ICAO Standards, Recommended Practices and Procedures (SARPS and SUPPS) contained in the following documents are applied with the exceptions (differences) noted hereunder:

Annex 3 - Meteorological Service for International Air Navigation
Doc 7030- Regional Supplementary procedures part 1.

2. Area of responsibility

Addis Ababa Aerodrome Meteorological Office is designated as Meteorological Watch Office (MWO) for Addis Ababa Flight Information SIGMET and other guiding

material for aerodromes without Meteorological forecast offices in the Addis Ababa Flight Information Region.

3. Meteorological observations and reports:-
Refer page **GEN 3-5.2**.**4. Types of services provided**

Personal briefing and consultation for flight crew members and other aeronautical personnel are provided at Addis Ababa/Bole Aerodrome Meteorological office through the 24 hours. Flight documentation comprising significant weather charts, aerodrome forecasts, prognostic charts for upper air tabular forecasts of route conditions depending upon the destination and duration of the flight are provided at Addis Ababa/Bole International Airport. Pre-flight planning documentation is provided at Addis Ababa International Airport only.

5. Notification required from operators

Notification and information from operators in respect of meteorological consultation, flight documentation and other meteorological information is required in accordance with the provision of ICAO ANNEX 3, Paragraph 2-3.1 up to 2-3.4. Such notification should be received at least six hours before the expected time of departure.

3. METEOROLOGICAL OBSERVATIONS AND REPORTS

Name of station/location indicator	Type & frequency of observation AUTOM.EQ UIP.	Types of MET reports SUPPL.IN FO. including	Observation system &site(s)	Hours of ooperation	Climatological information AVBL
1	2	3	4	5	6
ADDIS ABAB/BOLE HAAB	Special OBS. Half Hourly OBS	METAR,S PESI TREND	Electrical cup anemometer located on roof of the old tower.Dijital wind display installed at aeronautical meteorological office and at new aerodrome control tower.conventional instrument is sited near fire fighter's office.Temperature mercury in glass thermometer.AWOS installed around the runway and the displays are set both in the meteorological office and at the new aerodrome control tower but need maintenance.	H 24	Nil
BAHIR DAR/Bahir dar HABD	Special OBS Hourly OBS,Half hourly OBS	METAR SPECI PL	Electrical cup anemometer located near the terminal building. Cloud base estimated. Temperature mercury in glass in the terminal building.conventional instrument is sited near the terminal building.temperature mercury in glass thermometer.AWOS instrument installed around the runway and the displays are both set in the meteorological office and in the aerodrome control tower.	0200-1500	Nil
DIRE DAWA Dire Dawa international HADR	Special Obs,Hourly, Half hourly	METAR SPECI PL	Electrical cup anemometer located on the roof of the Control TOWER.Cloud base estimated.conventional instrument is sited near the terminal building.Temperature mercury in glass thermometer in the terminal building.AWOS instrument installed around the runway and the displays are both set in the meteorological office and in the aerodrome.	H24	Nil

Name of station/location indicator	Type & frequency of observation AUTOM.EQUIP.	Types of MET reports SUPPL.INFO . including	Observation system &site(s)	Hours of operation	Climatological information AVBL
1	2	3	4	5	6
MEKELE/Mekelle Alula Aba Nega HAMK	Special OBS. Half Hourly OBS Hourly OBS	METAR,SPE SI PL	Conventional instrument is sited near terminal building office. Temperature mercury in glass thermometer in the terminal building.AWOS instrument installed around the runway and the displays are both set in the meteorological office and in the aerodrome control tower.	0300-1700	Nil
JIMMA/Jimma HAJM	Special OBS. Half Hourly OBS Hourly OBS	METAR,SPE SI PL	Electrical cup anemometer located on the roof of the Control TOWER. Cloud base estimated. Conventional instrument is sited near the terminal building. Temperature mercury in glass thermometer near the terminal building Digital wind displays are both set in the meteorological office and in the aerodrome control tower.	0300-1500	NIL
GONDAR/Gonder HAGN	Special OBS. Half Hourly OBS Hourly OBS	METAR SPECI PL	Conventional instrument is sited near the terminal building. Temperature mercury in glass thermometer near the terminal building.AWOS instrument installed around the runway and the displays are both set in the meteorological office and in the aerodrome control tower.	H24	Nil

6. Aircraft reports required from operators

In accordance with ICAO Annex 3 Para 5-3.1; Aircraft meteorological observations shall be made and recorded in AIREP forms in relation to ATS reporting points within the Addis Ababa Flight Information Region and should be transmitted in-flight as soon as possible. If not possible pilots are strongly reminded to deliver post-flight AIREPs to the MET office immediately on arrival.

Pilots should get advice of the ATS/MET reporting points along the whole route to be flown up to the next landing at MET and/or ATS briefing office prior to departure. The ATS/MET reporting points in respect of routes crossing the Addis Ababa FIR are indicated in ENR 3-1.

3-5.7 VOLMET serviceS

INTENTIONALLY

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3-5.8 SIGMET service

INTENTIONALLY

LEFT

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GEN 3-6 Search and rescue**1. Responsible Authority**

1.1 The Search and Rescue Service in Ethiopia is organized in accordance with the standards and recommended practices of ICAO Annex 12, by the Ethiopian Civil Aviation Authority, in close collaboration with different governmental organizations, which have willful obligation for making the necessary facilities and equipment available.

Postal Address: Air Navigation services
Deputy Director General Ethiopian Civil
Aviation Authority

P.O. Box 978

Addis Ababa, Ethiopia

Telephone Number: 251-011-6650265
251 011 665 02 00 /Ext 255

Tele fax Number: 251-011-665 02 81

AFTN Address: HAAAYAYX

E-mail

Address: caa.airnav@ethionet.et

1.2 Applicable ICAO documents
Annex 12 - Search and Rescue
Annex 13 - Aircraft Accident Inquiry
Annex 10 Volume 2 - Aeronautical
Telecommunications

DOC 7030 - Regional Supplementary procedures
for SAR applicable to AFI Region

DOC 8400 - ICAO Abbreviations and Codes
DOC 4444 - Air Traffic Management (ATM).

1.3 Differences from ICAO SARPS and
SUPPS
Differences from ICAO SARPS and
SUPPS are given in GEN 1-7.

2. Area of Responsibility

The Search and Rescue Service in Ethiopia is provided for all flights operating within the territory of the country including the airspace encompassed by the Addis Ababa Flight Information Region for Air Traffic Service purposes.

3. Types of services

Various elements of the state police organization, Armed forces and related mass organizations shall be available for Air, Sea area of water and Land Search and Rescue Mission.

Organization and availability of SAR Services together with scope of responsibility of the Organization in Ethiopia are outlined and published in SAR MANUAL Ethiopia.

4. SAR Agreements

SAR agreements exist today with Nairobi Sudan and Djibouti Civil Aviation Authorities, and National Search and rescue Coordinating committee members. States requests for the entry of aircraft equipment and personnel from other states to engage in search of an aircraft-in-distress or to rescue survivors of aircraft accidents, however, should be transmitted to Addis Ababa Rescue Coordination Center. Instructions as to the control which shall be exercised on entry of such aircraft and/or personnel will be given by the Rescue coordination center in accordance with Search and Rescue Manual-Ethiopia.

Lists of SAR Units during SAR Operation

No	National SAR Coordinating Committee Members.	Lists of SAR unit provided to SAR purpose	No	National SAR Coordinating Committee Members.	Lists of SAR unit provided to SAR purpose	Remark
1	Ethiopian Air Force	Helicopters -MI-8,MI-17	7	National airways	PC-12,Helicopter	
2	Ethiopian Airlines	Q400	8	Amibara General Aviation	DHC-2	
3	Trans Nation Airways	DHC-8	9	Suhura	AN-26	
4	Abyssinia Flight Service	C-208	10	Salini Construtori	C-208	
5	Aquarius	AC-6	11	Zemen Airways	C-208	
6	Joshua	AS-350				

5. Conditions of availability

5.1 ECAA has designated the search and rescue point of contact for the receipt of COSPAS-SARSAT distress data. Rescue coordination center

Name: Minwagaw Anley,Mitiku Hamza
Hailu
Addis Ababa RCC, ECAA
Ethiopian Civil Aviation Authority
P.O. Box 978
Addis Ababa, Ethiopia
Telephone Number: 251-011- 665 02
65/17/19
Tele fax Number: 251-011-665 02 81,
251-011-665 0515
AFTN Address:HAAAZQZX, HAABYFYX

E-mail Address:caa.airnav@ethionet.et
Search and Rescue REGION Addis Ababa FIR
The Addis Ababa COSPAS SARSAT point of

contact is at Addis Ababa Rescue coordination center.

Responsible Authority - Ethiopian Civil Aviation Authority

Name and Location of Rescue Sub Center (RSC): Dire Dawa

Remarks: Direct ATS speech circuit and telephone communication between Addis Ababa-Dire Dawa -Jimma-Debre Zeit-Bahir Dar- Mekele.

AIP ETHIOPIA

5.2 Rescue coordination center, Rescue sub-center, Alerting posts and Rescue Units

Name	Location	Facilities	Remarks
Addis Ababa RCC	08 58 30.1470 N 038 47 57.8387E	MRG SRG HEL-L HEL-H	Coordination by Addis FIC/ACC/RCC
Bahir Dar RSC	113622.91399N 037 19 11.02557E	MRG SRG HEL-L HEL-H	Coordination by Addis FIC/ACC/RCC
Dire Dawa RSC	09 3816.24090N 041 5055.9931E	MRG SRG HEL- L HEL-H	Coordination by Dire Addis FIC/ACC/RCC
Mekele RSC	132823.96300N 39 31 05.55915E	MRG SRG HEL-L HEL-H	Coordination by Addis FIC/ACC/RCC
Arbaminch Alerting Post	06 01 43. 512524N 037 55 02.4302E		Coordination by Addis FIC/ACC/RCC
Gode Alerting post Gambela Alerting Post	080702.25367N 0343348.09930E		Coordination by Addis FIC/ACC/RCC
Gode Alerting post	055606.4589N 0433442.8473E		Coordination by Addis FIC/ACC/RCC
Gonder Alerting post	123156.40650N 0372554.47219E		Coordination by Addis FIC/ACC/RCC
Jijiga Alerting Post	09210N 0424700E		Coordination by Addis FIC/ACC/RCC
Jimma Alerting Post	140813.44887N 0384633.79914E		Coordination by Addis FIC/ACC/RCC
Lalibela Alerting Post	115825.87865N 038528.01740E		Coordination by Addis FIC/ACC/RCC
Axum Alerting post	14081344887N 0384633.79914E		Coordination by Addis FIC/ACC/RCC
Asosa Alerting post	100119.01083N 03443.9354E		Coordination by Addis FIC/ACC/RCC

6. Procedures and/or signals employed by rescue aircraft**6.1 Procedures**

1.1 Procedures for pilots-in-command observing an accident or intercepting a distress call and/or message are as follows:

- a) When observing an accident:
 - i) Keep in sight the craft in distress until his presence is no longer required or he is unable to remain in the vicinity of the distress craft.
 - ii) Take such action as will facilitate determination of the position of the distress craft.
 - iii) Report to the RCC as much as possible the following:-
 - Type of craft in distress.
 - Its positioning geographical coordinates or in distance and bearing from distinctive land marks. Time of observation expressed in UTC.
 - Number of persons observed if any and their condition.
 - Act as instructed by the unit responsible for Search and Rescue.
- b) When intercepting a distress call and/or message.
 - i) Plot the position of the craft industries if given.

- ii) If possible take a bearing on the transmission.
 - iii) At captains' discretion proceed to the position given in the distress signal.
- iv) Report to the nearest RCC/RSC or Air Traffic Services Unit the message intercepted and action taken.

6.2 Communications

6.2.1 Transmission and reception of distress messages within the Addis Ababa FIR/ Search and Rescue Region(SRR) are handled in accordance with Chapter 5 para. 5.3 of Annex10 Volume II to the Convention on International Civil Aviation.

6.2.1.1 For communication during Search and Rescue Operation the codes and abbreviations published in ICAO "Abbreviations and Codes" (ICAO DOC 8400) are used.

6.2.1.2 Information concerning positions, call signs, frequencies and hours of operation of Ethiopian aeronautical stations are published in the ENR section of AIP-ETHIOPIA.

6.2.1.3 Aeronautical stations guard the international emergency frequency 121.5 MHZ.

3 ***Search and rescue signals***

The following **SAR** signals will be used.

Ground-air visual signal code for use by survivors

No	Message	Code symbol
1	Require assistance	V
2	Require medical assistance	X
3	No or Negative	N
4	Yes or Affirmative	Y
5	Proceeding in this direction	↑

Ground-air visual signal code for use by rescue units

No	Message	Code symbol
1	Operation completed	L L L
2	We have found all personnel	L L
3	We have found only some personnel	—
4	We are not able to continue returning to base	XX
5	Have divided into two groups. Each proceeding in direction indicated	↗ ↓
6	Information received that aircraft is in this direction	→ →
7	Nothing found. Will continue to search	NN

Air to ground signals

The following signals by aircraft mean that the ground signals have been understood:

- a) HJ - rocking the aircraft's wings
- b) HN - flashing on and off twice the aircraft's landing lights or, if not so equipped, by switching on and off twice its navigation lights.

Lack of the above signal indicates that the ground signal is not understood or received.

Instructions to be followed in the event of "Flight accident"

1. Pilots and all concerned are hereby required to adhere to the

following instructions in the event of "flight accident" in Ethiopia.

2 Notification

All accidents which take place between the time any person boards the aircraft with the intention of flight and the time all such persons have disembarked and which results in:

- a) Injuries to any person, fatal or otherwise;
- b) Fire or suspect of fire in the aircraft
- c) Substantial damage in the aircraft
- d) Any damage to other property

6.4.3 Notification of accidents

6.4.3.1 Captains of aircraft involved in such accidents as described in SAR Agreement, or the person they delegate, shall immediately notify the case to the nearest air traffic services unit as well as to the Civil Aviation Authority, headquarters.

6.4.3.1.1 The said notification if required notwithstanding any previous notification which might have been sent prior to the accident.

6.4.3.1.2 The required notification shall be effected by the quickest available means of telecommunication or transport and shall include:

- a) Nationality and registration mark of the aircraft;
- b) Place of accident;
- c) Date and time of the accident;
- d) Number of persons on board;
- e) Nature of the accident and extent of damage if any;
- f) Name of persons killed or injured, if any;
- g) Name of aircraft owner;
- h) Name of the aircraft captain;

6.4.4 Post notification

6.4.4.1 The aircraft shall not be touched or any parts removed before investigation into the cause of the accident takes place by the

appropriate authorities except when it is deemed necessary for the rescue of human life or property.

6.4.4.1.1

The aircraft's captain shall take every possible measure to prevent any persons from fouling with the aircraft, its wreckage, and traces of the accident or any parts thereof.

6.4.4.1.2

Unless he is forced to do otherwise, the captain of the aircraft shall not leave the scene of the accident without guard of duly authorized person.

6.4.4.1.3

The captain of the aircraft shall, as soon as possible, file with the nearest Aerodrome Manager a comprehensive report about the accident factual and relevant details, however, in case an accident occurs at an aerodrome, flight crew are required not to leave the aerodrome, before submitting such a report.

6.4.5 Removal of the aircraft

6.4.5.1 The aircraft, its wreckage or debris shall not be removed without the permission of the appropriate Authority of the Civil Aviation.

GEN 4. CHARGES FOR AERODROMES AND AIR NAVIGATION SERVICES

GEN 4-1 Aerodrome charges

The charges set out here under are applicable to all civil aerodromes,

administered by the Ethiopian Airports Enterprise in Ethiopia.

1. Landing charges

The landing charges are based on the maximum all-up weight of the aircraft specified in the certificate of Air worthiness, class of aerodrome and number of flights per week

Aircraft weight (Lbs)	Landing charges	Volume Discount
A. Asphalt surface Airports		
Up to 5000	USD 5.86	
5001 up to 40,000	USD 1.75 per 1000 lbs or Part thereof	20% discount for more than Flights per week
40,001 and above	USD 2.64 per 1000 Lbs or Part thereof	10 % discount for the number of Flights b/n 25-50 per week
B. Gravel surfaced Airports		
Up to 5000	USD 2.93	
5001 up to 40,000	USD.0.88 per 100	
40,001and above	0 Lbs or Part thereof	

Currently asphalt surfaced class I aerodromes are Addis Ababa, Bahirdar, Dire Dawa Arba Minch, Assosa, Mekele, Lalibela, Axum, Gonder, Jijiga Jimma Gambella, Humera and Gode airports.
Currently gravel surfaced class II Aerodromes, Robe (Goba) airport.

Payment of charges

Landing charges should be paid at the time of using the airport or in

case of regular flight, monthly on an accrual basis.

1.1 Lighting facility charges

The lighting facility charges at aerodromes are based on the maximum all-up weight of the aircraft specified in the certificate of airworthiness and number of flights per week.

Aircraft weight (Lbs)	Lighting charges	Volume discount
<i>Up to 5000</i>	<i>USD 4.88</i>	<i>50% discount for more than 50 flights per week</i>
<i>5001-40,000</i>	<i>USD 1.46 per 1000 Lbs or part thereof</i>	<i>20% discount for the number flight b/n 30-50 per week</i>
<i>40001 and above</i>	<i>USD 2.2 per 1000 Lbs or part thereof</i>	<i>10% discount to the number flights b/n 15-30 per week</i>

The lighting facility charges at aerodromes will be assessed for each landing or take-off made at night or in conditions of poor visibility when lighting may be used except where the take-off is within one hour of landing in which case the total charges for both movements will be only 50%. In any case, if lighting facility is provided for more than one hour, 100% of the charge should be paid. At any rate lighting charges for one hour or part thereof shall not be less than USD 48.78.

2. Parking, Handling and long-term storage of aircraft

2.1 Parking charges

Parking charges are assessed on the basis of the space occupied by the aircraft (I.e. Wing span x Length).

Aircraft will be charged with parking rates of USD 0.0012 per square foot or part thereof calculated to the nearest cent.

The first three hours after each landing shall be free from parking charges and thereafter the fees for parking shall be payable in respect of each aircraft for each period of 24 hours or part thereof.

Payment of charges

- In the case of aircraft without a permanent agent in Ethiopia, parking charges levied at daily rates are payable before departure.
- When prior arrangement is made, the monthly rates for parking will be the daily rate times 22.
- Parking charges are payable at the end of each calendar month in respect of charges accruing in the month.

2.2 Hangarage and long-term storage of aircraft charges

The assessment of hangar charges is based on the type of aircraft and area occupied.

Rentals

Hangars are available at Addis Ababa by arrangement with Ethiopian Airlines and the charge for the storage of aircraft in hangars is shown below. However, the charges are subject to changes from time to time.

<i>Aircraft</i>	<i>Charges in Birr</i>
A) Piper - 18 Class.....	75.00 per month
Cessna 180-185.....	25.00 per month
Apache-Light Twin Class.....	100.00 per month
Aero Commander-Light Twin Class.....	150.00 " "
C-47 Heavy Twin Class.....	750.00 " "
B) B767, 707, 757, 727, 737, VC-10 & Similar Aircraft.....	20.00 per hour
DC-6B, DC-4 & Similar Aircraft.....	12.00 per hour
DC-3/C-47 & Similar Aircraft.....	7.50 per hour

3. Passenger service

International Passengers:-

- a) USD 30 shall be collected from foreign nationality and the equivalent in birr at the prevailing exchange rate from Ethiopian nationals.
- b) USD 2.5 shall be collected from transit passengers whose stay is between 24-48 hrs.
- c) Free for direct transit passengers and for those transit passengers whose stay is less than 24 hrs

Domestic Passengers:-

Passengers embarking from any domestic airport disembarking at any domestic airport within Ethiopia shall pay Birr 30.00.

Payment of charges

It is the responsibility of the pertinent operator to collect on behalf of Ethiopian Airports

Enterprise, passenger service charge with ticket, at the time ticket sell for both international and domestic passengers and promptly transfer same to the EAE within two weeks upon receipt of invoice.

Handling over of passenger manifests

All duly signed and stamped passenger manifests of incoming and outgoing flights shall be handed to the Ethiopian Airports Enterprise (Airport finance office) in two copies at the end of every day or the next working day for all flights.

Passenger manifests of international flights submitted to Ethiopian Airports Enterprise by an operator will not serve for raising invoices but will be used for statistical and cross- checking the number of originating and transit passengers submitted by an operator.

- 4. **Sur charge.....NIL**
- 5. **Security charge.....NIL**
- 6. **Noise-related items charge....NIL**
- 7. ***Other charges***

7.1 *Terminal facility charges*

- a) A charge of USD 85.37 shall be paid by all international flights for a single use of terminal facilities including the boarding bridge.

b) A charge of USD 42.69 shall be paid by all international flights that use a remote parking without using any terminal facility.

c) A charge of USD 17.07 shall be paid by all domestic flights that use a remote parking without using any terminal facility.

A single use of terminal facilities, the consecutive loading and unloading period, should not exceed two hours.

6.3 Handling charges

Handling charges are assessed on the basis of maximum all-up-weight of the aircraft and are shown below. These charges are applied at Addis Ababa and Dire Dawa International Airports.

No	Take-off weight ranges From To	(i) Day Transit		(ii) Turnround		(iii) Casual Operators Turn round Charge	
		Passenger USD	All Cargo USD			Type of Aircraft	
1	- 10,000	i) 115 ii) 137 iii) 258	273 284 426			IL-14, LR35, DHC-6	
2	10,001 - 15,000	i) 171 ii) 215 iii) 282	412 509 763			ND262, HS125, DA20 ,FALCON DHC-4, DC-3, CARIBOR HS-125	
3	15,001 - 25,000	i) 285 ii) 357 iii) 535	686 854 1,281			FKF, DHC5, F27, HS748, DHC7, ND25, C131, AN26, AN24, AN30, LI329, YAK40, DHC-8, ATR42,	
4	25,001 - 35,000	i) 398 ii) 499 iii) 772	957 1,199 1,798			F28, Viscount 701 (VC7) 62, AN32	
5	35,001 - 50,000	i) 571 ii) 714 iii) 1,070	1,369 1,714 2,571			TU-134, DC6, BAC111	
6	50,001 - 75,000	i) 929 ii) 1,161 iii) 1,741	2,496 3,119 4,679			B737, DC-9, IL18, BR31, HS Trident 2E, 3B, Supper 3B, L382, AN12, BE210, L100 (C-130)	
7	75,001 - 100,000	i) 1,141 ii) 1,424 iii) 2,136	2,985 3,727 5,591			B727, TU-154, CL-44	
8	100,001 - 135,000	i) 1,542 ii) 927 iii) 2,890	3,701 4,623 6,934			B720, B757	
9	135,001 - 155000	i) 1,773 ii) 2,212 iii) 3,319	4,265 8,000 12,000			B707, AB3, Super VC-10 (VC-15) FB-HSB, N-O-S, SU-FB,SC-SY, DC8/62/63,LCA, LCB, FB, CD, CE, FBL,CC-CF,CG-CH-CI,CK,CL	
10	155,001 - 200,000	i) 2,284 ii) 2,854 iii) 3,902	5,481 8,000 12,000			IL-62 TU-144 IL-76 DC-8/73, L1001-1, A310, B767, DC-8/71/72/73C/F	
11	200,001 - 250,000	i) 2,854 ii) 3,566 iii) 5,350	6,852 8,564 12,846			L1011-50 & 100, IL-86 (206000/350seats)	
12	250,001 - 300,000	i) 3,426 ii) 4,282 iii) 6,424	7472 10,277 15,415			DC-10, AN-22	
13	300,001 - 400,000	i) 4,568 ii) 5,707 iii) 8,560	10,961 13,702 20,553			B747	

Note: There are various aircraft which are not shown. However such aircraft may be charged according to their licensed maximum take-off-weight or number of seats whichever is higher.

If the casual operating aircraft is on transit, the turn round charge (ii) for a contracted flight applies based on the type of aircraft and configurations.

7 Exemptions/Reductions

Exemptions

The following aircraft are exempted from the payment of landing, parking light and terminal facility charges.

- a) Ethiopian State Aircraft (Police army and Air force)
- b) Aircraft owned by the UN
- c) Aircraft carrying Head of State and owned by the state on a state visit, on a reciprocal basis.
- d) Aircraft which after take-off returns to the airport for technical failure
- e) Aircraft engaged in search and rescue operations.
- f) Others by arrangement with Ethiopian Airports Enterprise.

The following persons are exempted from paying passenger service charges:

- a) Crew members of the aircraft involved in the particular operation
- b) Children under 2 years of age

- c) Passengers on board of an aircraft which is exempted from landing charge.

Reduction

The following reduction is made on landing charges:

- a) 50% for helicopters
- b) 20% for training, test flights and touch-and-go landings.

8. Method of payment

8.1 All charges for use of an aerodrome is payable to the Ethiopian Airports Enterprise by the pilot of the aircraft before the aircraft departs. With regard to regular operators it shall be governed by the bilateral air service agreement or any agreement that will be concluded between EAE and the operator.

8.2 No reduction of charges will be allowed by reason of the unavailability of any aerodrome services, assistance or other facilities.

GEN 4-2 Air Navigation facility charges

1. Route facility charges specified in table I and II below shall be levied against all aircraft

2. Table 1. Route facility charges for international flights unit value USD 16.24

	<i>Coef</i>	Up to 200	201/400	401/1000	above 1000	<i>Distance (NM)</i>
10,000- 50,000	1.0	1.0	2.0	3.5	5	
50001- 120,000	2.0	2.0	4.0	7.0	10	
120,001- 300,000	2.5	2.5	5.0	8.75	12.5	
300,001 and over	3.0	3.0	6.0	10.5	15	
<i>Weight in lbs.</i>						

2.1 Aircraft on an international flight and weighting less than 10,000 lbs. will be charged USD 7.51 per flight.

2.2 Rules

- 1) The flight distances are great circle distances and not airway or advisory route distances.
- 2) An aircraft crossing the Addis Ababa FIR border more than once during the course of the same flight should be counted as one flight.
e.g. Aden/Addis /Nairobi

3) An aircraft landing at a location within the Addis Ababa FIR and resuming its flight after a normal stop at an intermediate point should be counted as one flight. But if the aircraft proceeds to a destination after remaining on ground for more than 24 hours for reasons other than technical, the flight will be counted as a new flight.
e.g. Khartoum/Addis Ababa/Nairobi as one flight
Khartoum/Addis Ababa after a 24 hours stop then to Nairobi as two flights.

3 Table II. Route facility charges for flights operating within the territorial limits of Ethiopia.

<i>Weight of aircraft</i>	<i>Charges USD</i>
Up to 5000 lbs	2.49
5001 lbs. up to 50,000 lbs	10.78
50,001 lbs. up to 120,000 lbs	35.90
120,001 lbs. up to 300,000 lbs	93.32
300,001 lbs. and over	143.56

3.1 Rules

Aircraft operating within the territorial limits of Ethiopia will be charged on a daily basis (0001-2400 UTC), irrespective of the distance flown and the number of flights made.

4 Exemptions

4.1 The following flights are exempted from payment of navigation charges:

- A) All aircraft exempted from landing and parking charges
- B) Others by arrangement with Ethiopian Civil Aviation Authority.

5 Method of payment

5.1 Route navigation charges will be payable by the owner or operator of the aircraft on demand at the end of each calendar month in respect of each flight.

5.2 Owners or operators should settle their charges at the CAA headquarters finance service or could send to CAA, Account Number 017294005100, Swift code CBETETAAXXX Commercial Bank of Ethiopia, Airport Branch, and Addis Ababa specifying the purpose of payment.

5.3 All charges for the North East Africa and Indian Ocean Satellite Network (NAFISAT) attributable to Ethiopia will be billed and collected by the International Air Transport Association (IATA) on behalf of Air Traffic and Navigation Services (ATNS) company Ltd. of South Africa ,which has been designated the agent of south Africa with respect to the VSAT network at the following address.

International Air Transport Association (IATA),
Route Del' Aero port 33,
P.O.Box 146, CH-1215 Geneva 15 Airport,
Switzerland
Facsimile +41 (22) 799-2678
AFTN: LSGGIATA
SITA: GVALDXB
Telex: 415586

The charge per FIR crossing in NAFISAT equipped states airspace will be 10 U.S.D.

PART TWO

EN – RUOTE [ENR]

PART 2 - EN-OUTE (ENR)**ENR 0**

ENR 0.1	Preface	Not applicable
ENR 0.2	Record of AIP amendments	Not applicable
ENR 0.3	Record of AIP supplements	Not applicable
ENR 0.4	Checklist of AIP pages	Not applicable
ENR 0.5	List of hand amendments	Not applicable

ENR 0.6 Table of contents to part 2

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ENR 1.2 Visual flight rules.....	ENR 1.2-1
ENR 1.3 Instrument flight rules.....	ENR 1.3-1
ENR 1.4 ATS airspace classification.....	ENR 1.4-1
ENR 1.5 Holding, approach and departure procedures.....	ENR 1.5-1
ENR 1.5-1 General.....	ENR 1.5-1
ENR 1.5-2 Arriving and overflying aircraft.....	ENR 1.5-1
ENR 1.5-3 Departing flights.....	ENR 1.5-1
ENR 1.6 Radar services and procedures	ENR 1.6.1
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ENR 1.7 Altimeter setting procedures.....	ENR 1.7-1
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ENR 1.9 Air traffic flow management.....	Not applicable
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ENR 5.3	Other activities of a dangerous nature	Not Applicable
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ENR 5.6	Bird migration and areas with sensitive fauna.....	5-6-1
ENR 6	ENROUTE CHARTS	
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ENR 6.2	Prohibited, Restricted and Danger area-Index chart	ENR 6.2
ENR 6.3	Radio facility-Index chart	ENR 6.3

AIP ETHIOPIA

ENR 1.1 General rules and procedures

1. Applicable rules and procedures

The air traffic rules and procedures applicable to air traffic in the Ethiopian territory conform with Annexes 2 and 11 to the convention on International Civil Aviation and to those portions applicable to aircraft on the procedures for Air Navigation Services-Rules of the Air and Air Traffic services, and the Regional Supplementary Procedures applicable to the AFI Region, except in the cases indicated in GEN 1-7 All differences have been registered with the International Civil Aviation Organization(ICAO).

2. Separation of aircraft

2.1 General Provisions for Separation Controlled Traffic

2.1.1 Vertical or horizontal separation shall be provided:

- a) between all flights in Class A airspaces;
- b) between IFR flights in Class C,D and E airspaces;
- c) between IFR flights and VFR flights in Class C airspace;
- d) between IFR flights and special VFR flights; and
- e) between special VFR flights, except, for the cases under a),b),and c) above during the hours of daylight when flights have been cleared to climb or descend subject to maintaining own separation and

remaining in visual meteorological conditions.

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

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

2. The Vertical Separation Minimum

2.2.1 The Reduced Vertical Separation Minimum (RVSM) implemented within Addis FIR between FL290 and 410, and as such the Separation Minimum will be 300mts (1000ft) in this particular RVSM airspace.

2.2.2 Vertical Separation during ascent or descent.

2.2.2.1 Pilots in direct communication with each other may, with their concurrence, be cleared to maintain a specified vertical separation between their aircraft during ascent or descent.

2.3 Horizontal separation

2.3.1 Lateral Separation of aircraft at the same level is obtained by requiring operation on different routes or in different geographical locations as determined by visual observation, by use of navigation aids or by use of area navigation equipment.

2.3.2 Lateral separation may be achieved by means of the following

2.3.2.1 Geographical separation, i.e separation positively indicated by position reports over different geographical locations as determined visually or by reference to a navigation aid.

2.3.2.2 Track separation between aircraft using the same navigation aid or method.

2.3.2.2.1 **VOR and Co-located DME**:- Separation is deemed to exist when:

a) **Two outbound aircraft**: - both aircraft have reported established on radials which are separated by a minimum of 20 degrees and one aircraft is at least 20NM from the VOR/DME.

b) **One inbound and one outbound aircraft**:-both aircraft have reported established on radials which are separated by a minimum of

20 degrees and the inbound aircraft is at least 30nm or the outbound aircraft is at least 20NM from the facility.

c) **Two inbound aircraft**:- both aircraft have reported established on radials which are separated by a minimum of 20 degrees and one aircraft is at least 30NM from the VOR/DME.

2.3.2.2.2 **VOR**: Separation is deemed to exist when:

a) **Two outbound aircraft**:- both aircraft have reported established on radials which are separated by a minimum of 20 degrees and one aircraft is time equivalent of 20nm or 6 minutes whichever is greater from the facility.

b) **Two outbound aircraft**:- both aircraft must have passed a VOR & reported established on radials which diverge by a minimum of 45 degrees or more.

c) **One inbound and one outbound aircraft**:-both aircraft have reported established on radials which are separated by a minimum of 20 degrees and the outbound aircraft is at least 30NM or 9 minutes whichever is greater.

2.3.2.2.3. NDB: Separation is deemed to exist when:

Two outbound aircraft - both aircraft have reported established on specified tracks from the NDB diverging by 30 degrees or more and One is at least 20nm or 6 minutes (whichever is the greater) from the NDB.

2.3.2.2.4 Dead Reckoning (DR): Separation is deemed to exist when: Tracks diverging by at least 45 degrees and at a distance of 20nm (37km) or more or 9 minutes whichever is the greater from the point of intersection of the tracks. This point being determined either visually or by reference to a navigational aid.

2.3.3 *Longitudinal separation*

2.3.3.1 Longitudinal Separation shall be established by requiring aircraft to depart at specified time, to lose time to arrive over a geographical location at a specified time or to hold over a geographical location until specified time.

2.3.3.2 10 minutes longitudinal time separation is applied between aircraft at the same level on the same track:

1. 10 minutes within Addis UTA , along the airways and ATS routes.

2. Between Addis FIR and:

- a) Jeddah FIR - 10 minutes
- b) Yemen FIR - 10 minutes
- c) Nairobi FIR - 10 minutes
- d) Mogadishu FIR - 10 minutes
- e) Khartoum FIR - 10 minutes
- g) Djibouti APP- 10 Minutes

Note: *In all other cases the separation minima shall be as prescribed in PANS-RAC (ICAO DOC 4444-RAC 501/12) part III.*

ENR 1.2 Visual Flight Rules (VFR)

1. VFR flights shall be conducted within the Addis Ababa FIR in accordance with the following conditions:
 - 1.1 VFR flights are subject to general flight rules, as specified in ICAO Annex 2 Chapter 4.
 - 1.2 VFR flights shall comply with the provision of Air Traffic Control Service:
 - a) when operated within Classes C and D airspace;
 - b) When forming part of aerodrome traffic at controlled aerodromes; or
 - c) When operated as special VFR flights.
 - 1.3 VFR flights shall not be operated:
 - a) between sunset & sunrise
 - b) above FL 145;
 - c) at transonic and supersonic speeds.
 - 1.4 Except when necessary for take-off or landing, except by permission from the ATS units VFR flights shall not be flown:
 - a) Over congested areas of cities, towns or settlements or over an open-air assembly of persons at a height less than 1000 FT. (300M) above the highest obstacle within a radius of 60M from the aircraft.
 - b) Elsewhere than specified in 1.1.4 (a) , above at a height less than 500 FT. (150M) above the ground or water.

2. Controlled Airspace

- 2.1 An aircraft may be operated under VFR provided it maintains a horizontal distance of at least 1.5 KM and a vertical distance of 1000 FT. (300M) from cloud and has flight visibility of:
 - a) 8 KM at or above 10000 ft. (3050m) AMSL; or
 - b) 5 KM below 10000 ft. (3050m) AMSL.
- 2.1.1 Except when a clearance is obtained from an air traffic control unit, VFR flights shall neither take-off nor land at an aerodrome within a Control Zone or the traffic pattern of such aerodrome if the ground visibility is less than 5KM or the ceiling is less than 1500FT. (450 M).

3. Outside controlled Airspace

3.1 A flight may be conducted in accordance with VFR.

- a) at and below 3000 FT. (900M) AMSL or 1000 FT. (300 M) above terrain which ever is higher provided that it remains clear of cloud and in sight of the ground or water and flight visibility of not less than 5 KM.
- b) above 3000 FT. (900 M) AMSL or above 1000 FT. (300 M) above terrain, which ever is higher provided that the condition in ENR 1.2.1 is not met.

Note: *Helicopters may operate with a flight visibility below 1500m. if maneuvered at a speed that will give adequate opportunity to observe other traffic or any obstruction in time to avoid collision.*

4. Changes from VFR flight to IFR flight

4.1 When an aircraft operated in accordance with visual flight rules desires to change to compliance with the instrument flight rules shall:

- a) If flight plan was submitted, communicate the necessary changes to be effected to its current flight plan;
- b) Submit a flight plan to the appropriate air traffic service unit and obtain a clearance prior to operating under IFR in controlled airspace.

5. Visual approach

An IFR flight may be cleared to execute visual approach if so requested by the pilot and traffic situation permits.

- 5.1 Clearance to execute visual approach may be granted, provided the pilot has the aerodrome in-sight and can maintain visual reference to the terrain and,
 - a) The reported ceiling is not below the initial approach level for the aircraft so cleared; or
 - b) The Pilot reports at the initial approach level or at any time during instrument approach procedure that the meteorological conditions will permit a visual approach and has a reasonable assurance that landing can be completed.
- 5.2 Separation shall be provided between an aircraft cleared to execute a visual approach and other arriving and departing aircraft.

6. SPECIAL VFR.

- 6.1 If the weather condition is below the minimum required for VFR operation or at night in a control zone and when traffic permits, special VFR operation may be conducted subject to prior authorization by the unit providing approach control service. Such operations shall in no case hinder or obstruct genuine IFR flight operations.
- 6.2 In a control zone, when the observed cloud is more than 4 OKTAS below 1500FT. (450 M), or the visibility is less than 5 KM., Instrument Flight Rules shall be enforce.
- 6.3 Special VFR flight is intended to provide flexibility for pilots who are unable to comply with instrument flight rules. However, such operations are subject to the general rules and shall be conducted only when ATC clearance is obtained from approach control office upon request from the pilot.
- 6.3. When the ground visibility is not less than 1500M and/or the ceiling is less than 500 FT. (150 M) special VFR flights may be permitted:
- a) Either to enter a control zone for the purpose of landing or take-off and depart from a control zone;
 - b) To operate locally within a control zone provided:
 - i) The aircraft is equipped with serviceable radio and appropriate facility;
 - ii) the pilot supervising the training or conducting the test flight shall be instrument rated except that for aerodrome TFC circuit or cross country flight the instructor shall be satisfied that the student pilot is competent to fly in accordance with the required conditions,
 - iii) The visibility enables the aerodrome controller to keep the flight insight,
 - iv) The landing area is continuously visible to the pilot in-command of the aircraft,

- v) Adequate arrangements have been made for the termination of the flight.

However, if instrument approach is in progress such operations shall not be allowed in the vicinity of an aerodrome.

- 6.4 Standard separation shall be effected between special VFR flights & IFR flights except in the vicinity of an aerodrome, reduced separation may be provided:
- a) When the aircraft is continuously visible to the controller;
 - b) each aircraft is continuously visible to the pilot-in-command of the other aircraft concerned, and the pilots thereof report that they can maintain their own separation; or
 - c) in the case of one aircraft following another, the pilot-in-command of the succeeding aircraft reports that he has the other aircraft in sight and can maintain separation.

6.4.1 Special VFR flights shall maintain a minimum clearance of 500 FT. (150 M) above terrain within 8 km of the prescribed track. However, it is the responsibility of the pilot to remain clear of cloud and in-sight of ground or water.

6.4.2 Whilst operating in a control zone, a special VFR flight:

- a) shall maintain two-way radio communication with ATSU, except within class E airspace, this may be waived at the discretion of the controller if adequate arrangements have been made for the termination of the flight;
- b) The pilot must have instrument rated license, except when training for a night rating in aerodrome TFC circuits, or cross country flights.

7. FLIGHT AT NIGHT.

7.1 Special VFR flight may be permitted at night by approach control within a control zone at aerodromes where appropriate lighting facilities are installed, provided:

- a) The pilot supervising training or conducting a test flight is instrument rated or the instructor is satisfied with the competency of the student pilot to fly according to the requirement;
- b) The aircraft is equipped with serviceable radio and appropriate facility; and

c) Flight plan is filed and air traffic clearance obtained.

8. VMCLIMB OR DESCENT

8.1 In Addis Ababa FIR, clearance to climb or descend subject to maintaining own separation and remaining in visual meteorological conditions may be granted to controlled flights operated in visual meteorological conditions between sun rise and sun set within airspace classes A, C, D and E when so requested by the aircraft.

8.2 When controlled flights are cleared to climb or descend subject to maintaining own separation and remaining in visual meteorological conditions, the provision of vertical or horizontal separation by an air traffic control unit is not applicable. It is for the flight so cleared to ensure, for the duration of the clearance, that it is not operated in such proximity to other flights as to create a collision hazard and maintain its own terrain clearance.

8.2.1 Essential traffic information shall be provided to controlled flights if the separation with other controlled flights is less than the laid down minima.

Note 1: ATC is required to provide separation between IFR and VFR flights in class C airspace. ATC is not required to provide separation between VFR flights. Therefore, IFR or VFR flights may constitute essential traffic to IFR traffic, and IFR flights may constitute essential traffic to VFR traffic. However, a VFR flight would not constitute essential traffic to other VFR flights.

- 8.3 When a VFR flight in airspace class C is cleared to fly subject to maintaining own separation and remaining in visual meteorological conditions the clearance signifies, for the duration of the clearance, the provision of separation by ATC is not entailed. If the pilot of the VFR flight, on observing that conditions are deteriorating and considering that operation in VMC may not be possible, shall request clearance to proceed under IFR or remain outside controlled airspace unless he has obtained permission from ATC under specially arranged procedure to operate as a special VFR flight.
- 8.4 VMC climb or descent clearance shall not be granted to controlled flights on reciprocal or crossing tracks in respect of other controlled flights unless ATC is reasonably sure that the aircraft have passed each other or both aircraft concurred with the clearance and reported to have observed their relative positions.
- 8.5 Aircraft flying in the same direction may be cleared to climb or descend subject to maintaining own separation and remaining in visual meteorological condition if the pilot of the succeeding aircraft reports he has the preceding aircraft is in-sight and can maintain continuous visual contact.
- 8.6 clearance to climb or descend subject to maintaining own separation and remaining in visual meteorological condition may be granted:
- 1) Enroute: when so requested by an aircraft, Addis centre may clear a

controlled flight operated in visual meteorological conditions from sun rise to sun set to fly subject to maintaining own separation and remaining in visual meteorological conditions.

When a controlled flight is so cleared the following shall apply:

a) The clearance shall be for a specified portion of the flight during climb or descent and subject to further restrictions;

Note 2: VMC climb or descent restrictions may be effected due to:

(i) meteorological conditions that may be encountered during the term of the clearance which may be below the VMC minima;

(ii) Traffic density that makes such clearance impracticable. For the case of traffic density precluding smooth flow of aircraft movement, the granting of VMC descent or climb is left to the rational judgment of the ATCU concerned.

b) If there is a possibility that flight under visual meteorological conditions may become impracticable, an IFR flight shall be provided with alternative instructions to be complied with in the event that flight in VMC cannot be maintained for the term of the clearance;

c) The pilot of an IFR flight, on observing that conditions are deteriorating and considering that operation in VMC will become impossible shall inform ATC before entering IMC and shall proceed in accordance with the alternative instructions given.

Note 3: When an IFR flight is so cleared ATC shall always plan for an alternate clearance bearing in mind that the flight has not cancelled its IFR flight plan.

2) **Departing aircraft:** When requested by an aircraft, a departing aircraft may be cleared to climb subject to maintaining own separation and remaining in visual meteorological conditions until a specified time or to a specified location if reports indicate that this is possible.

3) **Arriving aircraft:** when requested by an aircraft an arriving aircraft may be cleared to descend subject to maintaining own separation and remaining in visual meteorological conditions if reports indicate that this is possible.

ENR 1-3 INSTRUMENT FLIGHT RULES

1. Aircraft shall be flown in accordance with the Instrument Flight Rules whenever they are unable to comply with conditions required for VFR flight by day or at all times when operating by night except when permission has been granted for special VFR flight within a control zone.
2. Aircraft flown in accordance with Instrument flight Rules shall be equipped with suitable instruments and with navigation equipment appropriate to the route to be flown.
- 2.1 Except when necessary for take-off or landing, an IFR flight shall be flown at a level which is not below the minimum flight altitude established, or where no such minimum flight altitude has been established.
 - a) Over high terrain or in mountainous areas, at a level which is at least 2000FT.(600 M); or
 - b) Elsewhere than specified above at least 1000 FT. (300 M) above the highest obstacle located within 8 km of the estimated position of the aircraft.
- 3 Change from IFR flight to VFR flight
 - 3.1 An aircraft conducted in compliance with instrument flight rules desiring to change to compliance with visual flight rules, if a flight plan was submitted, notify the appropriate air traffic services unit specifically that the IFR flight is cancelled and communicate there to the changes to be made to its current flight plan.
 - 3.2 When an aircraft operated in accordance with IFR is flown in or

encounters VMC it shall not cancel its IFR flight unless it is anticipated, and intended, that the flight will be continued for a reasonable period of time in uninterrupted visual meteorological conditions.

4 IFR Flight within Controlled Airspace

- 4.1 IFR flight operated in controlled airspace shall comply with the provisions of Annex 2 Chapter 3 Part 3.6 as follows:
 - a) Submit a flight plan;
 - b) Obtain air traffic control clearances prior to operating a controlled flight and request such clearances through the submission of a flight plan to an ATCU;
 - c) adhere to the current flight plan or the applicable portion of a current flight plan unless a request for a change has been made and clearance obtained from the appropriate air traffic control unit, or an emergency situation arises which necessitates immediate action by the aircraft, in which event as soon as circumstances permit, the appropriate ATSU shall be notified of the action taken and that this action has been taken under emergency authority;
 - d) Report position to the appropriate ATSU, as soon as passing each designated compulsory reporting point, the time and level together with any other required information. Additional reports may be made when requested by the appropriate ATSU;
 - e) Maintain continuous listening watch on the appropriate radio frequency and establish two-way communication as necessary with the appropriate ATC unit.

5. POSITION REPORTING PROCEDURES:

- 5.1 On routes defined by designated significant points, position reports shall be made when over, or as soon as possible after passing each designated compulsory reporting point. Additional reports over other points may be requested by the Air Traffic Services Unit concerned when so required for air traffic services purposes.
- 5.2 On routes not defined by designated significant points, position reports shall be made as soon as possible after the first half hour of flight and at hourly intervals thereafter.
- 5.3 Contents of Position Reports:

- a) Aircraft identification
- b) Position
- c) Time
- d) Flight level or altitude
- e) Next position and time over
- f) Ensuing significant point

5.4 Aircraft on VFR flights shall make R/T contact with the appropriate ATS unit on the relevant frequency in accordance with the following procedure:

- a) As soon as possible after departure;
- b) When changing frequency;
- c) When destination is insight;
- d) On flights of sufficient duration an "operations normal" call or a position report shall be made at intervals of not more than one hour;
- e) In the event of failure to establish contact, pilots should broadcast their reports.

ENR 1-4 ATS AIRSPACE CLASSIFICATION**1. ATS AIRSPACE CLASSES IN ADDIS ABABA FIR****Controlled Airspace**

- 1.1 Class A Airspace
 - a) Addis Ababa FIR above FL 245
 - b) Addis Ababa UTA
 - c) All Airways, ATS routes and Dire Dawa TMA above FL145
- 1.2 Class B Airspace NIL
- 1.3 Class C Airspace
 - Area II of Bole CTR and Area I of Bole CTR above 10,500 ALT
- 1.4 Class D Airspace
 - a) Addis Ababa and Dire Dawa TMAs below FL145
 - b) Dire Dawa CTR
- 1.5 Class E Airspace
 - a) Bahir Dar and Gambella CTRs
 - b) Area I of Bole CTR, below 10,500 ALT
 - c) All Airways & ATS routes below FL 145
 - d) Jimma CTR
 - e) Mekele CTR

Uncontrolled Airspace

- 1.6 Class F-NIL
- 1.7 Class G Airspace

All Airspaces outside the published ATS routes, UTA, TMAs & CTRs.

**GENERAL RULES AND PROCEDURES
ATS AIRSPACE CLASSIFICATIONS**

Class	Type of flight	Separation provided	Service provided	VMC visibility and distance from cloud minima*	Speed Limitation *	Radio Communication requirement	Subject to an ATC Clearance
A	IFR ONLY	All Aircraft	Air traffic Control Service	Not applicable	Not applicable	Continuous Two-way	Yes
B	IFR	All Aircraft	Air traffic Control Service	Not applicable 8 km at and above 3050m (10000ft)AMSL Clear of clouds	Not applicable	Continuous two-way	Yes
	VFR	All Aircraft	Air traffic Control Service		Not applicable	Continuous two-way	Yes
C	IFR	IFR from IFR IFR from VFR	Air traffic Control Service	Not applicable 8km at and above 3050m (10000ft) AMSL 1500M horizontal:300m vertical distance from cloud	Not applicable	Continuous two-way	Yes
	VFR	VFR from IFR	1)Air traffic control service for separation from IFR		250kt IAS below 3050m (10000ft0 AMLS)	Continuous two-way	Yes
D	IFR	IFR from IFR	Air traffic control service including traffic information about VFR flights (and traffic avoidance advice on request)	Not applicable	250kt IAS below 3050m (10000ft0 AMLS)	Continuous two-way	Yes
	VFR	Nil	Traffic information between VFR and IFR flights (and traffic avoidance advice on request)	8km at and above 3050m(10,000ft)AMSL 5km below 3050m (10,000ft)AMSL 1500m horizontal:300m vertical distance from cloud	250kt IAS below 3050m (10000ft0 AMLS)	Continuous two-way	Yes
E	IFR	IFR from IFR	Air traffic control service and traffic information about VFR flights as far as practical	250kt IAS below 3050m (10000ft0 AMLS)	Not applicable	Continuous two-way	Yes
	VFR	Nil	Traffic information as fasts practical	8km at and above 3050m(10,000ft)AMSL 5km below 3050m (10,000ft)AMSL 1500m horizontal :300m vertical distance from cloud	250kt IAS below 3050m (10000ft0 AMLS)	No	No
F	IFR	IFR from IFR As far as practical	Air traffic advisory service: flight information service	Not applicable	250kt IAS below 3050m (10000ft0 AMLS)	Continuous two-way	No
G	VFR	Nil	Flight information service	8km at and above 3050m(10,000ft)AMSL 5km below 3050m (10,000ft)AMSL 1500m horizontal:300m vertical distance from cloud at and below 900m AMLS or			

ENR 1.5 Holding, Approach and Departure Procedures**1. General**

- 1.1 The holding, approach and departure procedures in use generally conform to those contained in PANS-OPS ICAO DOC 8168-OPS/611 Vol II, 5th Edition - 2006.
- 1.2 Holding areas have been calculated for levels up to 20000FT and speeds up to 240KT, except for those depicted on instrument approach charts which have been calculated for levels up to 14000FT and speeds up to 170KT for category A and B aircraft, and up to 230KT for category C and D Aircraft. Aircraft wishing to hold at higher levels or speeds require clearance to do so from the relevant ATC unit.

2 Arriving and Overflying flights

- 2.1 Aircraft desiring to fly in accordance with instrument flight rules within controlled airspace during the hours

of operations of the relevant ATS units shall request ATC clearance from the appropriate ATC units. Request by radiotelephony should be made when at least 10 minutes out. The following information should be passed on initial contact:

- a) aircraft identification and type;
 - b) present altitude, position and flight conditions;
 - c) estimated time over position of entry into the control zone and estimated time over the main navigational aid;
 - d) aerodrome of destination and true air speed.
- 2.2 Instrument approach procedures are depicted in AD2.22.

3. Departing Flights

IFR flights departing from controlled aerodromes will receive initial ATC clearances containing the clearance limit from the local aerodrome tower. The clearance limit will normally be the aerodrome of destination.

Flight level (FL)	Category A and B aircraft	Jet aircraft	
		Normal conditions	Turbulences conditions
Up to FL 140 (4 250 M) inclusive	170 KT	230 KT (425 KM/H)	280 KT (520 KM/H) or Mach 0.8 whichever is less
Above FL 140 (4 250 M) to FL 200 (6 100 M) inclusive		240 KT (445 KM/H)	
Above FL 200 (6 100 M) to FL 340 (10 350 M) inclusive		265 KT (490 KM/H)	
Above FL 340 (10 350 M)		Mach 0.83	

Use of GPS as Supplemental Means of Navigation within the Ethiopian Airspace

1. Introduction

- 1.1 ICAO circular 267 was published in 1996 to provide guidelines for the introduction and operational use of the Global Navigation Satellite System (GNSS) comprising the Global Positioning System (GPS) and the Global Orbiting Navigation Satellite System (GLONASS)
- 1.2 This AIC reviews the capabilities, limitations and constraints of the GPS, sets out airworthiness criteria for the approval of GNSS-based aircraft navigation equipment and defines conditions for the use of GNSS as primary means of navigation for enroute, and supplemental for terminal operations and non - precision approaches within the Ethiopian Airspace.
- 1.3 GPS of the United States is a Satellite - based radio navigation System. In October 1994, the system was formally offered by the United States for use by the international aviation community, and the offer was accepted by the ICAO Council on 26 October 1994.
- 1.4 In February 1995, at its ninth meeting, the AFI Planning and Implementation Regional Group (APRIG) adopted the AFI communications, Navigation and Surveillance and Air Traffic Management (CNS/ATM) Implementation Plan, which, interalia, advocates the progressive utilization of GNSS for all phases of flight in the Africa and Indian Ocean Region.
- 1.5 The interim policy stated in these AIC parallels the early stages of the use of GPS as authorized by the United States Federal Aviation (FAA), and Transport Canada. Its aim is to realize early benefits from

existing capabilities of GPS without waiting for the availability of differential GPS or full GNSS.

Brief Description of GPS

- 1.6 Twenty-four satellites are in six orbits approximately 20,200km. (10,900 NM) above the surface of the earth. Each satellite broadcasts a timing signal and data message. A portion of the data message gives a GPS receiver the orbital details of each satellite. The receiver measures the time taken for the signal to arrive from the satellite in view and from this information computes a position and velocity.
- 1.7 Three satellites are needed to determine a two dimensional position, and four for a three dimensional position. The elevation and geometry of each satellite relative to the receiver must satisfy certain criteria before the designed system accuracy can be achieved. Standard Positioning Service (SPS) accuracy of 100 meters or better should be available with ninety-five percent probability and 300 meters or better with 99.9 percent probability. The vertical accuracy is 156 meters (95% probability),and the timing /time control accuracy is within 340 nano seconds (95% probability) of Co-ordinated Universal Time (UTC). However, it should be noted that the GPS signal may suffer from interference, and that gaps in coverage do occur. These gaps are normally transient and predictable.nano seconds (95% probability) of Co-ordinated Universal Time (UTC). However, it should be noted that the GPS signal may suffer from interference, and that gaps in coverage do occur. These gaps are normally transient and predictable.

2. Geodetic Considerations

- 2.1 GPS derived position information is referenced to the World Geodetic System-1984 (WGS-84) Datum. This datum relates geographical Co-ordinates to a mathematically defined ellipsoid that approximates the shape of the earth. The point of origin for the WGS-84 datum is the Earth's centre of gravity. ICAO has adopted WGS-84 as the common geodetic system for international civil aviation and requested that as of 1 January 1998, published geographical Co-ordinates be referred to WGS-84 (Annex 15, chapter 3.3.4.4)
- 2.2 Aeronautical geographical Co-ordinates throughout the world have in the past been derived in relation to local or regional datums. A given set of Co-ordinates referenced to a national datum could, however, be significantly displaced from the same Co-ordinates referenced to the WGS-84. Therefore, where the WGS-84 Co-ordinates have not been implemented, GPS based navigation may result in significant position errors in flight. For example, it is not safe to use GPS derived information to carry-out instrument approaches at runways for which WGS-84 Co-ordinates have not been provided.
- 2.3 Guidance on WGS-84 is provided in ICAO Doc 9674, World Geodetic System-1984 (WGS-84) Manual. Determination of WGS-84 Co-ordinates has been carried out within the Addis Ababa FIR in accordance with ICAO specifications. (REF AIP SUP/A 03/99 of 26 Aug 99 and AIRAC AIP SUP A 08/01 of May 03/01)

4. Other Considerations

Introduction of GPS - based operation involves a number of additional considerations that must be taken into account. These include data-base development and maintenance, Pilot training, certification, ground and flight inspection.

5 The need for Augmentation of GPS

- 5.1 Present ground-based navigation aids are monitored and the monitor takes action if erroneous signals are being radiated. On the present configuration of the GPS system, it may take considerable time before users become aware of any malfunctioning.
- 5.2 Aircraft-based augmentation can provide this information as necessary for supplemental means of navigation.
- a) Aircraft-based augmentation can be implemented by:
- i) Receiver Autonomous Integrity Monitoring (RAIM) whereby, provided that there are five satellites in view with adequate geometry, erroneous information from one satellite can be detected. If there are six satellites in view, the faulty satellite can be rejected by the receiver; or
 - ii) Aircraft Autonomous Integrity Monitoring (AAIM) whereby the GPS signal is integrated with other sensors (for example, INS) which can detect and reject spurious information from the GPS.

6. Use of GPS Receivers in VFR and IFR

- 6.1 There are a number of GPS receivers available that do not meet the requirements for IFR operations specified in the FAA TSO -C129. Although sufficiently accurate guidance is normally furnished by these receivers, false information can, however, be provided without warning. Although the use of such receivers is not permitted in IFR, uncertified GPS receivers may be used to support VFR navigation only in conjunction with standard VFR navigation practices, namely the cross-checking of present position by visual reference to landmarks.
- 6.2 Only certified GPS receivers should be used in IFR.
- 6.3 VOR, VOR/DME and NDB as appropriate are the primary navigation systems for continental enroute and terminal area operations and for non-precision approach and landing in the Addis Ababa FIR. Aircraft must be suitably equipped with serviceable primary navigation systems for navigation appropriate for the intended flight operations.
- 6.4 With effect from 06 September 2001 a GPS receiver may be used to navigate aircraft in IFR under the following conditions.
- 6.4.1 Continental Enroute and Terminal Area.
- a) the GPS navigation equipment must have been certified to comply with the requirements for any of the classes in FAA TSO-C129 or equivalent, be installed and approved in accordance with FAA AC 20-138 for stand-alone equipment or AC 20-130 for multi - sensor equipment and be operated in accordance with the approved Flight Manual or any supplement thereof and
 - b) Aircraft using GPS equipment under IFR must be equipped with another

approved and operational means of navigation. Should GPS navigation capability be lost, this equipment must allow navigation along the planned route or suitable alternate route. Monitoring of the traditional navigation equipment is necessary when there are insufficient satellites in view for RAIM to operate.

- c) The appropriate air worthiness authority of the state of registry of the aircraft must have carried out the necessary check up and issued operational approval of the GPS, operation to the operator concerned.
- d) The operator of the aircraft will be responsible for the training of pilots and inclusion in the approved flight manual, of the operating procedures of the GPS equipment.
- e) The pilot intending to use GPS navigation must consult the current satellite outage prediction NOTAMs and plan his flight accordingly.

7. Use of GPS as a supplemental – means of Navigation.

GPS navigation is the primary navigation system for continental enroute and supplemental means for terminal area operations as well as for non-precision approach and landing in the Addis Ababa FIR. VOR, VOR/DME and NDB as appropriate are still primary means of navigation in the terminal and non-precision approach phases of flights. Aircraft must be suitably equipped with serviceable primary navigation systems for navigation appropriate for the intended flight operations.

7.1 With effective from 23 January 2003 a GPS receiver may be used to navigate aircraft in IFR under the following conditions.

7.1.1 Continental Enroute and Terminal Area.

- a) The GPS navigation equipment must have been certified to comply with the requirements for any of the classes in FAA TSO-C129 or equivalent, be installed and approved in accordance with FAA AC 20-138 for stand-alone equipment or AC 20-130 for multi sensor equipment and be operated in accordance with the approved Flight Manual or any supplement thereof and
- b) Aircraft using GPS equipment under IFR must be equipped with another approved and operational means of navigation. Should GPS navigation capability be lost, this equipment must allow navigation

along the planned route or suitable alternate route. Monitoring of the traditional navigation equipment is necessary when there are insufficient satellites in view for RAIM to operate.

- c) The appropriate airworthiness authority of the state of registry of the aircraft must have carried out the necessary check up and issued operational approval of the GPS operation to the operator concerned.
- d) The operator of the aircraft will be responsible for the training of pilots and inclusion in the approved flight manual, of the operating and inclusion in the approved flight manual, of the operating procedures of the GPS equipment.
- e) Pilots intending to use GPS navigation must consult the current satellite outage prediction NOTAMs and plan their flight accordingly.

1.GPS Non - Precision Approach at the Addis Ababa Bole International Airport

1.1 On the basis of AIP SUP A09/02 of 12 DEC 2002 new RNAV GPS instrument approach procedures for RWY 25L and RWY 25R have been implemented with the following conditions:

- a) The GPS navigation equipment must have been certified to comply with the requirements of class c₃ in FAA TSO - C129 or equivalent, installed and approved in accordance with FAA AC 20 - 138 for stand-alone equipment (or equivalent), or AC 20-130 for multi-sensor equipment or equivalent, and operated in accordance with the approved flight manual or any supplement thereof, and
 - b) aircraft with approved GPS installation can use GPS-based non precision approach procedure(s) for which points and fixes have been referenced to the WGS-84 provided the following procedures are complied with
- I. The avionics database must be current and must contain the non-precision approach to be flown. All associated data bases must contain co-ordinates referenced to the WGS-84; and
- II. An approach procedure using GPS shall not be flown unless it is retrieved from the avionics database. The GPS avionics must store the location of all way-points and fixes defining the approach and must present them in the order depicted on the relevant instrument approach chart.
 - III. The airborne GPS equipment must have RAIM capability integrated with the FMS.
 - IV. Aircraft using this non-precision instrument approach procedure, must in addition be equipped with INS/IRS navigation systems to be used in case of inadvertent satellite outages.
 - V. Pilots must consult satellite outage prediction NOTAMs before commencing their flight operations.
 - VI. Proper training and licensing of pilots as well as airworthiness approval of GPS navigation equipment is the responsibility of the state of registry of the aircraft
 - VII. WGS-84 co-ordinates for Addis Ababa Bole Int'l Airport RNAV-GPS non-precision approaches RWY 25L and RWY 25R are attached to the respective charts.

Procedure to protect aircraft that are appropriately equipped with ACAS-II and pressure altitude reporting transponders:-

1. With effect from January 1, 2005 Turbine engined aero planes with a maximum certificated take-off mass in excess of 5700kg or authorized to carry more than 19 passengers that are not equipped with ACAS-II. But equipped with pressure altitude reporting transponders shall not be permitted to enter the Addis Ababa Bole International airport control zone during the time international commercial air transport aircraft equipped with ACAS-II are in operation at the airport.
2. ATC shall instruct such flights to remain outside Addis Ababa CTR until such time that international commercial air transport aircraft have landed or departed from the airport.
3. In order to avoid the inconvenience that may be caused, operators of aircraft with the above specific conditions are instructed to re-schedule their operation to/from the airport in close co-ordination with the relevant ATS authority.

4. General aviation aircraft that are not equipped with pressure altitude reporting transponders shall not be permitted to enter the CTR during the time international commercial air transport operations equipped with ACAS-II are in progress at the airport.
5. Those aircraft that are equipped with pressure altitude reporting transponders shall be accepted within the control zone when clearance is obtained from the appropriate ATS unit during the day time only.
6. Turbine engined aero planes referred to in (1) above shall not enter into international commercial operation. One time special authorization may be granted by the appropriate authority on a case by case basis.
7. International commercial aircraft equipped with ACAS-II shall always have priority of operation to/from the airport over non-ACAS-II equipped aircraft.
8. Non-ACAS-II equipped aircraft shall not fly along designated ATS routes or cross such routes without clearance from the appropriate ATS unit.

9. The Pilot in command of non-ACAS-II equipped aircraft shall comply with the provisions stated above and also be responsible to fly clear of all designated

ATS routes and maintain his own lateral separation from such ATS routes unless authorized by the relevant ATS unit.

Addis FIR, ACC Sector East and ACC Sector West are established and applicable with the following details:-

1. Authority and Areas of Responsibility

Addis ACC East and West are responsible for the provision of air traffic control service, flight information service and alerting service for all aircraft operating within their respective areas of responsibility as defined below.

Addis East Sector

The area of responsibility for Addis ACC East is the air space that lies within the limit of the area defined by joining the coordinates N14°20' E037°00', N11°45' E037°00' along Bahir Dar CTR boundary-clockwise to N11°15' E037°50', N10°40' E038°10' along the Addis UTA boundary-clockwise to N08°55' E040°30', N08°55' E040°40', N07°00' E040°40' N06°18' E040°00', N05°18'0 E040°00', N04°00' E040°00' then along the Nairobi/Addis FIR boundary and Khartoum/Addis FIR boundary. Vertical limit ground to unlimited.

Mogadicio/Addis FIR following the existing Addis FIR boundary to the EST. Vertical limit ground to unlimited.

Addis West Sector

The area of jurisdiction for Addis ACC West is the airspace defined by joining successively the points N14°20' E037°00', N11°45' E037°00' along Bahir Dar CTR boundary-clockwise to N11°15' E037°50', N10°40' E038°10' along the Addis UTA boundary-clockwise to N08°55' E040°30', N08°55' E040°40', N07°00' E040°40' N06°18' E040°00', N05°18'0 E040°00', N04°00' E040°00' then along the Nairobi/Addis FIR boundary and Khartoum/Addis FIR boundary. Vertical limit ground to unlimited.

2. Frequencies

ACC Sector East :- 125.2 MHZ, day HF
11300 KHZ and HF night 5517 KHZ
ACC Sector West:- 125.1 MHZ, day HF
11300 KHZ and HF night 5517 KHZ

Transfer of control point

ATS route	Transfer of control point	Coordinates	Transfer of communication point
G650/UG650	RANSO	N10 46 50.6 E038 46 11.7	5 min before RANSO
A 480	GISHE	N10 27 34.3 E039 45 50.8	5 min before GISHE
B535/UB535	ASOLE	N09 56 25.7 E040 13 56.8	5 min before ASOLE
W886	MIWAS	N09 25 18.9 E040 25 30.6	5 min before MIWAS
UG 300	IXELA	N06 18.0 E040 00.0	5 min before IXELA
W15	NETIN	N05 18.0 E040 00.0	5 min before NETIN

1. Frequency assignment for transfer of communications is as follows

ATS Route	ATS Unit Call Sign	Primary Frequency	Secondary Frequency
G650/UG650	Addis ACC West	125.1MHZ	Day 11300
	Addis ACC East	125.2 MHZ	Night 5517
UA 408	Addis ACC West	125.1MHZ	Day 11300
	Addis ACC East	125.2 MHZ	Night 5517
B535/UB535	Addis ACC West	125.1 MHZ	Day 11300
	Addis ACC East	125.2 MHZ	Night 5517
W886	Addis ACC West	125.1MHZ	Day 11300
	Addis ACC East	125.2 MHZ	Night 5517
UG300	Addis ACC West	125.1MHZ	Day 11300
	Addis ACC East	125.2 MHZ	Night 5517
W-15	Addis ACC West	125.1MHZ	Day 11300
	Addis ACC East	125.2 MHZ	Night 5517

Aircraft shall establish communications with the accepting unit over the transfer of control point; transfer of communication point may not

coincide with the transfer of control point on the same route

ENR 1.6 RADAR SERVICES AND PROCEDURES**1. General****1.1 DESCRIPTION OF PRIMARY and secondary radar in Air traffic control**

(ATC) uses radar to increase airspace utilization by reducing separation between aircraft. In addition, radar permits better provisions of flight information services such as traffic information and navigation assistance. There are two types of radar systems currently in use: primary surveillance radar (PSR) and secondary surveillance radar (SSR). PSR determines the position (range and azimuth) of contacts (aircraft and weather) by measuring and displaying reflected radio frequency signals from the contacts. It does not rely on information transmitted from the aircraft. SSR relies on measurement of the time interval between the interrogation and reply by an airborne transponder to determine aircraft range. SSR will not provide position of aircraft without operating transponders, nor will it locate weather. SSR however offers significant operational advantages to ATC, such as increased range, positive identification and aircraft altitude, when the aircraft has an altitude-encoding transponder. Radar is currently in use for the en- route and terminal control .SSR is the main source of en route (airways) information. SSR is a long-range radar with a range of 200 nautical miles (NM)

or more, In general, the shorter range PSR complements SSR for terminal operations.

1.2 Addis Ababa Radar Unit will use the following call sign and radio frequency respectively when providing radar service:- "BOLE RADAR" on frequency 119.7

1.3 The Addis Ababa Bole Approach radar unit operates as an integral part of the ATC procedural unit and provides radar services to aircraft to the maximum extent practicable to meet the operational requirement.

1.4 The approach Radar services are provided in accordance with the Manual of Air traffic Services and ICAO Doc/4444-PANS/ATM.

2. Radar Equipment

The radar unit is equipped with primary and monopulse secondary surveillance radar (MSSR -MODE-S) system providing a plan position picture of aircraft within the service area and this information is presented to the radar controller on a situation display.

3. Radar Coverage

The maximum primary radar coverage of the Bole Approach Radar unit is 60 NM and that of the monopulse secondary surveillance radar is 200 NM. However, the radar has optical visibility limitation at lower levels to the W, NW, and N between the following sectors.

--- R250 AND R290 ADS VOR/DME.

--- R315 AND R045 ADS VOR/DME.

(Ref-Radar vectoring ALT chart)

4. USE OF RADAR FOR APPROACH CONTROL SERVICE

- 4.1 The information presented on a radar display may be used to perform the following functions in the provision of approach control service:
- a) Provide radar vectoring of arriving traffic on to pilot interpreted final approach;
 - b) Provide radar vectoring of arriving traffic to a point from which a visual approach can be completed;
 - c) Provide radar monitoring of other pilot-interpreted approaches;
 - d) Provide radar separation between:
 - i) succeeding departing aircraft;
 - ii) succeeding arriving aircraft; and
 - iii) a departing aircraft and a succeeding arriving aircraft.

5. USE OF RADAR IN THE AERODROME CONTROL SERVICE

5.1 Surveillance radar may be used in the provision of aerodrome control service to perform the following functions:

- a) Radar monitoring of aircraft on final approach;
- b) Radar monitoring of other aircraft in the vicinity of the aerodrome.

6. Use of Radar for flight information service

The information presented on a radar display may be used to provide identified aircraft with:-

- a. Information on the position of significant weather as far as practicable. However depending on the capabilities of the radar system areas of adverse weather may not be well presented on ATC radar display. Bole weather radar system doesn't well present adverse weather, but an aircraft's weather radar will normally provide better detection and definition of adverse weather than radar sensors on use by ATS.

Therefore, when aircraft operating in Addis FIR under Radar control encounter adverse weather, pilots shall take the responsibility of avoiding action and determine in advance

the convenient heading to avoid the bad weather and obtain approval from radar ATC unit.

- b. Information regarding any aircraft observed to be on a conflicting path with the radar-identified aircraft and suggestions or advice regarding avoiding action (in Bole training area of class E airspace and Bole TMA of class D airspace).
- C. Information useful for navigation in the enroute and terminal control area.

7. PRESENTATION OF RADAR INFORMATION

- 7.1 The radar system shall provide a continuously updated presentation of radar-derived information, including Radar position indications.
- 7.2 Radar position indications may be displayed as radar position symbols (RPS), which includes:
 - i) PSR symbols;
 - ii) SSR symbols; and
 - iii) Combined PSR/SSR symbols

8. Establishing a Service

- 8.1 Before providing radar service to an aircraft, radar identification shall be established and the pilot so informed. Thereafter, radar identification shall be maintained until termination of the radar service.

- 8.2 If radar identification is subsequently lost, the pilot shall be informed accordingly and, when applicable, appropriate instructions issued.
- 8.3 Radar identification will be effected by one or more of the following methods:
- By a pilot report over a designated reporting point obtained by means of a radio aid or reporting over waypoints by means of RNAV system.
 - By a pilot report in terms of a VOR radial and DME from co-located VOR/DME facilities.
 - By correlating an observed radar position indication with an aircraft which is known to have just departed, provided that the identification is established within 2 km (1NM) from the end of the runway used;
 - By issuing instructions to a pilot to carry out turns of 30° or more which can readily be observed on a radar display, or by observing turns reported by a pilot. When using these methods, the radar controller shall:
 - Verify that the movements of not more than one radar position indication correspond with those of the aircraft; and

- Ensure that the maneuvers will not carry the aircraft outside the coverage of the radar display.
- By radar handover;
- Recognition of the aircraft identification in a radar label;
- Recognition of an assigned discrete code, the setting of which has been verified, in a radar label;
- By transfer of radar identification;
- Observation of compliance with an instruction to set a specific code;
- Observation of compliance with an instruction to squawk IDENT;

9. Position information

- 9.1 An aircraft provided with radar service should be informed of its position in the following circumstances:

- Upon identification, except when the identification is established in the following situations:-
 - Based on the pilot's report of the aircraft position or within one nautical mile of the runway upon departure and the observation is consistent with the aircraft's time of departure; or
 - By use of assigned discrete SSR codes or Mode S and the location of the observed radar position indication is consistent with the current flight plan of the aircraft; or
 - By transfer of radar identification;
- When the pilot requests this information;
- When a pilot's estimate differs significantly from the radar controller's estimate based on radar observation;
- When the pilot is instructed to resume own navigation after radar vectoring if the current instructions had diverted the aircraft from a previously assigned route,
- Immediately before termination of radar service, if the aircraft is observed to deviate from its intended route.

9.2 Position information shall be passed to aircraft in one of the following forms:

a) As a well-known geographical position;

b) Magnetic track and distance to a significant point, an en-route navigation aid, or an approach aid;

c) Direction (using points of the compass) and distance from a known position;

d) Distance to touchdown, if the aircraft is on final approach; or

e) Distance and direction from the centre line of an ATS route.

9.3 Whenever practicable, position information shall relate to positions or routes pertinent to the navigation of the aircraft concerned and displayed on the radar map.

10. Terrain Clearance

After identification, levels assigned by Radar Controller on the en-route, initial, intermediate and departure phases will provide a minimum of 1000 feet vertical clearance above any fixed object within 3NM of the track of the aircraft if the range is less than 20 NM ADS VOR OR 1000 feet vertical clearance above any fixed object within 5NM of the track of the aircraft if the range is more than 20 NM ADS VOR.

(Ref. MIN radar vectoring ALT chart)

11. Radar separation

The minimum horizontal radar separation shall be:-

- a. 5 Nautical miles (9.3 km) between identified aircraft within 60 DME ADS

and 10 nautical miles outside of 60 DME ADS. This separation may be increased at the discretion of the radar controller when the situation warrants. E.g. high-speed converging aircraft, RWY OCCUPANCY TIME, for spacing of departure traffic ready for takeoff, unpredictable maneuvers of unknown aircraft, bad weather, etc.

- b. Whenever SSR is used without its associated primary radar, the separation minima shall be increased to 10NM.
- c. It is not possible to specify separation minima between identified aircraft and unknown traffic considered to constitute a hazard due to unpredictable maneuvers of the latter. However, whenever Practicable, the minimum radar separation shall be applied or traffic information shall be provided to the identified aircraft.
- d. The following wake turbulence radar separation minima shall be applied to aircraft in the approach and departure phases of flight:-

<i>Aircraft category</i>		
<i>Preceding aircraft</i>	<i>Succeeding aircraft</i>	<i>Wake turbulence radar separation minima</i>
HEAVY	HEAVY MEDIUM LIGHT	7.4 km (4.0 NM) 9.3 km (5.0 NM) 11.1 km (6.0 NM)
MEDIUM	LIGHT	9.3 km (5.0 NM)

12. Speed control

12.1 General

Taking into consideration of aircraft performance limitations, a radar controller may, in order to facilitate radar control or to reduce the need for radar vectoring, request aircraft under radar control to adjust their speed in a specified manner.

12.2 Speed control shall not be applied to aircraft entering or established in a holding pattern.

12.3 Speed adjustments should be limited to those aircraft when necessary to establish and/or maintain a desired separation minimum or spacing. Instructions involving frequent changes of speed, including alternate speed increases and decreases, should be avoided.

12.4 The flight crew shall inform the ATC unit concerned if at any time they are unable to comply with a speed instruction. In such cases, the controller shall apply an alternative method to achieve the desired spacing between the aircraft concerned.

12.5 Aircraft shall be advised when a speed control restriction is no longer required.

12.6 Descending and arriving aircraft

12.6.1 An aircraft should, when practicable, be authorized to absorb a period of notified terminal delay by cruising at a reduced speed for the latter portion of its flight.

12.6.2 An arriving aircraft may be instructed to maintain its "maximum speed", "minimum clean speed", "minimum speed", or a specified speed.

Note.— for "Minimum clean speed" use IAS 230/220 knots when required.

12.6.3 Speed reductions to less than 460 km/h (250 knots) IAS for turbojet aircraft during initial descent from cruising level should be applied only with the concurrence of the flight crew.

12.6.4 Instructions for an aircraft to simultaneously maintain a high rate of descent and reduce its speed should be avoided as such maneuvers are normally not compatible. Any significant speed reduction during descent may require the aircraft to temporarily level off to reduce speed before continuing descent

- 12.6.5 Only minor speed reductions not exceeding plus/minus 40 km/h (20 knots) IAS should be used for aircraft on intermediate and final approach (or to reduce speed advise aircraft concerned to reduce to minimum approach speed)
- 12.6.6 Speed control should not be applied to aircraft after passing a point 7 km (4 NM) from the threshold on final approach.

13. Radar Vectoring

- 13.1 Generally, all aircraft shall be allowed by radar ATC to operate on conventional SIDs or STARs, RNAV SIDs or STARs and RNAV approach procedure to conduct their own navigation to the extent possible using radar separation. However, vectoring to aircraft can be provided to expedite traffic flow by taking into consideration the provisions in number 11, 12 & 13 above.
- 13.2 Prior to, or upon commencement of radar vectoring for approach, the pilot shall be advised of the type of approach as well as the runway to be used.
- 13.3 Aircraft vectored for final approach will be given a heading or a series of headings calculated to close with the final approach track. In case of vectoring for ILS approach RWY25, the final vector shall enable the aircraft to be established in level flight on the final approach track prior to intercepting the specified or nominal flight path .In case of vectoring for RNAV GNSS APPROACH RWY 07, due to terrain, the ATC will provide clearance to aircraft DIRECT to IAF OR to a convenient waypoint following the IAF, after which pilot shall continue flying the published RNAV approach procedure.

14. Vectoring for visual approach

- 14.1 The radar controller may initiate radar vectoring of an aircraft for visual approach provided the reported ceiling is above the minimum altitude applicable to radar vectoring and meteorological conditions are such that, with reasonable assurance, a visual approach and landing can be completed.
- 14.2 Clearance for visual approach shall be issued only after the pilot has reported the aerodrome or the preceding aircraft in sight, at which time radar vectoring would normally be terminated.

15. Interruption or termination of radar service

- 15.1 An aircraft which has been informed that it is provided with radar service should be informed immediately when, for any reason, radar service is interrupted or terminated.
- 15.2 When the control of an aircraft is to be transferred from a radar controller to a non-radar controller, the radar controller shall ensure that non-radar separation is established between that aircraft and any other controlled aircraft before the transfer is effective.

16. Operation of SSR in the Airspace of Ethiopia

16.1 Applicability

All flights shall be equipped with SSR transponders having mode C or mode S capability When operating in the following areas:-

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- 16.1.1 All IFR flights operating in Addis Ababa FIR.
- 16.1.2 However, All VFR flights which are not equipped with SSR transponder shall expect delay during the time mode "S" OR "C" equipped aircraft are approaching to land at the Addis Ababa Bole International airport.

16.2 General

Unless laid down otherwise in this procedure in individual cases, all IFR and VFR flights shall operate their transponders on selected modes and codes as directed by ATC.

16.3 Setting of SSR Transponder During Normal Operation

- Unless instructed otherwise, the pilot entering the area of competency of ATC shall maintain the code assigned to him by the last ATC unit until a new code is assigned to him.
- If the pilot has been instructed to set Mode A or another identified mode, he shall also set Mode C simultaneously without specific instructions.
- A pilot whose SSR transponder operates incorrectly on Mode C, shall, unless otherwise instructed, immediately inform the competent ATC unit accordingly and

16.5 SSR CODE ASSIGNMENT

Aircraft operating in the Addis Ababa radar controlled airspace will be assigned the following codes:-

INTERNATIONAL	DOMESTIC
2400-2477	1300-1377
GENERAL CODE	GENERAL CODE
2000	1377

16.6 SSR Transponder Failure Procedures

The procedure to be followed during complete transponder failure is as follows:

(1) In case of a SSR transponder failure which cannot be restored before departure, the pilot shall.

16.6.1 Inform the competent ATC unit and obtain permission to execute the flight.

16.6.2 Plan to proceed in accordance with the conditions imposed by ATC as directly as possible to the nearest suitable aerodrome, where repair can be effected.

16.6.3 Insert in item 10 of the flight plan form under "SSR" the letter "N" for complete unserviceability of the SSR transponder or in case of partial transponder failure, the letter corresponding to the remaining transponder capability.

16.6.4 In case of failure occurring while in flight, the pilot shall immediately inform the competent ATC unit accordingly and shall follow ATC subsequent instructions.

16.7 Procedures for Operational Use of Mode C Altitude Responses

The procedures described below for the operational use of Mode C altitude responses are applied by the ATC units:

16.7.1 General requirements

The ATC unit shall compare the level reported by the pilot with the level responses by Mode C. If these values are within the tolerance, level indication can be used for control purposes.

16.7.2 Procedures for determination of level occupancy

The tolerance value shall be 300ft.

- a) A/C maintaining level:- is within + or - 300ft of the assigned level,
- b) A/C vacating a level :- a change of more than 300ft in the anticipated direction from previous level,
- c) A/C passing a level in climb or descent :- has passed this level in the required direction by more than 300ft,
- d) A/C reaching a level :- when 3 consecutive renewals or 15 seconds of mode C derived level information indicates it is within 300 ft of assigned level.

16.7.3 Deviations

If the reported level differs by more than 300 ft from the level indicated, the pilot will be informed of the difference and will be requested to report the level again, if the discrepancy persists, the pilot will be requested to stop Mode C transmission, if possible

17. Aircraft Radio Equipment and ATC Equipment Failure

17.1 Failure of the on board radio transmitter

The controller will ascertain whether the on board receiver is functioning or not by instructing the aircraft to select IDENT or by other identification method. If it has been established that the on board receiver is functioning, Radar controlling will continue by asking the aircraft to acknowledge receipt of authorizations transmitted by changing code or operating with its IDENT Device.

- 17.2 When an aircraft encounters total radio failure, the pilot shall select the transponder code 7600 and follow Air ground communication failure procedures as specified in AIP Ethiopia page AD2-HAAB-13 up to AD2. HAAB-16.

17.3 Radar Failure or loss of Radar contract

- 17.3.1 In the event of radar failure or loss of radar contact, ATC shall plot the positions of all aircraft already identified, issue instructions to restore non-radar standard separation and when relevant, request the appropriate non-radar controller to assume Control of the traffic affected and the pilot may also be instructed to communicate with the concerned procedural ATC UNIT.
- 17.3.2 As an emergency measure, use of flight levels spaced by half the applicable vertical separation minimum may be resorted temporarily, if standard non-radar separation cannot be provided immediately.

17.4 Ground radio failure

- In the event of complete failure of the ground radio equipment used for radar control, the radar controller shall, unless able to continue to provide the radar service by means of other available communication channels, proceed as follows:-
- plot the positions of all aircraft already identified and, in conjunction with the non-radar controller when applicable, take the necessary action to establish non radar separation between the aircraft; and when relevant;
 - Request the appropriate non-radar controller to assume control of the traffic affected.
 - Pilot shall try to contact other ATC units during ground radio failure.

18.STANDARD RADIO TELEPHONY PHRASEOLOGY TO BE USED IN RADAR AIR TRAFFIC CONTROL

The following phraseology shall be used when an ATS surveillance system is used in the provision of air traffic services. All other standard phraseology may be used in addition when ever appropriate.

18.1 GENERAL**18.1.1 IDENTIFICATION OF AIRCRAFT**

- A) REPORT HEADING [AND FLIGHT LEVEL (OR ALTITUDE)];
e.g. ETH 012 REPORT HEADING [AND FLIGHT LEVEL, if the aircraft is flying above the transition level or Altitude - if the aircraft is flying below the transition altitude]
- B) FOR IDENTIFICATION TURN LEFT (OR RIGHT) HEADING (three digits);
e.g. ETH-1012 FOR IDENTIFICATION TURN LEFT (OR RIGHT) HEADING (Zero three zero)
- C) TRANSMIT FOR IDENTIFICATION AND REPORT HEADING;
e.g. AZA 689 - TRANSMIT FOR IDENTIFICATION AND REPORT HEADING;
- D) RADAR CONTACT [position];
e.g. ETH 050 RADAR CONTACT 50 NM west of GWZ;
- E) IDENTIFIED [Position]
e.g. ET-AMB IDENTIFIED-DISTANCE 45 NM SW of ADS
- F) NOT IDENTIFIED [reason], [Resume (or CONTINUE) OWN NAVIGATION]
e.g. ETH 1022 NOT IDENTIFIED DUE RADAR OUTAGE RESUME OWN NAVIGATION;

18.1.2 POSITION INFORMATION

POSITION (DISTANCE) (DIRECTION) OF (SIGNIFICANT Point) (or OVER or ABEAM (Significant point); (e.g. BAW 061 – POSITION 40 NM to ASOLE);

18.1.3 VECTORING INSTRUCTION

- a) LEAVE (significant point) HEADING (three digits);
(e.g. ETH 611 LEAVE ZENGO HEADING 195°);
- b) CONTINUE HEADING (three digits);
(e.g. CONTINE HEADING 085°);
- c) CONTINUE PRESENT HEADING;
(e.g. BAW 165 CONTINUE PRESENT HEADING);
- d) FLY HEADING (three digits)
(e.g. Eth 7010 FLY HEADING 070°)
- e) TURN LEFT (OR RIGHT) HEADING (three digits) [Reason];
(e.g. AZA 649 TURN LEFT HEADING 325° for final)
- f) TURN LEFT (OR RIGHT (number of degrees) DEGREES [REASON];
(e.g. ETH 001 TURN LEFT 320 DEGREES FOR SPACING ;)
- g) STOP TURN HEADING (number of digits) DEGREES;
(e.g. Eth 060 STOP TURN HEADING 250 DEGREES ;)
- h) FLY HEADING (three digits), WHEN ABLE PROCEED DIRECT(name) (Significant point);
(e.g. AZA 662 FLY HEADING 030, WHEN ABLE PROCEED DIRECT AKAKI;)
- i) HEADING IS GOOD
(e.g. ETH 010 HEADING IS GOOD;)

18.1.4 TERMINATION OF VECTORING

- a) RESUME OWN NAVIGATION (position of aircraft) (specific instructions)
(e.g. AZA 452 RESUME OWN NAVIGATION POSITION WENTU INTERCEPT LOCALIZER RWY 25L)
- b) RESUME OWN NAVIGATION [DIRECT] (Significant point) [MAGNETIC TRACK (THREE DIGITS) DISTANCE (number) KILOMETERS (or MILES)
(e.g. BAW061 RESUME OWN NAVIGATION DIRECT AB704 MAGNETIC TRACK 025 DEGREES 11 NAUTICAL MILES.);

18.1.5 SPEED CONTROL

ATC----- ETH 901 REPORT SPEED;
PILOT---SPEED 280 KNOTS;
ATC--- a) ETH 901 MAINTAIN 280 KOTS OR GREATER;
b) ETH901 MAINTAIN PRESENT SPEED;
c) ETH901 INCREASE (or REDUCE) SPEED TO 230 KTS;
d) ETH901 INCREASE (or REDUCE) SPEED BY 20 KNOTS;
e) ETH901 RESUME NORMAL SPEED;
f) ETH901 REDUCE TO MINIMUM APPROACH SPEED;
g) ETH901 REDUCE TO MINIMUM CLEAN SPEED;
h) ETH901 NO SPEED RESTRICTIONS;

18.1.6 TRAFFIC INFORMATION

TRAFFIC (number) O'CLOCK (distance) (direction of flight) [any other pertinent information]:

- UNKNOWN;
- SLOW MOVING;
- FAST MOVING;
- CLOSING;
- OPPOSITE (or SAME) DIRECTION;
- OVERTAKING;
- CROSSING LEFT TO RIGHT (or RIGHT TO LEFT);... (if known)
- (aircraft type);
- (level);
- CLIMBING (or DESCENDING);

EXAMPLE -ETH 602 TRAFFIC 3 O'CLOCK 20 NM CROSSING LEFT TO RIGHT SLOW MOVING LEVEL 9500FT. When passing traffic CLEAR OF TRAFFIC [appropriate instructions]

EXAMPLE -ETH 901 CLEAR OF TRAFFIC FLY DIRECT EGNAK.

18.1.7 TERMINATION OF RADAR SERVICE

RADAR SERVICE TERMINATED (*instructions*);
EXAMPLE --ETH 901 RADAR SERVICE TERMINATED, CONTAC ADDIS CENTER ON 125.1.

18.1.8 RADAR EQUIPMENT DEGRADATION

- a) SECONDARY RADAR OUT OF SERVICE (*appropriate information as necessary*);
- b) EXAMPLE ETH 901 SECONDARY RADAR OUT OF SERVICE. RADAR SERVICE IS PROVIDED BY PRIMARY RADAR.
- c) PRIMARY RADAR OUT OF SERVICE (*appropriate information as necessary*).
- d) EXAMPLE-- ETH 901 PRIMARY RADAR OUT OF SERVICE. RADAR SERVICE IS PROVIDED BY SECONDARY RADAR

18.1.9 VECTORING FOR APPROACH

- a) VECTORING FOR (*type of pilot-interpreted aid*) APPROACH RUNWAY (*number*);
EXAMPLE- ETH402 VECTORING FOR ILS APPROACH RWY25L;
- b) VECTORING FOR VISUAL APPROACH RUNWAY (*number*) REPORT FIELD (or RUNWAY) IN SIGHT; EXAMPLE- ETH402 VECTORING FOR VISUAL APPROACH RUNWAY 25L REPORT FIELD IN SIGHT;
- c) VECTORING FOR (*positioning in the circuit*);

EXAMPLE- ETH402 VECTORING FOR LEFT BASE RWY 25L;

- d) (*type*) APPROACH NOT AVAILABLE DUE (*reason*)(*alternative instructions*);

EXAMPLE-ETH402 ILS RWY25L APPROACH NOT AVAILABLE DUE TO GP UNSERVICABILITY.EXPECT VECTORING FOR RNAV GNSS RWY 25L.

18.1.10 TO INSTRUCT SETTING OF TRANSPONDER

- a) FOR DEPARTURE SQUAWK (*code*);
EXAMPLE- ETH402 FOR DEPARTURE SQUAWK 2401.
- b) SQUAWK (*code*).
EXAMPLE- ETH402 SQUAWK 2401.

18.1.11 TO REQUEST THE PILOT TO RESELECT THE ASSIGNED MODE AND CODE

- RESET SQUAWK [(*mode*)] (*code*);
EXAMPLE- ETH402 RESET SQUAWK A2401.

18.1.12 TO REQUEST THE PILOT TO CONFIRM THE CODE SELECTED ON THE AIRCRAFT'S TRANSPONDER

- CONFIRM SQUAWK (*code*);
EXAMPLE- ETH402 CONFIRM SQUAWK 2401;

18.1.13 TO REQUEST THE OPERATION OF THE IDENT FEATURE

- SQUAWK [(*code*)] [AND] IDENT;
EXAMPLE- ETH402 SQUAWK 2402 AND IDENT;

18.1.14 TO REQUEST EMERGENCY CODE

SQUAWK MAYDAY [CODE SEVEN-SEVEN-ZERO-ZERO].

EXAMPLE- ETH402 SQUAWK MAYDAY CODE SEVEN-SEVEN-ZERO-ZERO;

18.1.15 TO REQUEST TERMINATION OF TRANSPONDER OPERATION

STOP SQUAWK;

EXAMPLE- ETH402 STOP SQUAWK;

18.1.16 TO REQUEST TRANSMISSION OF PRESSURE ALTITUDE

SQUAWK CHARLIE;

EXAMPLE- ETH402 SQUAWK CHARLIE;

18.1.17 TO REQUEST PRESSURE SETTING CHECK AND CONFIRMATION OF LEVEL

CHECK ALTIMETER SETTING AND CONFIRM (*level*).

. EXAMPLE- ETH402 CHECK ALTIMETER SETTING AND CONFIRM *level 13500*,

18.1.18 TO REQUEST TERMINATION OF PRESSURE ALTITUDE TRANSMISSION BECAUSE OF FAULTY OPERATION

STOP SQUAWK CHARLIE WRONG INDICATION;

. EXAMPLE- ETH402 STOP SQUAWK CHARLIE WRONG INDICATION;

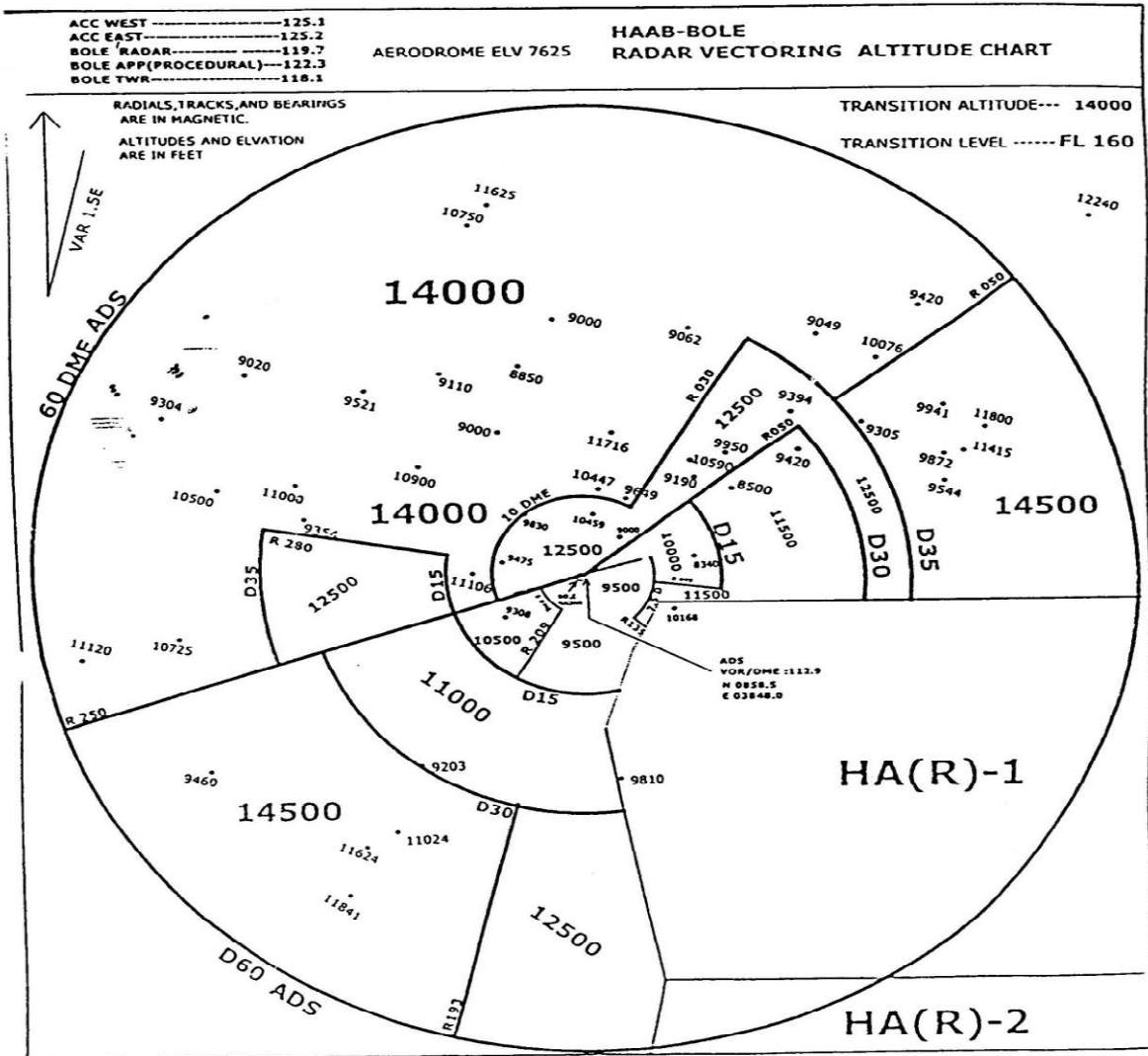
18.1.19 TO REQUEST LEVEL CHECK

CONFIRM (*level*);

EXAMPLE- ETH402 CONFIRM *level 14000*;

ENR 1.6-13
15 DEC 11

AIP ETHIOPIA



19 Implementation Of Automatic Dependent Surveillance Broadcast (ADS-B) Within The Addis Ababa FIR

19.1 The Use Of Automatic Dependent Surveillance Broadcast (Ads-B) Addis Ababa FIR.

The ADS-B Air Space within the Addis Ababa FIR shall be between Fl410-Fl290 Inclusive, and eventually, when most aircrafts are equipped, ECAA would extend the benefit of ADS-B separation down to lower flight levels.

19.2 Geographical boundary

The lateral dimension of the initial ADS-B transition air space will be the limits of the ADDIS Ababa FIR including the upper airspace over Djibouti between FL290-FL410 inclusive.

19.3 ADS-B Infrastructure

A number of ADS-B ground stations have been installed as part of the air navigation facilities modernization scheme. ADS-B ground stations have been provided at 7 locations coinciding with the remote VHF sites. The signals from five stations are transferred to the ACC through the VSAT network. At the moment, there are ADS-B ground stations at Dire Dawa, Mekele, Gode, Gore and Arba Minch. Additional ADS-B facilities are provided at GEWASSA and Addis Ababa Bole International Air Port.

19.4 ADS-B Aircraft equipage and Approval
On Board, Aircraft Sensors Are Responsible For Selecting The Required Data And Providing It To The Mode-S Transponder. Following the compilation Of ADS-B message, the Transponder transmits the data through an extended Squitter (ES), On 1090 MHZ. modern transponders are capable of compiling and transmitting ads-b messages once per second allowing atc access to real time aircraft position information. the responsibility for transmitting accurate data by the transponder in an aircraft rests solely on the aircraft operators.

The following minimum parameters must be broadcast by the transponders

- a) Airborne position.
- b) Navigation uncertainty category position (UCP) ≥ 5
- c) Or navigation integrity category (NIC) ≥ 6
- d) Flight ID
- e) Pressure altitude
- f) Special position indicator (SPI)
- g) Emergency status

Operators are urged when selecting ADS-B avionics to consider the availability of future upgrades to the full ADS-B message set.

Aircraft unable to down link the minimum message set as indicated above will be provided revised altitude or route clearance to avoid entering ADS-B surveillance air space.

19.5 Air born position

The GPS receiver, which must comply with Technical Standard Order (TSO) c-129,C-145 or C-146 generates position data with integrity, and aircraft should be equipped with receiver integrity, and aircraft should be equipped with receiver integrity monitoring system.

Reduced traffic separation is based on the coordinates provided by the aircraft, placing a high degree of reliance on the GPS data.

The transponder using the Receiver Autonomous Integrity Monitoring (RAM) algorithm, in turn calculates NUCP to provide assurance that separation can be applied safely. Any detection of poor satellite geometry diminishes position integrity, resulting in corresponding reduction of NUCP/NIC values. Ground stations will accept the position data incorporated in an ADS-B message with NUCP/NIC within the acceptable range. If the values fall below the required minima, the ground stations will automatically reject the ADS-B message and the target will be 'Coasted' on the controllers' display indicating loss of surveillance.

The controller then will advise the pilot "Surveillance Service Terminated". Only compliant aircraft, identified by the unique ICAO 24-BIT identifier are displayed to the controller.

Operators and aircraft may be required to receive specific approval from their responsible State authority in order to qualify for operations in ADS-B surveillance air space.

19.6 Air Space Coverage

Within the Addis Ababa TMA,(60NM radius area)PSR/SSR Mode/S and ADS-B signals properly integrated is available. Coverage of the SSR-Mode/S extends up to 250NM radius from the radar facility. Coverage of the ADS-B system extends to 200NM from each of the remote sites constituting an overall coverage of about 97% of the FIR.

19.7 Aircraft Equipage Requirement

The ADS-B installations on the aircraft shall comprise:

- a) ADS-B emitter, the SSR transponder or stand alone ADS-B emitter.
- b) Data source f the position of the aircraft, speed vector.(typically the FMS or GNSS receiver/Navigate)

- c) Data source of barometric altitude,(typically the air data computer or a standalone barometric pressure encoder), and
- d) Data source of flight identity; entered by the pilot into either the transponder control panel or the FMS which passes the data to the transponder.
- e) Capability to operate transponders on 1090MHZ extended squitter.
- f) FMS with area navigation capability.
- g) Stand alone sensor-GNSS receiver with RAIM capability (TSO C-129,C-145, or C-146) compliant.

19.8 Separation Minima Based on ADS-B

Horizontal separation minima based on ADS-B shall not be less than:

Enroute (out side TMAS)-10 NM.

Within the Addis Ababa TMA-5NM.

Distance based wake turbulence separation minima shall be applied to aircraft being provided with ATS surveillance service in the approach and departure phases.

19.9 Operation of ADS-B Transmitters in an Emergency

To indicate that it is in a state of emergency or to transmit other urgent information, an aircraft equipped with ADS-B shall operate the emergency and/or urgency mode as follows.

Emergency

Communication failure

Unlawful interference

Minimum fuel; and/or Medical

19.10 Flight Planning

Aircraft intending to operate within the ADS-B airspace are required to file their flight plan in accordance with the new ICAO flight plan format.

Accordingly, flight plan item-7 (flight identification shall be entered correctly by the

pilot into the transponder. This is done either directly or through the flight management system depending on the aircraft integration correlated to the unique ICAO 24-bit aircraft identifier.

In addition, item 10 and 18 of the ICAO flight plan shall also be entered with the correct coding.

ENR 1.7 ALTIMETER SETTING PROCEDURES**1. Introduction**

The altimeter setting procedures in use generally conform to those contained in the ICAO DOC 8168-OPS/611 and are given in full below.

Transition altitudes are given on instrument approach charts.

QNH reports and temperature information for use in determining adequate terrain clearance is provided in MET broadcasts and is available on request from air traffic services units. QNH values are given in HPA however, they will be provided in tenths on request, for landing.

Area control center, approach control offices or aerodrome control towers shall establish the transition level to be used in the vicinity of the relevant aerodrome(s) for the appropriate period of time on the basis of QNH reports.

The transition level shall be passed to aircraft in the approach and landing clearances at aerodromes where transition altitudes are established.

The transition level shall be the lowest flight level available for use above the transition altitude established for the aerodrome concerned.

2. Basic altimeter setting procedures**2.1 General**

2.1.1 A transition altitude is specified for Addis Ababa and Dire Dawa, Bahir Dar, Jimma,

Gambella, Mekelle , Gonder & Arba Minch aerodromes. No transition altitude is less than 450 meters (1500 feet) above an aerodrome elevation.

- 2.1.2 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 altitudes when descending, and in terms of flight levels when ascending.
- 2.1.3 Flight level zero is located at the atmospheric pressure level of 1013.2 HPS (29.92 inches). Consecutive flight levels are separated by a pressure interval corresponding to 500 feet (152.4 meters) in the Standard Atmosphere.

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

Altimeter indication

<i>Flight level number</i>	<i>feet</i>	<i>Meters</i>
10	1 000	300
15	1 500	450
20	2 000	650
50	5 000	1 500
100	10 000	3 050
150	15 000	4 550
200	20 000	6 100

Note: The table of cursing levels in Appendix 3 of Annex 2 will be fully applicable within the Addis Ababa FIR.

2.2 Take off and climb

- 2.2.1 A QNH altimeter setting is made available to an aircraft in taxi clearance prior to take -off.

- 2.2.2 Vertical position 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.

2.3 ***Vertical separation en-route***

- 2.3.1 Vertical separation during en-route flight shall be expressed in terms of flight levels at all times during an IFR flight and at night.

2.3.2 When complying with the cruising levels in Appendix 3 of Annex 2 an aircraft shall be flown at flight levels corresponding to the magnetic tracks shown in the following table.

<i>Magnetic tracks</i>					
	000° to	179°	180° to	359°	
	<i>IFR</i>	<i>VFR</i>	<i>IFR</i>	<i>VFR</i>	
<i>Flight level</i>	10		20		
30	35		40	45	
50	55		60	65	
etc.	etc.		etc.	etc.	

2.4 ***Approach and landing***

- 2.4.1 A QNH altimeter setting is made available in approach clearances and in clearances to enter the traffic circuit.
- 2.4.2 QFE altimeter settings are provided on request.
- 2.4.3 Vertical positioning of aircraft during approach is controlled by reference to

flight levels until reaching the transition level below which vertical positioning is controlled by reference to altitudes.

2.5 ***Missed approach***

The relevant portions of 2.1.2, 2.2 and 2.4 shall be applied to the case of missed approach.

ENR 1.7-4 Altimeter setting regions

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Determination of corresponding transition levels for given transition altitudes and given range of QNH values

Transition Altitudes(TA) In Feet	QNH 942.2 to 959.4 Transition Levels(TL)	959.5 to 977.1	977.2 to 995	995.1 to 1013.2	1013.3 to 1031.6	1031.7 to 1050.3
1500	50	45	40	35	30	25
2000	55	50	45	40	35	30
2500	60	55	50	45	40	35
3000	65	60	55	50	45	40
3500	70	65	60	55	50	45
4000	75	70	65	60	55	50
4500	80	75	70	65	60	55
5000	85	80	75	70	65	60
5500	90	85	80	75	70	65
6000	95	90	85	80	75	70
6500	100	95	90	85	80	75
7000	105	100	95	90	85	80
7500	110	105	100	95	90	85
8000	115	110	105	100	95	90
8500	120	115	110	105	100	95
9000	125	120	115	110	105	100
9500	130	125	120	115	110	105
10000	135	130	125	120	115	110
10500	140	135	130	125	120	115
11000	145	140	135	130	125	120
11500	150	145	140	135	130	125
12000	155	150	145	140	135	130
12500	160	155	150	145	140	135
13000	165	160	155	150	145	140
13500	170	165	160	155	150	145
14000	175	170	165	160	155	150
14500	180	175	170	165	160	155
15000	185	180	175	170	165	160
15500	190	185	180	175	170	165
16000	195	190	185	180	175	170
16500	200	195	190	185	180	175
17000	205	200	195	190	185	180
17500	210	205	200	195	190	185

Note 1:- A transition layer of 1500ft has been added to corresponding flight levels to obtain the above transition levels.

Note 2:- For a given QNH of 1027 hectopascals and a transition altitude of 11500ft, for example, the transition level is flight level 130

2.4 Position Reporting Procedures

2.4.1 On routes defined by designated significant points, position reports shall be made when over, or as soon as possible after passing each designated compulsory reporting point.

Additional reports over other points may be requested by the Air Traffic Services Unit Concerned when so required for air traffic services purpose.

ENR1.8 Regional supplementary procedures (DOC 7030)

No differences exist between national regulations and the regional supplementary procedures (7030). Refer to GEN 1.7-2

ENR 1.9 Altimeter setting regions

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ENR 1.10 FLIGHT PLANNING**1. Procedures for the submission of a flight plan**

1.1 A flight plan shall be submitted to ATC by the pilot-in-command or the operator in respect of the following flights:-

- a) flights on Airways, and all other controlled air spaces whether IFR or VFR,
- b) Any flight or portion thereof to be provided with air traffic control service.
- c) any flight within or into designated areas, or along designated routes to facilitate co-ordination with appropriate military units or with air traffic services units in adjacent states in order to avoid the possible need for interception for the purpose of identification.
- d) Any flight across international borders.

Time of Submission

- a) The flight plan shall be submitted by the pilot-in-command or the operator at least 30 minutes before departure (the estimated off-block time) to the nearest ATC unit.
- b) In the event of a delay of thirty (30) minutes in excess of the estimated off-block time, the flight plan should be amended or a new flight plan submitted and the old flight plan canceled, whichever is applicable.
- c) A flight plan submitted in flight on HF RTF shall be submitted at least 20 minutes (or if on VHF RTF at least 10 minutes) prior to the intended point of entry into a control zone or control area.

Place of submission

- a) Flight plans shall be submitted at Addis Ababa/Bole Int'l and Dire Dawa international airports, or at ATS unit of the aerodrome of departure.
- b) In the absence of such unit at the aerodrome of departure, a flight plan shall be submitted by telephone or by any communication means available to the nearest ATS unit.
- c) All scheduled aircraft and aircraft which have obtained prior clearance for landing and over flight within the ADDIS ABABA FIR including on UA/A727 should at all times submit their flight plans to HAAAZQZX prior to entering Ethiopian Airspace.

Contents and Form of Flight Plan

- a) The pilot-in-command or the operator shall use the ICAO flight plan form except for those flights which are repetitive and which are in the Repetitive Flight Plan (RPL) system.
- b) The pilot-in-command is required to state the total number of persons on board (POB - i.e. passengers plus crew) in the flight plan.

Adherence to ATS route structure

A pilot in-command may change from IFR flight plan to a VFR flight plan by reporting "CANCELLED MY IFR FLIGHT" when weather conditions indicate that the remainder of the flight can be conducted under VFR.

ATC will acknowledge, " IFR flight canceled at..... (time)".

2. Repetitive Flight Plan System

General

The procedures concerning the use of Repetitive Flight Plans (RPL) conform to ICAO DOC 7030 and the PANS-RAC, 12th edition. RPL lists relating to flights out of and over flying the Addis Ababa FIR shall be submitted at least two weeks in advance, in duplicate, to the following address:

By Airmail : Authority Information Service Directorate Ethiopia	Civil Aviation Aeronautical P.O. Box 978 Addis Ababa, By Tele fax : 251-011-6650281 E-mail : caa.airnav@ethionet.et Via AFS: HAAAYGYX
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RPL lists shall be replaced in their entirety by new lists prior to the introduction of the summer and winter schedules. RPL will not be valid for any flight unless all ATS authorities concerned with the flight have agreed to accept it.

Incidental changes and cancellations of RPL

Incidental changes to and cancellations of RPL relating to departures from Ethiopian aerodromes shall be notified as early as possible as and not later than 30 minutes before departure from Addis Ababa on TEL251-011 6650519 Permanent changes to RPL require the submission of a new RPL, so as to reach the AIS office at least 7 days prior to the change becoming effective.

Delay

When a specific flight is likely to encounter a delay of 30 minutes or more in excess of the departure time stated in the RPL, the ATS unit serving the departure aerodrome shall be notified immediately. Delays relating to departures from aerodromes shall be notified to Addis Ababa ACC/FIC TEL: 251-011 6650519 and the procedures mentioned in item below shall be applied.

Note: - Failure to comply with these procedures may result in the automatic cancellation of the RPL for that specific flight at one or more of the ATS units concerned.

AIP ETHIOPIA**3. The Flight Plan Form**

3.1 Each Flight Plan form is filled in triplicate. The top sheet will be retained by the ATS Unit concerned. The second sheet is used for immediate transmission over the telecommunications network. The third sheet is for retention by the pilot.

3.2 The Flight Plan form is illustrated on page ENR 1.10.20

Note: The term "aerodrome" when used in the Flight Plan is intended to cover also sites other than aerodromes which may be used by certain types of aircraft e.g. helicopters or balloons.

3.3 Instructions for Completing the Flight Plan Form:-

3.3.1 It is essential that care should be exercised in completing the Flight Plan form. Block letters should be used wherever possible to ensure clear reproduction of the information.

Detailed instructions for using the component parts of the Flight Plan are detailed hereunder:

- a) Use block letters
- b) All times are in UTC
- c) Pilot/Representative to complete Item 7 to 18 indicated hereunder unless ATS prescribes otherwise.
- d) Item 19 should be completed unless arrangements have been made for this information to be available to ATS if needed for SAR purposes.

Note: Item numbers on the form are not consecutive, as they correspond to field type numbers in ATS messages.

**ITEM 7: AIRCRAFT IDENTIFICATION
(MAXIMUM 7 CHARACTERS)**

INSERT one of the following aircraft identifications, not exceeding 7 alphanumeric characters and without hyphens or symbols:

- a) The ICAO designator for the aircraft operating agency followed by the flight identification (e.g. ETH500, NGA213, KQA401) when in radiotelephony the call sign to be used by the aircraft will consist of the ICAO telephony designator for the operating agency followed by the flight identification (e.g. ETH500, NIGERIA 213, KQA401);
- or b) The nationality or common mark and registration mark of the aircraft (e.g. ETALL, 4XBCD, N2567GA), when:
 - 1) in radiotelephony the call sign to be used by the aircraft will consist of this identification alone (e.g. ETALH), or preceded by the ICAO telephony designator for the aircraft operating agency (e.g. ETHIOPIAN ETALH);
 - 2) the aircraft is not equipped with radio.

Note 1: Standards for nationality, common and registration marks to be used are contained in Annex 7, Chapter 2.

Note 2: Provisions for the use of radiotelephony call signs are contained in Annex 10, Volume II, Chapter 5. ICAO designators and telephony designators for aircraft operating agencies are contained in Doc 8585 — Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services.

**ITEM 8: FLIGHT RULES AND TYPE OF FLIGHT
(ONE OR TWO CHARACTERS).****Flight Rules**

INSERT one of the following letters to denote the category of flight rules with which the pilot intends to comply:

I if it is intended that the entire flight will be operated under the IFR

V if it is intended that the entire flight will be operated under the VFR

Y if the flight initially will be operated under the IFR, followed by one or more subsequent changes of flight rules or

Z if the flight initially will be operated under the VFR, followed by one or more subsequent changes of flight rules

Specify in Item 15 the point or points at which a change of flight rules is planned.

Type of flight

INSERT one of the following letters to denote the type of flight when so required by the appropriate ATS authority:

S if scheduled air service

N if non-scheduled air transport operation

G if general aviation

M if military

X if other than any of the defined categories above.

Specify status of a flight following the indicator STS in Item 18, or when necessary to denote other reasons for specific handling by ATS, indicate the reason following the indicator RMK in Item 18.

**ITEM 9: NUMBER AND TYPE OF AIRCRAFT
AND WAKE TURBULENCE CATEGORY**

Number of aircraft (1 or 2 characters)

INSERT the number of aircraft, if more than one.

Type of aircraft (2 to 4 characters)

INSERT the appropriate designator as specified in ICAO Doc 8643, *Aircraft Type Designators*,

OR, if no such designator has been assigned, or in case of formation flights comprising more than one type,

INSERT ZZZZ, and *SPECIFY* in Item 18, the (numbers and) type(s) of aircraft preceded by TYP/.

Wake turbulence category (1 character)

INSERT an oblique stroke followed by one of the following letters to indicate the wake turbulence category of the aircraft:

H- HEAVY, to indicate an aircraft type with a maximum certificated take-off mass of 136 000 kg or more;

M- MEDIUM, to indicate an aircraft type with a maximum certificated take-off mass of less than 136 000 kg but more than 7 000 kg;

L- LIGHT, to indicate an aircraft type with a maximum certificated take-off mass of 7 000 kg or less.

ITEM 10: EQUIPMENT**Item 10a (Radio communication, navigation and approach aid equipment and capabilities):**

INSERT one letter as follows:

N if no COM/NAV/approach aid equipment for the route to be flown is carried or the equipment is unserviceable,

INSERT one or more of the following letters to indicate the serviceable COM/NAV/approach aid equipment and capabilities available:

A	GBAS landing system		GBAS landing system
B	LPV (APV with SBAS)	K	MLS
C	LORAN C	L	ILS
D	DME	M1	ATC RTF SATCOM (INMARSAT)
E1	FMC WPR ACARS	M2	ATC RTF (MTSAT)
E2	D-FIS ACARS	M3	ATC RTF (Iridium)
E3	PDC ACARS	O	VOR
F	ADF	P1 – P9	Reserved for RCP
G	GNSS (See Note 2)		
H	HF RTF	R	PBN approved (see Note 4)
I	Inertial Navigation	T	TACAN
J1	CPDLC ATN VDL Mode 2 (See Note 3)	U	UHF RTF
J2	CPDLC FANS 1/A HFDL	V	VHF RTF
J3	CPDLC FANS 1/A VDL Mode 4	W	RVSM approved
J4	CPDLC FANS 1/A VDL Mode 2	X	MNPS approved
J5	CPDLC FANS 1/A SATCOM (INMARSAT)	Y	VHF with 8.33 kHz channel spacing capability
J6	CPDLC FANS 1/A SATCOM (MTSAT)	Z	Other equipment carried or other capabilities (see Note 5)
J7	CPDLC FANS 1/A SATCOM (Iridium)		

*OR*S if standard COM/NAV/approach aid equipment for the route to be flown is carried and serviceable
(see Note 1), AND/OR

Any alphanumeric characters not indicated above are reserved

Note 1 If the letter S is used, standard equipment is considered to be VHF RTF, VOR and ILS, unless another combination is prescribed by the appropriate ATS authority.

Note 2. If the letter G is used, the types of external GNSS augmentation, if any, are specified in Item 18 following the indicator NAV/and separated by a space.

Note 3. See RTCA/EUROCAE Interoperability Requirements Standard For ATN Baseline 1 (ATN B1 INTEROP Standard - DO-280B/ED-110B) for data link services air traffic control clearance and information/air traffic control communications management/air traffic control microphone check.

Note 4. If the letter R is used, the performance based navigation levels that can be met are

specified in Item 18 following the indicator PBN/.

Guidance material on the application of performance based navigation to a specific route segment, route or area is contained in the Performance-Based Navigation Manual (Doc 9613).

Note 5 If the letter Z is used, specify in Item 18 the other equipment carried or other capabilities, preceded by COM/, NAV/ and/or DAT, as appropriate.

Note 6 Information on navigation capability is provided to ATC for clearance and routing purposes.

Item 10b (Surveillance equipment and capabilities):

INSERT N if no surveillance equipment for the route to be flown is carried or the equipment is unserviceable

OR

INSERT one or more of the following descriptors, to a maximum of 20 characters, to describe the serviceable surveillance equipment and/or capabilities on board:

SSR Modes A and C

A Transponder — Mode A (4 digits —4 096 codes)

C Transponder — Mode A (4 digits —4 096 codes) and Mode C

SSR Mode S

E Transponder — Mode S, including aircraft identification, pressure-altitude and extended squatter (ADS-B) capability

H Transponder — Mode S, including aircraft identification, pressure-altitude and enhanced surveillance capability

I Transponder — Mode S, including aircraft identification, but no pressure-altitude capability

L Transponder — Mode S, including aircraft identification, pressure-altitude, extended squitter (ADS-B) and enhanced surveillance capability

P Transponder — Mode S, including pressure altitude, but no aircraft identification capability

S Transponder — Mode S, including both pressure altitude and aircraft identification capability

X Transponder — Mode S with neither aircraft identification nor pressure-altitude capability

Note: - Enhanced surveillance capability is the ability of the aircraft to down-link aircraft derived data via a Mode S transponder.

ADS-B

B1 ADS-B with dedicated 1090 MHz
 ADS-B "out" capability
 B2 ADS-B with dedicated 1090 MHz
 ADS-B "out" and "in" capability
 U1 ADS-B "out" capability using UAT
 U2 ADS-B "out" and "in" capability using UAT
 V1 ADS-B "out" capability using VDL Mode 4
 V2 ADS-B "out" and "in" capability using VDL Mode 4

ADS-C

D1 ADS-C with FANS 1/A capabilities

G1 ADS-C with ATN capabilities

Alphanumeric characters not indicated above are reserved.

Example: ADE3RV/HB2U2V2G1

Note: - Additional surveillance application should be listed in Item 18 following the indicator SUR/

ITEM 13: DEPARTURE AERODROME AND TIME - (8 CHARACTERS)

INSERT the ICAO four-letter location indicator of the departure aerodrome as specified in Doc 7910, *Location Indicators*,

OR, if no location indicator has been assigned, *INSERT ZZZZ and SPECIFY*, in Item 18, the name and location of the aerodrome preceded by DEP/, *OR*, the first point of the route or the marker radio beacon preceded by DEP/..., if the aircraft has not taken off from the aerodrome,

OR, if the flight plan is received from an aircraft in flight,

INSERT AFIL, and *SPECIFY*, in Item 18, the ICAO four-letter location indicator of the location of the ATS unit from which supplementary flight plan data can be obtained, preceded by DEP/.

THEN, WITHOUT A SPACE,

INSERT for a flight plan submitted before departure, the estimated off-block time (EOBT), *OR*, for a flight plan received from an aircraft in flight, the actual or estimated time over the first point of the route to which the flight plan applies.

ITEM 15: ROUTE

INSERT *the first cruising speed as in (a) and the first cruising level as in (b), without a space between them*.

(a) Cruising speed (maximum 5 characters)

INSERT the True airspeed for the first or the whole cruising portion of the flight, in terms of: Kilometers per hour, expressed as K followed by 4 figures (e.g. K0830), or Knots, expressed as N followed by 4 figures (e.g. N0485), or True Mach number, when so prescribed by the appropriate ATS authority, to the nearest hundredth of unit Mach, expressed as M followed by 3 figures (e.g. M082).

(b) Cruising level (maximum 5 characters)

INSERT the planned cruising level for the first or the whole portion of the route to be flown, in terms of:

Flight level, expressed as F followed by 3 figures (e.g. F085; F330), or * Standard metric level in tens of meters, expressed as S followed by 4 figures (e.g. S1130), or Altitude in tens of meters, expressed as M followed by 4 figures (e.g. M0840), or for uncontrolled VFR flights, the letters VFR. Altitude in hundreds of feet, expressed as A followed by 3 figures (e.g. A045; A100), or

* When so prescribed by the appropriate ATS authorities.

(c) Route (including changes of speed, level and/or flight rules) Flights along designated ATS routes

INSERT, if the departure aerodrome is located on or connected to the ATS route, the designator of the first ATS route, OR, if the departure aerodrome is not on or connected to the ATS route, the letters DCT followed by the point of joining the first ATS route, followed by the designator of the ATS route.

THEN

INSERT each point at which either a change of speed and/or level is planned to commence, or a change of ATS route, and/or a change of flight rules is planned, Note:- When a transition is planned between a lower and upper ATS route and the routes are oriented in the same direction, the point of transition need not be inserted.

FOLLOWED IN EACH CASE

by the designator of the next ATS route segment, even if the same as the previous one,

OR by DCT, if the flight to the next point will be outside a designated route, unless both points are defined by geographical coordinates.

Flights outside designated ATS routes

INSERT points normally not more than 30 minutes flying time or 370 km (200 NM) apart, including each point at which a change of speed or level, a change of track, or a change of flight rules is planned.

OR, when required by appropriate ATS authority (ies),

DEFINE the track of flights operating predominantly in an east-west direction between 70°N and 70°S by reference to significant points formed by the intersections of half or whole degrees of latitude with meridians spaced at intervals of 10 degrees of longitude. For flights operating in areas outside those latitudes the tracks shall be defined by significant points formed by the intersection of parallels of latitude with meridians normally spaced at 20 degrees of longitude. The distance between significant points shall, as far as possible, not exceed one hour's flight time. Additional significant points shall be established as deemed necessary. For flights operating predominantly in a North-south direction, define tracks by reference to significant points formed by the intersection of whole degrees of longitude with specified parallels of latitude which are spaced at 5 degrees.

INSERT DCT between successive points unless both points are defined by geographical coordinates or by bearing and distance.

USE ONLY the conventions in (1) to (5) below and SEPARATE each sub-item by a space.

(1) ATS route (2 to 7 characters)

The coded designator assigned to the route or route segment including, where appropriate the coded designator assigned to the standard departure or arrival route (e.g. BCN1, Bl, R14, UB10, KODAP2A).

Note: - Provisions for the application of route designators are contained in Annex 11, Appendix 1.

(2) Significant point (2 to 11 characters)

The coded designator (2 to 5 characters) assigned to the point (e.g. LN, MAY, HADDY), or, if no coded designator has been assigned, one of the following ways:

— Degrees only (7 characters):

2 figures describing latitude in degrees, followed by "N" (North) or "S" (South), followed by 3 figures describing longitude in degrees, followed by "E" (East) or "W" (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 46N078W.

THEN, following the arrow, INSERT the route description as in (c).

— Degrees and minutes (11 characters):

4 figures describing latitude in degrees and tens and units of minutes followed by "N" (North) or "S" (South), followed by 5 figures describing longitude in degrees and tens and units of minutes, followed by "E" (East) or "W" (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 4620N07805W.

— Bearing and distance from a reference point:

The identification of the reference point, followed by the bearing from the point in the form of 3 figures giving degrees magnetic, followed by the distance from the point in the form of 3 figures expressing nautical miles. In areas of high latitude where it is determined by the appropriate authority that reference to degrees magnetic is impractical, degrees true may be used. Make up the correct number of figures, where necessary, by insertion of zeros — e.g. a point 180° magnetic at a distance of 40 nautical

miles from VOR "DUB" should be expressed as DUB180040.

(3) Change of speed or level (maximum 21 characters)

The point at which a change of speed (5% TAS or 0.01 Mach or more) or a change of level is planned to commence, expressed exactly as in (2) above, followed by an oblique stroke and both the cruising speed and the cruising level, expressed exactly as in (a) and (b) above, without a space between them, even when only one of these quantities will be changed.

Examples:

LN/N0284A045

MAY/N0305F180

HADDY/N0420F330

4602N07805W/N0500F350

46N078W/M082F330

DUB180040/N0350M0840

(4) Change of flight rules (maximum 3 characters)

The point at which the change of flight rules is planned, expressed exactly as in (2) or (3) above as appropriate, followed by a space and one of the following:

VFR if from IFR to VFR

IFR if from VFR to IFR

Examples: LN VFR

LN/N0284A050 IFR

(5) Cruise climb (maximum 28 characters)

The letter C followed by an oblique stroke; THEN the point at which cruise climb is planned to start, expressed exactly as in (2) above, followed by an oblique stroke; THEN the speed to be maintained during cruise climb, expressed exactly as in (a) above, followed by the two levels defining the layer to be occupied during cruise climb, each level expressed exactly as in (b) above, or the level above which cruise climb is planned followed by the letters PLUS, without a space between them.

Examples:

C/48N050W/M082F290F350

C/48N050W/M082F290PLUS

C/52N050W/M220F580F620.

Item 16: Destination Aerodrome and Total Estimated Elapse Time, Alternate aerodrome(s)

Destination aerodrome and total estimated elapsed time (8 characters)

INSERT the ICAO four-letter location indicator of the destination aerodrome as specified in Doc 7910, *Location Indicators*, OR, if no location indicator has been assigned,

INSERT ZZZZ and SPECIFY in Item 18 the name and location of the aerodrome, preceded by DEST/.

THEN WITHOUT A SPACE

INSERT the total estimated elapsed time.

Note: - For a flight plan received from an aircraft in flight, the total estimated elapsed time is the estimated time from the first point of the route to which the flight plan applies to the termination point of the flight plan.

Destination alternate aerodrome(s)

INSERT the ICAO four-letter location indicator(s) of not more than two destination alternate aerodromes, as

specified in Doc 7910, *Location Indicators*, separated by a space, OR, if no location indicator has been assigned to the destination alternate aerodrome(s),

INSERT ZZZZ and SPECIFY in Item 18 the name and location of the destination alternate aerodrome(s), preceded by ALTN/.

ITEM 18: OTHER INFORMATION

Note: Use of indicators not included under this item may result in data being rejected, processed incorrectly or lost.

Hyphens or oblique strokes should only be used as prescribed below.

INSERT 0 (zero) if no other information, OR, any other necessary information in the sequence shown hereunder, in the form of the appropriate indicator selected from those defined hereunder followed by an oblique stroke and the information to be recorded:

STS/ Reason for special handling by ATS, e.g. a search and rescue mission, as follows:

ALTRV: for a flight operated in accordance with an altitude reservation;

ATFMX: for a flight approved for exemption from ATFM measures by the appropriate ATS authority;

FFR: fire-fighting;

FLTCK: flight check for calibration of nav aids;
 HAZMAT: for a flight carrying hazardous material;
 HEAD: a flight with Head of State status;
 HOSP: for a medical flight declared by medical authorities;
 HUM: for a flight operating on a humanitarian mission;
 MARSA: for a flight for which a military entity assumes responsibility for separation of military aircraft;
 MEDEVAC: for a life critical medical emergency evacuation;
 NONRVSM: for a non-RVSM capable flight intending to operate in RVSM airspace;
 SAR: for a flight engaged in a search and rescue mission; and
 STATE: for a flight engaged in military, customs or police services.

Other reasons for special handling by ATS shall be denoted under the designator RMK/.PBN/ Indication of RNAV and/or RNP capabilities. Include as many of the descriptors below, as apply to the flight, up to a maximum of 8 entries, i.e. a total of not more than 16 characters.

RNAV SPECIFICATIONS

A1	RNAV 10 (RNP 10)
B1	RNAV 5 all permitted sensors
B2	RNAV 5 GNSS
B3	RNAV 5 DME/DME
B4	RNAV 5 VOR/DME
B5	RNAV 5 INS or IRS
C1	RNAV 2 all permitted sensors
C2	RNAV 2 GNSS
C3	RNAV 2 DME/DME
C4	RNAV 2 DME/DME/IRU
D1	RNAV 1 all permitted sensors
D2	RNAV 1 GNSS
D3	RNAV 1 DME/DME
D4	RNAV 1 DME/DME/IRU

RNP SPECIFICATIONS

L1	RNP 4
O1	Basic RNP 1 all permitted sensors
O2	Basic RNP 1 GNSS
O3	Basic RNP 1 DME/DME
O4	Basic RNP 1 DME/DME/IRU
S1	RNP APCH
S2	RNP APCH with BARO-VNAV
T1	RNP AR APCH with RF (special authorization required)
T2 RNP	AR APCH without RF (special authorization required)

Combinations of alphanumeric characters not indicated above are reserved.

NAV/ Significant data related to navigation equipment, other than specified in PBN/, as required by the appropriate ATS authority. Indicate GNSS augmentation under this indicator, with a space between two or more methods of augmentation, e.g. NAV/GBAS SBAS.

COM/ Indicate communications applications or capabilities not specified in Item 10a.

DAT/ Indicate data applications or capabilities not specified in 10a.

SUR/ Include surveillance applications or capabilities not specified in Item 10b.

DEP/ Name and location of departure aerodrome, if ZZZZ is inserted in Item 13, or the ATS unit from which supplementary flight plan data can be obtained, if AFIL is inserted in Item 13. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location as follows:

With 4 figures describing latitude in degrees and tens and units of minutes followed by "N" (North) or "S" (South), followed by 5 figures describing longitude in degrees and tens and units of minutes, followed by "E" (East) or "W" (West). Make up the correct number of figures, where necessary, by insertion of zeros, e.g. 4620N07805W (11characters).

OR, Bearing and distance from the nearest significant point, as follows:

The identification of the significant point followed by the bearing from the point in the form of 3 figures giving degrees magnetic, followed by the distance from the point in the form of 3 figures expressing nautical miles. In areas of high latitude where it is determined by the appropriate authority that reference to degrees magnetic is impractical, degrees true may be used. Make up the correct

number of figures, where necessary, by insertion of zeros,

e.g. a point of 180° magnetic at a distance of 40 nautical miles from VOR "LV" should be expressed as LV180040.

The first point of the route (name or LAT/LONG) or the marker radio beacon, if the aircraft has not taken off from an aerodrome.

DEST/ Name and location of destination aerodrome, if ZZZZ is inserted in Item 16. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described under DEP/ above.

DOF/ The date of flight departure in a six figure format (YYMMDD, where YY equals the year, MM equals the month and DD equals the day).

REG/ The nationality or common mark and registration mark of the aircraft, if different from the aircraft identification in Item 7.

EET/ Significant points or FIR boundary designators and accumulated estimated elapsed times from take-off to such points or FIR boundaries, when so prescribed on the basis of regional air navigation agreements, or by the appropriate ATS authority.

Examples: EET/CAP0745 XYZ0830

EET/EINN0204

SEL/ SELCAL Code, for aircraft so equipped.

TYP/ Type(s) of aircraft proceeded if necessary without a space by number(s) of aircraft and separated by one space, if ZZZZ is inserted in Item 9.

Example: TYP/2F15 5F5 3B2

CODE/ Aircraft address (expressed in the form of an alphanumerical code of six hexadecimal characters) when required by the appropriate ATS authority. Example: "F00001" is the lowest aircraft address contained in the specific block administered by ICAO.

RVR/ flight. The minimum RVR requirement of the

Note. — This provision is detailed in the Africa- Indian Ocean Regional Supplementary Procedures (AFI SUPPs, Doc 7030), Chapter 2.

DLE/ Enroute delay or holding, insert the significant point(s) on the route where a delay is planned to occur, followed by the length of delay using four figure time in hours and minutes (hhmm).

Example: DLE/MDG0030

OPR/ ICAO designator or name of the aircraft operating agency, if different from the aircraft identification in item 7.

ORGN/ The originator's 8 letter AFTN address or other appropriate contact details, in cases where the originator of the flight plan may not be readily identified, as required by the appropriate ATS authority.

Note.: in some areas, flight plan reception centres may insert the ORGN/ identifier and originator's AFTN address automatically.

PER/ Aircraft performance data, indicated by a single letter as specified in the *Procedures for Air Navigation Services — Aircraft Operations* (PANSOPS, Doc 8168), Volume

I — Flight Procedures, if so prescribed by the appropriate ATS authority.

ALTN/ Name of destination alternate aerodrome(s), if ZZZZ is inserted in Item 16. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/ above.

RALT/ ICAO four letter indicator(s) for en-route alternate(s), as specified in Doc 7910, *Location Indicators*, or name(s) of en-route alternate aerodrome(s), if no indicator is allocated.

For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant point, as described in DEP/ above.

TALT/ ICAO four letter indicator(s) for take-off alternate, as specified in Doc 7910, *Location Indicators*, or name of take-off alternate aerodrome, if no indicator is allocated. For aerodromes not listed in the relevant Aeronautical Information Publication, indicate location in LAT/LONG or bearing and distance from the nearest significant Point, as described in DEP/ above.

RIF/ The route details to the revised destination aerodrome, following by the ICAO four-letter location indicator of the aerodrome. The revised route is subject to reclearance in flight.

Examples: RIF/DTA HEC KLAX RIF/ESP G94 CLA YPPH

RMK/ Any other plain language remarks when required by the appropriate ATS authority or deemed necessary.

RFP/ Q followed by a digit to indicate the sequence of the replacement flight plan being submitted.

Note: — this provision is detailed in the Africa- Indian Ocean Regional Supplementary Procedures (AFI SUPPs, Doc 7030), Chapter 2.

ITEM 19: SUPPLEMENTARY INFORMATION

Endurance

After E/ INSERT a 4-figure group giving the fuel endurance in hours and minutes.

Persons on board

After P/ INSERT the total number of persons (passengers and crew) on board, when required by the appropriate ATS authority. INSERT TBN (to be notified) if the total number of persons is not known at the time of filing.

R/ (RADIO) cross out U if UHF on frequency 243.0 MHz is not available. CROSS OUT V if VHF on frequency 121.5 MHz is not available. CROSS OUT E if emergency locator transmitter (ELT) is not available.

S/ (SURVIVAL EQUIPMENT) cross out all indicators if survival equipment is not carried. CROSS OUT P if polar survival equipment is not carried.

CROSS OUT D if desert survival equipment is not carried. CROSS OUT M if maritime survival

equipment is not carried. CROSS OUT J if jungle survival equipment is not carried.

J/ (JACKETS) CROSS OUT all indicators if life jackets are not carried. CROSS OUT L if life jackets are not equipped with lights. CROSS OUT F if life jackets are not equipped with fluorescein. CROSS OUT U or V or both as in R/ above to indicate radio capability of jackets, if any.

D/ (DINGHIES) (NUMBER) CROSS OUT indicators D and C if no dinghies are carried, or

INSERT number of dinghies carried;

and

(CAPACITY) INSERT total capacity, in persons, of all dinghies carried; and

(COVER) CROSS OUT indicator C if dinghies are not covered; and

(COLOUR) INSERT colour of dinghies if carried.

A/ (AIRCRAFT COLOUR AND MARKINGS) INSERT colour of aircraft and significant markings.

N/ (REMARKS) CROSS OUT indicator N if no remarks, or INDICATE any other survival equipment carried and any other remarks regarding survival equipment.

C/ (PILOT) INSERT name of pilot-in command.

FILED BY INSERT the name of the unit, agency or person filing the flight plan.

Indicate acceptance of the flight plan by giving the name and signature of the ATM personnel.

6. REPETITIVE FLIGHT PLAN

6.1 A Repetitive Flight Plan is a Flight Plan related to frequently recurring regularly operated IFR flight with identical basic features. It is submitted by an operator for storage and repetitive use by ATS Units.

Whilst the repetitive Flight Plans do not fulfill the functions of a normal Flight Plan, they do offer operators and ATS units considerable advantages in handling of Flight Plan information.

6.2 Instructions for the Completion of the Repetitive Flight Plan (RPL) Listing Form.

6.2.1 List only Flight Plans which will operate in accordance with IFR. (Flight rules I in FPL format).

It is assumed that all aircraft are operating as scheduled flights (Type of flights S in FPL format) otherwise notify in Q (Remarks).

It is assumed that all aircraft operating on RPLs are equipped with 4 096-code transponders with modes A and C. Otherwise notify in Q (Remarks)

List flight plans in alphabetical order of the location indicator of the departure aerodrome.

List Flight Plans for each departure aerodrome in chronological order of estimated off-block times.

Adhere closely to the data conventions as indicated for the Flight Plan Form unless otherwise specifically indicated in 6.5.

Insert all clock times in 4 figures UTC.

Insert all estimated elapsed times in 4 figures (hours and minutes).

Insert data on a separate line for each segment of operations with one or more stops; i.e. from any departure aerodrome to the next destination aerodrome even though

call sign or flight number is the same for multiple segments.

Clearly identify additions and deletions in accordance with Item H at 6.5. Subsequent listings shall list the corrected and added data, and deleted flight plans shall be omitted.

Number of pages by indicating number of page and total number of pages in submission.

Utilize more than one line for any RPL where the space provided for items O and Q on one line is not sufficient.

6.3 A flight shall be cancelled as follows:

1) Indicate a minus sign in item H followed by all other items of the cancelled flight.

2) Insert a subsequent entry denoted by a plus sign in Item H and the date of the last flight in item J, with all other items of the cancelled flight unchanged.

6.4 Modification to a flight shall be made as follows:

1) Carry out the cancellation as indicated in 6.3; and

2) Insert a third entry giving the new flight plan(s) with the appropriate items modified as necessary, including the new validity dates in items I and J.

Note: All entries related to the same flight will be inserted in succession in the order specified above.

6.5 Instructions for insertion of RPL data.

Complete Items A to Q as indicated hereunder:

i) ITEM A: OPERATOR

Insert name of operator

ii) ITEM B: ADDRESSEE(S)

Insert name of agency (ies) designated by States to administer RPLs for FIRs or areas of responsibility concerned with the route of flight.

- iii) ITEM C: DEPARTURE AERODRO-ME(S)
Insert Location indicator of departure aerodrome.
- iv) ITEM D: DATE
Insert on each page of submission, the date (year, month, day) in a 6-figure group that the listing was submitted.
- v) ITEM E: SERIAL NO.
Insert serial number of submission (2 numerics) indicating last two digits of year, a dash, and the sequential number of the submission for the year indicated (start with numeral 1 each New Year).
- vi) ITEM F: PAGE OF
Insert page number and total number of pages submitted.
- vii) ITEM G: SUPPLEMENTARY DATA
Insert name of contact where information normally provided under Item 19 of the FPL is kept readily available and can be supplied without delay.
- viii) ITEM H: ENTRY TYPE
Insert a minus sign (-) for each flight plan that is to be deleted from the listing.
Insert a plus sign (+) for each initial listing and, in the case of subsequent submissions, for each flight plan not listed in the previous submission.
- Note:** No information is required under these items for any flight plan which is unchanged from the previous submission.
- ix) ITEM I: VALID FROM
Insert first date (year, month, day) upon which the flight is scheduled to operate.

- x) ITEM J: VALID UNTIL
Insert last date (year, month day) upon which the flight is scheduled to operate as listed, or UFN if the duration is unknown.
- xi) ITEM K: DAYS OF OPERATION
Insert number corresponding to the day of the week in the appropriate column:
Monday=1 through Sunday =7
Insert 0 for each day of non-operation in the appropriate column.
- xii) ITEM L: AIRCRAFT IDENTIFICATION
Insert aircraft identification to be used for the flight.
- xiii) ITEM M: TYPE OF AIRCRAFT AND WAKE TURBULANCE CATEG-ORY (item 9 of the ICAO flight plan)
Insert appropriate ICAO designator as specified in ICAO Doc 8643 – Aircraft Type Designators.
Insert H, M, or L indicators as appropriate.
- H HEAVY to indicate an aircraft type with a maximum certificated take-off mass of 136,000 kg or more.
- M MEDIUM to indicate an aircraft type with a maximum certificated take-off mass of less than 136,000kg but more than 7,000 kg.
- L LIGHT to indicate an aircraft type with a maximum certificated take-off mass of 7,000 kg or less.
- xiv) ITEM N: DEPARTURE AERODROME AND TIME
Insert location indicator of departure aerodrome.

8. ATS Messages

8.1 Origination of Messages

8.1.1 The pilot is always responsible for the origination of ATS messages in the categories shown below, but at aerodromes on the AFTN, the ATS Unit concerned will carry out this duty on behalf of the pilot during its hours of service. The ATS Unit must, however, be provided by the pilot or his representative with information forming the basis of delay or cancellation messages.

8.1.2 At aerodromes not on the AFTN, it is the pilot's responsibility to originate the appropriate message and communicate to the nearest ATS/AIS unit who shall in turn disseminate it accordingly. This shall be via Radio or as stipulated in GEN 3.4.3.

8.2 Flight plan Messages

8.2.1 Filed flight plan messages shall be transmitted for all flights for which a flight plan has been submitted with the object of being provided with air traffic control service, flight information service or alerting service along part or the whole of the route of flight.

8.2.2 A filed flight plan message shall be originated and addressed as follows by the ATS/AIS unit serving the departure aerodrome or, when applicable, by the ATS/AIS unit receiving a flight plan from an aircraft in flight:

- a) A FPL message shall be sent to the ACC or flight information centre serving the control area or FIR within which the departure aerodrome is situated;
- b) Unless basic flight plan data are already available as a result of arrangements made for repetitive flight plans, an FPL message shall be sent to all centers in charge of each FIR or upper FIR along the route which are unable to process current data. In addition, an FPL message shall be sent to the aerodrome control tower at the destination aerodrome. If so required, an FPL message shall also be sent to flow management

centers responsible for ATS units along the route;

- c) When a potential re clearance in flight (RIF) request is indicated in the flight plan, the FPL message shall be sent to the additional centers concerned and to the aerodrome control tower of the revised destination aerodrome;
- d) Where it has been agreed to use CPL messages but where information is required for early planning of traffic flow, an FPL message shall be transmitted to the ACCs concerned;
- e) for a flight along routes where flight information service and alerting service only are provided, a FPL message shall be addressed to the centre in charge of each FIR or upper FIR along the route and to the aerodrome control tower at the destination aerodrome.

8.2.3 In the case of a flight through intermediate stops, where flight plans for each stage of the flight are filed at the first departure aerodrome, the following procedure shall be applied:

- a) The ATS/AIS unit at the first departure aerodrome shall:
 - i) Transmit an FPL message for the first stage of flight in accordance with 8.2.2;
 - ii) Transmit a separate FPL message for each subsequent stage of flight, addressed to the air traffic services reporting office at the appropriate subsequent departure aerodrome;
- b) The air traffic services reporting office at each subsequent departure aerodrome shall take action on receipt of the FPL message as if the flight plan has been filed locally.

8.2.4 FPL messages shall be transmitted immediately after the filing of the flight plan. However, if a flight plan is filed more than 24 hours in advance of the estimated off-block time of the flight to which it refers, the date of flight departure shall be inserted in Item 18 of the flight plan.

8.2.5 Flight plans shall not be submitted more than 120 hours before the estimated off block time of a flight.

8.3 Departure Messages

8.3.1 If a flight plan message has been sent, whether voluntarily or by regulation, a departure message must be sent as soon as the aircraft has taken off. It should be sent to the same addressees as the flight plan message.

8.3.2 Departure messages contain the following information in the order shown:

- a) Type of message (DEP)
- b) Radio call sign or aircraft identification as shown in the flight plan.
- c) Departure aerodrome and time
- d) Destination aerodrome
- e) DOF where included in the filled Flight plan and "0" where DOF/or no other information is not included.

Example with DOF: (DEP-ETH802-Haab1015-EDDF-DOF/160020)

Example without DOF: (DEP-ETH802-Haab1015-EDDF)

8.3.3 When a departure message is sent instead of a flight plan message, it will also contain the aerodrome of departure and the aerodrome of first intended landing.

8.3.4 A departure message associated with a flight plan filed through intermediate stops should include the number of persons and the fuel on board under Item 19.

8.4 Delay Messages (DLA)

8.4.1 A DLA message shall be transmitted when the departure of an aircraft, for which basic flight plan data (FPL or RPL) has been sent, is delayed by more than 30 minutes after the estimated off-block time contained in the basic flight plan data.

8.4.2 However it should be noted that a flight plan in respect to an IFR flight is valid for one hour and two hours for a VFR flight. On

expiry of these times a new flight plan should be submitted.

8.4.3 Delay messages should contain the following information as shown in the flight plan:

- a) Type of Message (DLA)
- b) Radio call sign or aircraft identification as shown in the flight plan.
- c) Revised estimated time of departure, expressed as a four-figure group in UTC
- d) Destination aerodrome and time.
- e) DOF where included in the filled Flight plan and "0" where DOF/or no other information is not included.

Example with DOF : (DLA-ETH802-Haab1015-EDDF-DOF/160020)

Example without DOF: (DLA-ETH802-Haab1015-EDDF-O)

Note: For a Delay that spills over to the next day, i.e. delay over midnight, the modification message type (CHG) is used instead of DLA.(Ref 8.7 below)

8.5 Cancellation Message (CNL)

A flight plan cancellation (CNL) message shall be transmitted when a flight, for which basic flight plan data has been previously distributed, has been cancelled. The ATS/AIS unit serving the departure aerodrome shall transmit the CNL message to ATS units which have received basic flight plan data. A cancellation message contains the following information in the order shown:

- a) Type of message (CNL).
- b) Radio call sign or aircraft identification as shown in the flight plan.
- c) Departure aerodrome and time.
- d) Destination aerodrome.
- e) DOF where included in the filled Flight plan and "0" where DOF/or no other information is not included.

Example with DOF:

(CNL-ETH802-HAAB1015-EDDF-
DOF/160020)

Example without DOF:

(CNL-ETH802-HAAB1015-EDDF-0)

8.6 Arrival Message (ARR)

8.6.1 When an arrival report is received by the ATS unit serving the arrival aerodrome, this unit shall transmit an ARR message:

- a) for a landing at the destination aerodrome:
 - i) to the ACC or flight information centre in whose area the arrival aerodrome is located, if required by that unit; and
 - ii) To the air traffic services unit, at the departure aerodrome, which originated the flight plan message, if that message included a request for an ARR message;
- b) For a landing at an alternate or other aerodrome:
 - i) To the ACC or flight information centre in whose area the arrival aerodrome is located; and
 - ii) To the aerodrome control tower at the destination aerodrome; and
 - iii) To the air traffic services reporting office at the departure aerodrome; and
 - iv) To the ACC or flight information centre in charge of each FIR or upper FIR through which the aircraft would have passed according to the flight plan, had it not diverted.

8.6.2 At unmanned aerodromes, it is the pilot's responsibility to report his arrival to the nearest ECAA-manned aerodrome if a SARTIME has been filed in the flight plan.

8.6.3 When a controlled flight which has experienced failure of a two-way communication has landed, the aerodrome control tower at the arrival aerodrome shall transmit an ARR message:

- a) for a landing at the destination aerodrome: to all air traffic service units concerned with the flight during the period of communication failure; and to all other air traffic service units which may have been alerted: for a landing at an aerodrome other than the destination aerodrome: to the ATS units serving the destination aerodrome; this unit shall then transmit an ARR message to other ATS units concerned or alerted as in a) above.

8.6.4 An arrival message will contain the following information in the order shown:

- a) Type of message (ARR)
- b) Radio call sign or aircraft identification as shown in the flight plan or departure message.
- c) Departure aerodrome and time
- d) The four letter code or the name of the aerodrome where the aircraft has landed followed, without a space by the time of arrival expressed as a four-figure group in UTC.

Example: (ARR- ETH801-EDDF0005-
HAAB0430)

8.7 Modification Message (CHG)

8.7.1 A CHG message shall be transmitted when any change is to be made to basic flight plan data contained in previously transmitted FPL or RPL data. The CHG message shall be sent to those recipients of basic flight plan data which are affected by the change.

8.7.2 Modification messages contain the following information in the order shown:

- a) Message type (CHG)
- b) Aircraft Identification
- c) Departure aerodrome and time
- d) Destination aerodrome and total estimated elapsed time, destination alternate aerodrome(s) other information

The amendment to the flight plan Example with CHG in 8 with DOF:

(CHG-ETH802-HAAB1015-EDDF-
DOF/130120-8/I)

Example with CHG in 8 without DOF:

(CHG-ETH802-HAAB1015-EDDF-8/I-0)

Meaning: Modification message-aircraft identification ETH801, en route from Bole International to Frankfurt - Field Type 8 of the related filed flight plan is corrected to IFR.

Note: When modifying a field 18 element, the complete field 18 must be provided and not just the modified elements. Elements not repeated will be deleted.

8.7.3 Request flight plan message (RQP) A request flight plan (RQP) message shall be transmitted when an ATS unit wishes to obtain flight plan data. This might occur upon receipt of a message concerning an aircraft for which no corresponding basic flight plan data had been previously received. The RQP message shall be transmitted to the transferring ATS unit which originated an EST message, or to the centre which originated an update message for which no corresponding basic flight plan data are available. If no message has been received at all, but an aircraft establishes radiotelephony (RTF) communications and requires air traffic services, the RQP message shall be transmitted to the previous ATS unit along the route of flight.

Request flight plan messages must contain the following information in the order shown:

- a) Message type (RQP)
- b) Aircraft identification
- c) Departure aerodrome
- d) Destination aerodrome

Example: (RQP-ETH300-EDDFL-HAAB)

8.8 Request Supplementary flight plan message (RQS)

8.8.1 A request supplementary flight plan (RQS) message shall be transmitted when an air traffic services unit wishes to obtain supplementary flight plan data. The message shall be transmitted to the air traffic services reporting office at the departure aerodrome or in the case of a flight plan submitted during flight, to the air traffic services unit specified in the flight plan message.

8.8.2 Request flight plan messages must contain the following information in the order shown:

- a) Message type (RQS)
- b) Aircraft identification
- c) Departure aerodrome and time
- d) Destination aerodrome
- e) DOF where included in the filled Flight plan and "O" where DOF not included.

Example:

(RQS-ETH802-HAAB1015-EDDF-DOF/160120)
or

(RQS- ETH802- HAAB1015-EDDF -0) for filled FPL without DOF:

8.9 Supplementary flight plan message (SPL).

8.9.1 An SPL message shall be transmitted by the air traffic services reporting office at the departure aerodrome to air traffic services units requesting information additional to that already transmitted in a CPL or FPL message. When transmitted by the AFTN, the message shall be assigned the same priority indicator as that in the request message.

Composition of a Supplementary flight plan message:-

- a) Message type, number and reference data
- b) Aircraft identification and SSR Mode and Code.
- c) Departure Aerodrome and time
- d) Destination aerodrome and total estimated elapsed time, alternate aerodrome(s)
- e) Other information
- f) Supplementary information

Example:

(SPL-ETH660
-EDDL0920
-HADR0800 HABD
-REG/ETAJK RMK/CHARTER

-E/1040P/150 R/V J/L A/BLUE
C/BAHIRU)

Meaning;

Supplementary flight plan message - aircraft identification ETH660-departed Düsseldorf 0920 UTC- destination DIREDAWA, total estimated elapsed time 8 hours- alternate BAHIRDAR-aircraft registration EТАJK charter flight-endurance 10 hours and 40 minutes after departure-150 persons on board portable radio working on International Distress Frequency 121.5MHZ - life jackets fitted with lights are carried- the aircraft colour is blue- the pilot's name is BAHIRU.

8.9.2 Request supplementary flight plan messages must contain the following information in the order shown:

- a) Message type (RQS)
- b) Aircraft identification
- c) Departure aerodrome and time
- d) Destination aerodrome
- e) DOF where included in the filled Flight plan and "O" where DOF not included.

Example with a RQS from HECA:

(RQS-ETH802-HAAB1015-FSIA-DOF/ 160120)

or

(RQS-ETH802-HAAB1015-FSIA-0) for filled FPL without DOF:

ETHIOPIAN CIVIL AVIATION AUTHORITY ATS FLIGHT PLAN FORM										
FLIGHT PLAN										
PRIORITY	ADDRESSEE (S)									
FF										
FILING TIME	ORIGINATOR									
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND ORIGINATOR										
3 MESSAGE TYPE	-7 AIRCRAFT IDENTIFICATION	8 FLIGHT RULES	TYPE OF FLIGHT							
(FPL	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
9 NUMBER	TYPE OF AIRCRAFT	WAKE TURBULENCE CAT	10 EQUIPMENT & CAPABILITIES							
-	<input type="text"/>	<input type="text"/>	/	<input type="text"/>	- 10a/10b					
13 DEPARTURE AERODROME	TIME									
-	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>						
15 CRUISING SPEED	LEVEL	ROUTE								
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
16 DESTINATION AERODROME	TOTAL EET	1 ST ALTERNATE AERODROME				2 ND ALTERNATE				
AERODROME		HR	MIN	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
-	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
18 OTHER INFORMATION										
DAT /	SUR /	DEP /	DEST /							
SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES)										
19 ENDURANCE	EMERGENCY RADIO									
HR	MIN	PERSONS ON BOARD		UHF	VHF	ELBA				
-E/	<input type="text"/>	P/	<input type="text"/>	R/	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
SURVIVAL EQUIPMENT										
POLAR	DESERT	MARITIME		JUNGLE	JACKETS	LIGHT	FLUORES	UHF	VHF	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
DINGHIES										
NUMBER	CAPACITY		COVER	COLOUR						
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
AIRCRAFT COLOUR AND MARKINGS										
A/										
REMARKS										
N/										
PILOT IN COMMAND										
C/										
FILED BY										
PILOT /REPRESENTATIVE			AIS PERSONNEL			RESERVED FOR ADDITIONAL INFORMATION				
Name.....			Name.....							
Signature.....			Signature.....							

ENR 1-11 Addressing of flight plan messages

Flight movement messages relating to traffic into or via the Addis Ababa FIR shall be addressed as stated below in order to warrant correct relay and delivery.

Note: Flight movement messages in this context comprise flight plan messages, amendment messages relating thereto and flight plan cancellation messages (ICAO PANS-RAC,DOC 4444,Part VII,2.1..1..3 refers)

Category of flight (IFR,VFR or both)	Route (into or via FIR and/or TMA)	Message address
1	2	3
IFR flights	Into or via Addis Ababa FIR and, in addition, for flights -within Addis Ababa FIR above FL245 -into Addis Ababa TMA -via Addis Ababa TMA	HAAAZQZX
VFR Flights		HAAAZQZX
All flights	Ethiopian controlled aerodromes	HAAAYGYX
Remark: All flights	Outbound TFC	HAAAZQZX

ENR 1.12 INTERCEPTION OF CIVIL AIRCRAFT

1. Interception procedures

1.1 The following interception procedures and visual signals apply within the territory of Ethiopia in the event of interception of an aircraft. An aircraft which is intercepted by another aircraft shall immediately;

- a) Follow the instruction given by the other aircraft, interpreting and responding to visual signals in accordance with the specifications in Appendix 1 of ICAO Annex 2
- b) notify, if possible, the appropriate air traffic services unit;
- c) attempt to establish radio communication with the intercepting aircraft or with the

appropriate intercept control unit, by making a general call on the emergency frequency 121.5 MHZ, giving the identity of the intercepted aircraft and the nature of the flight; and if no contact has been established and if practicable, repeating this call on the emergency frequency 243 MHZ;

- d) If equipped with SSR transponder, select Mode A, Code 7700, unless otherwise, instructed by the appropriate air traffic service unit.

1.2 If radio contact is established during interception but communication in a common language is not possible, attempts shall be made to convey instructions, acknowledgement of instructions and essential information by using the phrases and pronunciations in the following table and transmitting each phrase twice.

<i>Phrase</i>	<i>Pronunciation¹</i>	<i>Meaning</i>
CALL SIGN(Call sign) ²	KOL SA-IN(Call sign)	My call sign is (call sign)
WILCO	VILL-KO	Understood. Will comply
CAN NOT	KANN NOTT	Unable to comply
REPEAT	REE-PEET	Repeat your instruction
AM LOST	AM LOSST	Position unknown
MAYDAY	MAYDAY	I am in distress
HIJACK ³	HI-JACK	I have been hijacked
LAND(Place name)	LAAND (Place name)	I request to land at(Place name)
DESCEND	DEE-SEND	I require decent

1. In the second column, syllables to emphasize are printed in bold.
2. Circumstances may not always permit, nor make desirable, the use of the phrase "HIJACK"
3. The call sign required to be given is that used in radiotelephony communications with air traffic services units and corresponding to the aircraft identification in the flight plan.

- 1.3 The phrase shown in the table below shall be used by intercepting aircraft and transmitted twice in the circumstance described in the proceeding paragraph.
- 1.4 If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by radio, the intercepted aircraft shall request immediate clarification while continuing to comply with

the radio instructions given by the intercepting aircraft.

- 1.5 If any instructions received by radio from any sources conflict with those given by the intercepting aircraft by visual signals, the intercepted aircraft shall request immediate clarification while continuing to comply with the visual instructions given by the intercepting aircraft.

<i>Phrase</i>	<i>Pronunciation¹</i>	<i>Meaning</i>
CALL SIGN	KOL SA-IN	What is your call sign?
FOLLOW	FOL-LO	Follow me.
DESCEND	DEE-SEND	Descend for landing.
YOU LAND	YOU LAAND	Land at this aerodrome
PROCEED	PRO - SEED	you may proceed

1. Syllables to be emphasized are printed in bold.

SIGNALS FOR USE IN THE EVENT OF INTERCEPTION
signals initiated by intercepting aircraft and responses by intercepted aircraft.

<i>Series</i>	<i>INTERCEPTING Aircraft Signals</i>	<i>Meaning</i>	<i>INTERCEPTED Aircraft Responds</i>	<i>Meaning</i>
1	<p>DAY-Rocking wings from a position slightly above and ahead of, and normally to the left of, the intercepted aircraft and after acknowledgment, a slow level turn, normally to the left, on to the desired heading.</p> <p>NIGHT- Same and, in addition, flashing navigational lights at irregular intervals.</p> <p>Note 1:- Meteorological conditions or terrain may require the intercepting aircraft to take up a position slightly above and ahead of, and to the right of, the intercepted aircraft and to make the subsequent turn to the right.</p> <p>Note 2:- If the intercepted aircraft is notable to keep pace with the intercepting aircraft, the latter is expected to fly a series of race-track patterns and to rock its wings each time it passes the intercepted aircraft.</p>	<p>You have been intercepted follow me</p> <p>You have been intercepted follow me</p>	<p>DAY-Rocking wings and following</p> <p>NIGHT-Same and in addition, flashing navigational lights at irregular intervals.</p> <p>HELICOPTERS: DAY or NIGHT-Rocking aircraft, flashing navigational lights at irregular intervals and following</p>	Under stood will comply
2	DAY or NIGHT- An abrupt breakaway maneuver from the intercepted aircraft consisting of a climbing turn of 90 degrees or more without crossing the line of flight of the intercepted aircraft.	Yes may proceed	<p>DAY or NIGHT - Rocking wings.</p> <p>HELICOPTERS: DAY or NIGHT-Rocking aircraft.</p>	Understood will comply
3	<p>DAY-Circling aerodrome, lowering landing gear and over flying runway in direction of landing or, if the intercepted aircraft is a helicopter, over flying the helicopter landing area</p> <p>NIGHT- Same and, in addition, showing steady landing lights.</p>	Land at this aerodrome	<p>DAY-Lowering landing gear, following the intercepting aircraft and, if after overflying the runway in use, landing is considered safe, proceeding to land.</p> <p>NIGHT-Same and, in addition, showing steady landing lights(if carried)</p> <p>HELICOPTERS: DAY or NIGHT- Following the intercepting aircraft and proceeding to land showing a steady landing light (if carried)</p>	Understood will comply

Signals initiated by intercepted aircraft and responses by intercepted aircraft.

<i>Series</i>	<i>INTERCEPTED Aircraft Signals</i>	<i>Meaning</i>	<i>INTERCEPTING Aircraft Responds</i>	<i>Meaning</i>
4	DAY- Raising landing gear while passing over landing runway at a height exceeding 300m (1000ft) but not exceeding 600m (2000ft) above the aerodrome level, and continuing to circle the aerodrome. If unable to flash landing light, flash any other lights available NIGHT-Same and in addition flashing landing lights while passing over landing runway at a height exceeding 300m (1000ft) but not exceeding 600m (2000ft).	Aerodrome you have designated is in adequate	DAY or NIGHT- If it is desired that the intercepted aircraft follow the intercepting aircraft to an alternate aerodrome, the intercepting aircraft raises its landing gear and uses the Series 1 signals prescribed for intercepting aircraft. If it is decided to release the intercepted aircraft use the Series 2 signals prescribed for intercepting aircraft.	understood follow me understood you may proceed
5	DAY or NIGHT- Regular switching on and off or all available lights but in such a manner as to be distinct from flashing lights.	Cannot comply	DAY or NIGHT- Use Series 2 signals prescribed for intercepting aircraft.	Understood
6	DAY or NIGHT- Irregular flashing of all available lights.	In distress	DAY or NIGHT- Use Series 2 signals prescribed for intercepting aircraft.	Understood

- 1) for confirming a report of an incident made initially as in a. above, or for making the initial report on such an incident if it had not been possible to report it by radio,
 - 2) For reporting an incident which did not require immediate notification at the time of occurrence.
- 3.2 An initial report made by radio should contain the following information:
- a) Aircraft identification;
 - b) Type of incident, e.g. aircraft proximity,
 - c) the incident; 1.a) and b); 2.a),b),c),d),n);
3.a),b),c),i); 4.a),b);
 - d) Miscellaneous: 1.e).
- 3.3 The confirmatory report on an incident of major significance initially reported by radio or the initial report on any other incident should be submitted to the briefing office serving the aerodrome of first landing on the "Air Traffic Incident Report Form".
- The pilot should complete the air traffic incident report form, supplementing the details of the initial reports as necessary.

Note: Where there is no ATS flight information service, the report may be submitted to another ATS unit.

4. Purpose of reporting and handling of the form

- 4.1 The purpose of reporting of aircraft proximity incidents and their investigation is to promote the safety of aircraft. The degree of risk involved in an aircraft proximity incident should be determined in the incident investigation and classified as "risk of collision", "safety not assured" or "risk not determined".
- 4.2 The purpose of the form is to provide investigating authorities with as complete information on an air traffic incident as possible and to enable them to report back, with the least possible delay to the pilot or operator concerned, the result of the investigation of the incident and, if appropriate, the remedial action taken.

ENR 1-14 Air traffic incidents

1. *Air traffic incident is used to mean a serious occurrence involving air traffic, such as:*
 - a) *aircraft proximity (AIRPROX).*
 - b) *Serious difficulty resulting in a hazard to aircraft caused, for example by:*
 - 1) *faulty procedures*
 - 2) *non-compliance with procedures, or*
 - 3) *failure of ground facilities.*

1.1.1 Definitions for aircraft proximity and AIRPROX.

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

Risk of collision. The risk classification of aircraft proximity in which the safety of the aircraft may have been compromised.

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

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

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

1.3 Air traffic incidents are designated and identified in reports as follows:

Type	Designation
1.Air traffic incident as in a) above as in b)1) AND 2).above	2. Incident AIRPROX (aircraft proximity) Procedural
as in b) 3) above	facility

2. Use of the 'Air Traffic Incident Report Form'

2.1 The 'Air Traffic Incident Report Form'

(See model ENR 1-14.4 through 1.14.7 is intended for use:
 a) by a pilot for filling a report on an air traffic incident after arrival or to confirm a report made initially by radio during flight.

Note: The form, if available on board, may also be of use in providing a pattern for making the initial report in flight.

b) by an ATS unit for recording an air traffic incident report received by radio, telephone or teleprinter.

Note: The form may be used as format for the text of a message to be transmitted over the AFS network.

- 2 Reporting procedures (including in-flight procedure)
 - 3.1 The following are the procedures to be followed by a pilot who is or has been involved in an incident:
 - a) during flight, use the appropriate air/ground frequency for reporting an incident of major significance, particularly if it involves other aircraft, so as to permit the facts to be ascertained immediately,
 - b) as promptly as possible after landing submit a completed 'Air Traffic Incident Report Form'

- 1) for confirming a report of an incident made initially as in a. above, or for making the initial report on such an incident if it had not been possible to report it by radio,
- 2) For reporting an incident which did not require immediate notification at the time of occurrence.

3.2 An initial report made by radio should contain the following information:

- a) Aircraft identification;
- b) Type of incident, e.g. aircraft proximity,
- c) the incident; 1.a) and b); 2.a),b),c),d),n);
- 3.a),b),c),i); 4.a),b);
- d) Miscellaneous: 1.e).

3.3 The confirmatory report on an incident of major significance initially reported by radio or the initial report on any other incident should be submitted to the briefing office serving the aerodrome of first landing on the "Air Traffic Incident Report Form".

The pilot should complete the air traffic incident report form, supplementing the details of the initial reports as necessary.

Note: Where there is no ATS flight information service, the report may be submitted to another ATS unit.

4. Purpose of reporting and handling of the form

- 4.1 The purpose of reporting of aircraft proximity incidents and their investigation is to promote the safety of aircraft. The degree of risk involved in an aircraft proximity incident should be determined in the incident investigation and classified as "risk of collision", "safety not assured" or "risk not determined".
- 4.2 The purpose of the form is to provide investigating authorities with as complete information on an air traffic incident as possible and to enable them to report back, with the least possible delay to the pilot or operator concerned, the result of the investigation of the incident and, if appropriate, the remedial action taken.

AIR TRAFFIC INCIDENT REPORT

For use when submitting and receiving a report on an air traffic incident and when preparing for transmission a message on such incidents

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 <input type="checkbox"/> kt— <input type="checkbox"/> km/h---	
c) Level and altimeter setting.....		
d) Aircraft climbing or descending		
<input type="checkbox"/> Level flight	<input type="checkbox"/> Climbing	<input type="checkbox"/> Descending
e) Aircraft bank angle		
<input type="checkbox"/> Wings level	<input type="checkbox"/> Slight bank	<input type="checkbox"/> Moderate bank
<input type="checkbox"/> Steep bank	<input type="checkbox"/> Inverted	<input type="checkbox"/> Unknown
f) Aircraft direction of bank		
<input type="checkbox"/> Left	<input type="checkbox"/> Right	<input type="checkbox"/> Unknown
g) Restrictions to visibility (select as many as required)		
<input type="checkbox"/> Sun glare	<input type="checkbox"/> Windscreen pillar	<input type="checkbox"/> Dirty windscreen
<input type="checkbox"/> Other cockpit structure	<input type="checkbox"/> None	
h) Use of aircraft lighting (select as many as required)		
<input type="checkbox"/> Navigation lights	<input type="checkbox"/> Strobe lights	<input type="checkbox"/> Cabin lights
<input type="checkbox"/> Red anti-collision lights	<input type="checkbox"/> Landing/taxi lights	<input type="checkbox"/> Logo (tail fin) lights
<input type="checkbox"/> Other	<input type="checkbox"/> None	
I) Traffic avoidance advice issued by ATS		
<input type="checkbox"/> Yes, based on radar	<input type="checkbox"/> Yes, based on visual sighting	
<input type="checkbox"/> Yes, based on other information	<input type="checkbox"/> No	
J) Traffic information issued		
<input type="checkbox"/> Yes, based on radar	<input type="checkbox"/> Yes, based on visual sighting	<input type="checkbox"/> Yes, based on other information
<input type="checkbox"/> No		
k) Airborne collision avoidance system-ACAS		
<input type="checkbox"/> Not carried	<input type="checkbox"/> Type	<input type="checkbox"/> Traffic advisory issued
<input type="checkbox"/> Resolution advisory issued	<input type="checkbox"/> Traffic advisory or resolution advisory not issued	
l) Radar identification		
<input type="checkbox"/> No radar available	<input type="checkbox"/> Radar identification	<input type="checkbox"/> No radar identification
m) Other aircraft sighted		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Wrong aircraft sighted

*Delete as appropriate

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

**Delete as appropriate*

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*

5 Any other information considered important by the pilot -in command

.....

D-Miscellaneous**1. Information regarding reporting aircraft**

- a) Aircraft registration.....
- b) Aircraft type.....
- c) Other.....
- 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.....

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.)

.....

*Delete as appropriate

DIAGRAMS OF AIRPROX

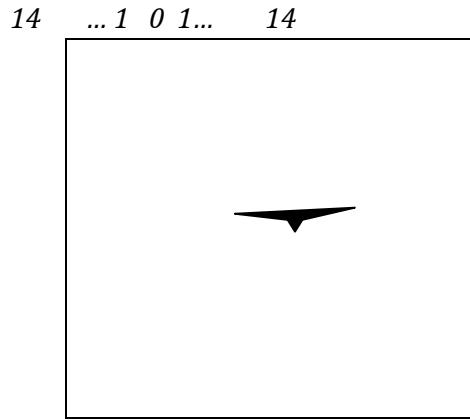
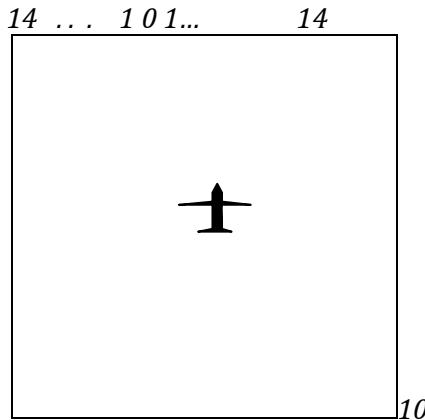
Mark passage of other aircraft relative to you, in plan on the left and in elevation on the right

assuming YOU are at the center of each diagram.
Include first sighting and passing distance.

*VIEW FROM ABOVE.....VIEW FROM *ASTERN*

undreds of metres_____

hundreds of metres_____



*Delete as appropriate

Instructions for the completion of the Air Traffic
Incident Report Form

Item

A Aircraft identification of the aircraft filing
the report

B An AIRPROX report should 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 FL350/1 013 hpa or 2 500 FT/QNH 1
007 hpa or 1 200 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/time
in UTC

D1g) 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.



ETHIOPIAN CIVIL AVIATION AUTHORITY

BIRD STRIKE REPORTING FORM

Send to..... Operator.....01/02 Aircraft make/model.....03/04 Engine make/model.....05/06 Aircraft registration.....07 Date day....month....year.....08 Local time.....09 Dawn A day B dusk C night D.....10 Aerodrome Name.....11/12 Runway used.....13 Location if en route.....14 Height AGL.....ft 15 Speed (IAS).....kt 16 Phase of flight.....17 Parked <input type="checkbox"/> A Taxi <input type="checkbox"/> B Take-off run <input type="checkbox"/> C Climb <input type="checkbox"/> D enroute <input type="checkbox"/> E descent <input type="checkbox"/> F approach <input type="checkbox"/> G landing roll <input type="checkbox"/> H			Effect on flight None <input type="checkbox"/> 31 <input type="checkbox"/> Aborted take-off <input type="checkbox"/> 32 <input type="checkbox"/> Precautionary landing <input type="checkbox"/> 33 <input type="checkbox"/> Engines shut down <input type="checkbox"/> 34 <input type="checkbox"/> Vision obscured <input type="checkbox"/> 35 <input type="checkbox"/> Sky condition 36 No cloud <input type="checkbox"/> A Some cloud <input type="checkbox"/> B Overcast <input type="checkbox"/> C Precipitation fog <input type="checkbox"/> 37 rain <input type="checkbox"/> 38 snow <input type="checkbox"/> 39 Bird Species <input type="checkbox"/> 40 Number of birds Seen 41 struck 42 1 <input type="checkbox"/> A <input type="checkbox"/> A 2-10 <input type="checkbox"/> B <input type="checkbox"/> B 11-100 <input type="checkbox"/> C <input type="checkbox"/> C More <input type="checkbox"/> D <input type="checkbox"/> D		
Part(s) of Aircraft Radome <input type="checkbox"/> 18 <input type="checkbox"/> Windshield <input type="checkbox"/> 19 <input type="checkbox"/> Nose (excluding above) <input type="checkbox"/> 20 <input type="checkbox"/> Engine no. 1 <input type="checkbox"/> 21 <input type="checkbox"/> 2 <input type="checkbox"/> 22 <input type="checkbox"/> 3 <input type="checkbox"/> 23 <input type="checkbox"/> 4 <input type="checkbox"/> 24 <input type="checkbox"/> Propeller <input type="checkbox"/> 25 <input type="checkbox"/> Wing/rotor <input type="checkbox"/> 26 <input type="checkbox"/> Fuselage <input type="checkbox"/> 27 <input type="checkbox"/> Landing gear <input type="checkbox"/> 28 <input type="checkbox"/> Tail <input type="checkbox"/> 29 <input type="checkbox"/> Lights <input type="checkbox"/> 30 <input type="checkbox"/>	Size of bird 43 Small <input type="checkbox"/> S Medium <input type="checkbox"/> M Large <input type="checkbox"/> L Pilot warned of birds Yes <input type="checkbox"/> y no <input type="checkbox"/> x Remarks (describe damage, injuries and other pertinent information)				
	Reported by..... Send all bird remains including feather fragments to: Ethiopian Civil Aviation Accident Prevention and Investigation Bureau.				

Supplementary bird strike reporting form
Operator costs and engine damage information

A.BASIC DATA

Operator.....
 Aircraft make/model.....
 Engine make/model.....
 Aircraft registration.....
 Date of strike day.....month.....year.....
 Aerodrome/location if known.....

B. Cost information

Aircraft time out of service.....	hours
Estimated cost of repairs or replacement	U.S\$ (in thousands).....
Estimated other costs (E.g. loss of revenue, fuel, hotels)	

C. SPECIAL INFORMATION ON ENGINE DAMAGE STRIKES

Engine position number	1	2	3	4
Reason for failure/shut down				
Uncontained failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shutdown-vibration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shutdown-temperature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shutdown-fire warning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shutdown-other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....				
Shutdown-unknown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Estimated percentage of thrust loss*

Estimated number of birds ingested

Bird species.....

*These may be difficult to determine but even estimates are useful.

Send all bird remains including feather fragments to...Ethiopian Civil Aviation accident/incident investigation Section.

Reported by.....

This information is required for aviation safety

Explanation of State Bird Strike Record Print

<p>AIRPORT: On and near airports—"on airports" Are entered first, in alphabetical order; "near airports" follow in alphabetical order</p> <p>LOCATION: Other locations,i.e "off airports " follow in alphabetical order</p> <p>DATE/TIME: Of the bird strike</p> <p>AIRCRAFT: Model</p> <p>OPERATOR: Operator name, or business,private,Governmental or military aircraft</p> <p>RUNWAY: Designation number</p> <p>PHASE (of flight)</p> <p>PARKE =parked</p> <p>TAXI =taxi</p> <p>TORUN =take-off run</p> <p>CLIMB =climb</p> <p>ENRUT =en route</p> <p>DCENT =descent</p> <p>APPR =approach</p> <p>LDG =landing roll</p> <p>HEIGHT: in feet above ground level</p> <p>IAS: Indicated air speed in knots</p> <p>PARTS/S(struck)or D (damaged</p> <p>R =radome</p> <p>W =windshield</p> <p>N =nose</p> <p>E1, 2, 3 or 4 =engine 1,2,3 or 4</p> <p>P =propeller</p> <p>WG =wing/rotor</p> <p>F =fuselage</p> <p>G =landing gear</p> <p>T =tail</p> <p>L =lights</p> <p>PS =pitot/static head</p> <p>A =antenna</p> <p>TR =tail rotor</p> <p>HT =helicopter transmission</p> <p>PRECIPITATION: Precipitation</p> <p>SKY (condition)</p> <p>NCLD =no cloud</p> <p>SCLF =some cloud</p> <p>OVER =overcast</p>	<p>BIRD (species):</p> <p>SIZE (of bird)</p> <p>S =small</p> <p>M = medium</p> <p>L =large</p> <p>For strikes involving more than two species, larger bird size</p> <p>SEEN: Number of birds</p> <p>STRUCK: Number of birds</p> <p>SC(species confirmed):</p> <p>- =unknown</p> <p>DAMAGE(aircraft):</p> <p>D =destroyed</p> <p>S =substantial</p> <p>M =minor</p> <p>N =none</p> <p>- = unknown</p> <p>EFFECT (on flight):</p> <p>ABORT =aborted take-off</p> <p>P-LDG =precautionary landing</p> <p>F-LDG =forced landing</p> <p>FIRE =fire</p> <p>PEN-WIND =penetration of windshield</p> <p>PEN-ARF =penetration of airframe</p> <p>VISION =vision obscured</p> <p>E-SD =engines shut down</p> <p>E-I =engine ingestion</p> <p>E-UF =engine uncontained failure</p>
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ENR 2.AIR TRAFFIC SERVICES AIRSPACE
ENR 2.1 FIR, UIR, TMA, CTR

NAME LATERAL LIMITS VERTICAL LIMITS CLASS OF AIRSPACE	Unit providing service	Call sign/Language Area and Condition of use Hours of Operation	Frequency/ Purpose	Remarks
ADDIS ABABA FIR The Addis Ababa FIR includes, at present , all the airspace above an area bounded by lines joining successively the following points:-2000N 03830E -1300N 03600E-0800N 03300E-0400N 03600E along the parallel of 04000N intersection with the Somalia/Ethiopia border and along the border between Somalia and territory of the Republic of Djibouti, then along an arc with Radius 65NM from Djibouti to the existing boundary of Mogadiscio FIR. - Common FIR boundary between Sanna and Addis Ababa 154310N 0413406E 150400N 0414643E 144330E 0420042E 142716N 0421654E 140839N 0423133E 133613E 0423830E 132723N 0424325E 131423N 0425947E 130608N 0430606E 125810N 0431245E 123600N 0432000E 153858N 0413405E 150012N 0415042E 143605N 0421002E 142111N 0422204E 140339N 0422839E 133551N 0423814E 132639N 0430303E 131054N 0430303E 130405N 0430842E 125423N 0431358E 121000N 0440300E 151510N 0413731E 144606N 0415847E 143514N 0421135E 141523N 0422609E 133930N 0423937E 133338N 0423937E 132401N 0425247E 130657N 0430521E 130027N 0431054E 124500N 0431200E 114500N 0441100E <u>FL660</u> GND	ADDIS ACC/FIC	ADDIS CENTER (EN) H24	125.1 MHZ 125.2 MHZ 11300KHZ 5517KHZ 7595 KHZ	
<i>All airspace outside the published ATS routes ,UTA TMAs and CTRs Class G</i>				
ADDIS ABABA UTA A circle with 100 NM radius centered on GWZ VOR /DME (0384611.7N 090622.3E) excluding restricted areas.	ADDIS ACC/FIC	ADDIS CENTER H24	125.1MHZ & 125.2MHZ	
<u>FL 660</u> FL 155 <u>Class A</u>				
ADDIS ABABA TMA A Circle with 40 NM radius centered on ADS VOR/DME (085837N 0384800E) (Excluding the restricted Areas.)	Bole APP	Bole Approach (EN) H24	119.7 MHZ	Excluding HAR-1& HAR-2
<u>FL 195</u> 13500 ALT <i>Above FL145 Class A and below FL145 Class D</i>				
ADDIS ABABA CTR A Circle with 25 NM radius centered on ADS VOR/DME (085837N 0384800E) excluding the restricted Areas.	Bole APP	Bole TWR H24 (EN)	118.1MHZ 121.5MHZ	Excluding HAR-1 Emergency
<u>13500 ALT</u> GND				
<i>Area II of Bole CTR(10,500ALT up to 13,500ALT above Area I of Bole and the remaining portion of Bole CTR) class C and Area I below 10,500ALT of Bole CTR class E</i>				

<i>LATERAL LIMITS VERTICAL LIMITS CLASS OF AIRSPACE</i>	<i>Name providing service</i>	<i>Callsign/Language Area and Condition of use Hours of Operation</i>	<i>Frequency/ Purpose</i>	<i>Remarks</i>
DIRE DAWA TMA A circle with 80 NM but 72NM to NE along AWY W886 radius centered on DWA VOR/DME (093818N 0415054 E) <u>FL245</u> FL 150 <u>class A</u>	Dire Dawa APP	Dire Dawa Approach (EN) 0300 - 1700		
DIRE DAWA CTR A circle with 15 NM radius centered on DWA VOR/DME (093818N 0415054 E) <u>FL 150</u> GND Above FL 145 <u>class A</u> and below FL 145 <u>class D</u>	Dire Dawa APP	TWR 0300 -1700	118.3MHZ 121.5MHZ	
BAHIR DAR CTR A circle with 60 NM radius centered on "BD" NDB (113500N 0371900 E)	Bahir Dar TWR	TWR (EN) 0300 -1700	118.3MHZ	
BAHIR DAR TMA A circle with 60 NM radius centered on BDR VOR/DME (N113623.11 E0371901.98) <u>FL 245</u> FL175				
BAHIR DAR CTZ A circle with 25NM radius centered on BDR VOR/DME <u>FL 175</u> GND <u>class E</u>				
GAMBELLA CTR A circle with 20 NM radius centered on "BRO" VOR (080741.75N 0343406 E) <u>FL 175</u> GND <u>class E</u>	Gambella TWR	TWR (EN) 0300 -1500	118.3MHZ	
JIMMA A circle with 20 NM radius centered on "JM" NDB (074000N 036500 E) <u>FL 145</u> GND <u>class E</u>	Jimma TWR	TWR (EN) 0300 -1500	118.4MHZ 121.5MHZ	

<i>NAME Lateral limits Vertical limits Class of airspace</i>	<i>Unit providing service</i>	<i>Call sign/Languages Area and conditions of use hours of service</i>	<i>Frequency /Purpose</i>	<i>Remarks</i>
1	2	3	4	5
MEKELE CTR A circle with 25NM radius centered on "MK" NDB (132300N 0393100 E) <u>FL 175</u> GND <u>class E</u>	MEKELE TWR	TWR 0300 -1700	118.8MHZ	
MEKELE TMA A circle with 50NM radius centered on QHA VOR/DME (N13 28 21.98 E039 31 29.093)				
MEKELE CTZ A circle with 25NM radius centered on "MK" NDB <u>FL 175</u> GND				
DJIBOUTI TMA An arc of 65NM radius centered on DTI VOR/DME (113254N 0430542E) <u>FL 245</u> GND class A	Djibouti APP	Djibouti App (FR,EN) H24	121.1MHZ	
Addis FIR is sectorized to the following sectors control areas (CTA) EAST SECTOR BOUNDARY	Addis ACC FIC	<i>Addis control English</i>	125.2MHzday HF 11300KHZ and HF 5517KHZ night	See index chart ENR 6.5
Addis East Sector The area of responsibility for Addis ACC East is the air space that lies within the limit of the area defined by joining the co-ordinates N14°20' E037°00' N11°45' E37°00' along Bahir Dar CTR boundary-clockwise to N11°15' E037°50', N10°40' E038°10' along the Addis UTA boundary-clockwise to N08°55' E040°30', N08°55' E040°40', N07°00' E040°40' N06°18' E040°00', N05°18'0 E040°00' N04°00' E040°00' then along the Mogadisio/Addis FIR following the existing Addis FIR boundary to the East. Vertical limit ground to unlimited				
Addis West Sector The area of jurisdiction for Addis ACC West is the airspace defined by joining successively the points N14°20' E037°00', N11°45' E037°00', along Bahir Dar CTR boundary-clockwise to N11°15' E037°50', N10°40' E038°10', along the Addis UTA Boundary-clockwise to N08°55' E040°30', N08°55' E040°40', N07°00' E040°40' N06°18' E040°00', N05°18'0 E040°00', N04°00'E040°00' then along the Nairobi/Addis FIR Boundary and Khartoum/Addis FIR boundary. Vertical limit ground to unlimited.	Addis ACC FIC	<i>Addis control English</i>	125.1MHzday HF 11300KHZ and HF 5517KHZ night	

ENR 3 ATS ROUTE

3.1 Lower ATS routes

<i>Route Designator (RNP TYPE)</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
P751 (RNP 10) ▲ EKBOR N14 25.1 E040 22.0					
▲ IBRAD N13 25.9 E042 00.0	123° 303 111				Transfer Addis Center/ Djibouti APP
▲ SB NDB N13 04.0 E042 38.8	123° 303 43	FL 660 5500ALT A and E	20	↓	
▲ PARIM N12 31 7.0 E043 27 .2	123° 303 58			↑	ADDIS ABABA FIR
A727 (RNP 10) ▲ ANTAX N03 59.8 E035 24 10.3					SANA FIR
▲ AMATO N05 18 41.0 E035 01 26.7	344° 164° 82				NAIROBI FIR
▲ EPSIX N06 40.4 E034 39.3	344° 164° 89	FL 245 13500 ALT 14500FT A and E	60	↓	ADDIS ABABA FIR Addis Center 125.1 MHZ
▲ AVONO N09 26.1 E033 54.3	344° 164° 167			↑	Khartoum Control 125.5 MHZ
B535 (RNP 10) ▲ DAGAP N06 24.0 E034 12.0					ADDIS ABABA FIR
▲ EPSIX N06 40.4 E034 39.3	058° 238° 32	FL 660 FL 245 A		↓	KHARTOUM FIR
▲ IMTOR N06 47.9 E034 51.9	058° 238° 14				
▲ APKOD N07 43.5 E036 25.3	058° 238° 105		60	↑	Addis center 125.1 MHZ

<i>Route Designator (RNP TYPE)</i> <i>Significant Points</i>	<i>Track MAG (GEO)</i> <i>VOR RDL</i> <i>DIST (COP)</i>	<i>Upper Limit</i> <i>Lower Limit</i> <i>Minimum flight Altitude</i> <i>Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels</i> <i>Odd/Even</i>	<i>Remarks</i> <i>Controlling Unit Frequency</i>
1	2	3	4	5	6
B535 (continued) (RNP 10) ▲ APKOD					Addis center 125.1MHZ
N07 43.5 E036 25.3	<u>058°</u> 238° 64	<u>JNL</u> FL 245 A			
▲ KOFTA	<u>058°</u> 238° 58	<u>FL660</u> 14500ALT 15500FT A and E	20		
N08 13.0 E037 20.7	<u>058°</u> 238° 42				
▲ ITPOG	<u>058°</u> 238° 58	<u>FL660</u> 13500ALT 14500FT A and E	30		
N08 44.1 E038 09.8	<u>058°</u> 238° 42				
▲ GWZ DVOR/DME	<u>058°</u> 238° 100				
N09 06.4 E038 46.2	<u>060°</u> 240° 76	<u>FL660</u> 13500ALT 14500FT A and E	30		
▲ ASOLE	<u>060°</u> 240° 76				
N09 56.4 E040 13.9	<u>060°</u> 240° 54	<u>FL660</u> 13500ALT 14500FT A and E	30		
▲ NIDEG	<u>060°</u> 240° 54				
N1035.3 E041 22.1	<u>060°</u> 240° 63	<u>FL660</u> 6500ALT 75500FT A	20		"TORBA" Transfer ADS center/ SANAA Center above FL245 ADDIS ABABA FIR
▲ LAKBE	<u>060°</u> 240° 63				
N11 02.4 E 042 09.7	<u>056°</u> 236° 67	<u>FL660</u> 6500ALT 75500FT A	20		SANAA FIR
▲ DTI VOR/DME					
N11 32.9 E043 05.6					
▲ TORBA					
N12 10.6 E044 02.1					
M308 (RNP 10) ▲ RUDOL					NAIROBI FIR
N0400.2 E037 22.2	<u>014°</u> 194° 159	<u>FL660</u> 13500ALT 14500FT A and E	60	↓	ADDIS ABABA FIR
▲ OKNET	<u>014°</u> 194° 58				
N06 32.3 E038 07.8					
▲ SHALA					
N07 28.9 E038 21.8					

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Route Designator (RNP TYPE) Significant Points	Track MAG (GEO) VOR RDL DIST (COP)	Upper Limit Lower Limit Minimum flight Altitude Air Space classification	Lateral Limits (NM)	Direction of Cruising Levels	Remarks Controlling Unit Frequency
				Odd/Even	
1	2	3	4	5	6
G650 (continued) (RNP 10)					
▲ SHALA					
N07 28.9 E038 21.8		014° 194° 43			Addis Center 125.1 MHz
▲ GETOL		014° 194°			
N08 10.8 E038 32.3		57			
▲ GWZ DVOR/DME		000° 180° 100			
N09 06.4 E038 46.2		000° 180° 233			
▲ RANSO					Addis center 125.1MHZ
N10 46 50.6 E038 46 11.7					11300KHZ(HC)
▲ ETKET					ADDIS ABABA FIR
N14 41 05.9 E038 53 02.0					ASMARA CONTROL
UG 651(UM 651) (RNP 10)					MOGADISCIO FIR
▲ MURAL		139° 319° 89			ADDIS ABABA FIR
N08 45 .8 E044 45.3		FL600 FL245	60	↓	Addis center125.1MHZ,
▲ALKOS		139° 319° 80	A		11300KHZ(HC)
N07 40.2E045 45.8					
▲ KUSUB					ADDIS ABABA FIR
N06 41 .2 E046 40.0					MOGADISCIO FIR
R 611 (RNP 10)					
▲ TIKAT					KHARTOUM FIR
N12 24.4 E035 38 .2		136° 316° 68			ADDIS ABABA FIR
▲ DAVIT					
N11 34.1 E036 25 .0		136° 316° 107	FL 660 15500 ALT A	60	
▲ MARCO					
N10 19.9 E037 37.1		136° 316° 100	FL660 FL 295 A	20	↑ Addis center 125.1MHZ
▲ GWZ DVOR/DME					
N09 06.4 E038 46.2					

<i>Route Designator (RNP TYPE) Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
R775 (RNP 10) ▲ APDOS N15 39.9 E041 39.8					JEDDAH FIR
▲ PURAD N14 55.0 E041 53.9	<u>163°</u> 343° 47				ADDIS ABABA FIR INT UB 526
▲ SOLIR N13 52.4 E042 19.3	<u>163°</u> 343° 67	<u>FL 660</u> 9500ALT 10500FT A and E	60		INT UA408
▲ SB NDB N13 04 E042 38.8	<u>163°</u> 343° 55				
▲ MANDA N13 35.4 E042 47.3	<u>163°</u> 343° 28				*CLASS A below FL245 is under DJIBOUTI APP
▲ DTI VOR/DME N11 32.9 E043 05.6	<u>163°</u> 343° 65	<u>FL 660</u> 8500ALT	20		
▲ LUBAR N10 33.0 E043 36.0	<u>153°</u> 333° 65	9500FT A			MOGADISCIO FIR
▲ ALNAB N08 55.1 E044 13.0	<u>168°</u> 348° 127	A <u>FL 660</u> 7500ALT 8500FT A and E	60	↓	ADDIS ABABA FIR INT UG 657
▲ GABDA N0641.9 E044 44.9	<u>225°</u> 045° 101	<u>FL 660</u> 8500ALT 6500FT A and E	60		Addis Centre 125.1 MHZ
▲ SOLUL N05 05.1 E045 08.0					ADDIS ABABA FIR MOGADISCIO FIR
UN303 (RNP 10) ▲ PARIM N12 31.7 E043 27.2					
▲ KASOL N11 52.8 E043 35.8	<u>167°</u> 347° 40	<u>FL 660</u> 7500FT ALT	20		Addis Center 125.1 MHZ
▲ NAPGO N11 14.5 E043 43.9	<u>167°</u> 347° 39	10,000 FT B		↑	HAAA FIR HCSM FIR

<i>Route Designator (RNP TYPE) Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
W 885					
▲ DWA VOR/DME					
09 38.3 E041 50 .9	<u>093°</u> 273°	<u>FL 660</u> 12500ALT A and E			Addis Center 125.1 MHZ ADDIS ABABA FIR
▲ ARSHI	80	13500ALT	20		MOGADISCIO FIR
N09 33.1 E043 24.4					
W 886					
(RNP 10)					
▲ BRO VOR/DME					
N080741.75	<u>077°</u>				
E0343341.03	257°				
▲ ANVEX	54				
N0818.6 E035 27.5	<u>077°</u> 257°	<u>FL 660</u> 12500ALT 13500ALT A and E	60		Addis Center 125.1 MHZ
■ GUDER	102				
N08 43 .6 E037 07.8	<u>077°</u> 257°	<u>FL 660</u> 13500ALT 11500ALT A and D			
▲ GETIN	55				
N08 56.2 E038 01 .9	<u>077°</u> 257°				
▲ GWZ DVOR/DME	45				
N09 06 .4 E038 46 .2	<u>077°</u> 257°	<u>FL 660</u> 14500ALT 15500ALT A and D			Addis Center 125.1 MHZ
▲ MIWAS	100				
N09 25 .3 E040 25.5	<u>079°</u> 259°	<u>FL 660</u> 12500ALT 13500ALT A and D			
▲ DWA VOR/DME	81				
N09 38.3 E041 50 .9					
W 887					
(RNP 10)					
▲ GWZ DVOR/DME					
N09 06 .4 E038 46 .2	<u>149°</u>	<u>FL 660</u>	20		
▲ LABLA	329°				
N10 32.4 E037 53 .9	100				
▲ TN NDB	<u>149°</u>	15500ALT 16500FT A	40		
N11 35.5 E037 18.3	329°				
	72				

<i>Route Designator (RNP TYPE) Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude <i>Air Space classification</i></i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
ATS (RNP 10) ▲ DWA VOR/DME N09 38.3 E 041 50.9					
▲ TADRA N08 16.6 E041 52.8	<u>180°</u> 360° 180	<u>UNL</u> 12500ALT 13500FT A	20		Addis Center 125.1 MHZ
▲ ADABA N05 41.8 E041 53.8	<u>180°</u> 360° 154	<u>FL660</u> 9500ALT 10500FT A and E	60		
▲ MANDERA N03 56.4 E041 51.9	<u>180°</u> 360° 103	<u>FL660</u> 8500ALT 9500FT A and E			ADDIS ABABA FIR
W16	<u>094°</u> 274° 60	<u>FL660</u> <u>15000ALT</u> <u>16000FT</u> <u>A and E</u>	20		NAIROBI FIR Addis ACC West 125.1
▲ BDR VOR/DME N1136.4 E 037 19.0	<u>094°</u> 274° 54	<u>FL660</u> <u>15000ALT</u> <u>16000FT</u> <u>A and E</u> <u>9500ALT</u> <u>10500FT</u>			Addis Center 125.1 MHZ
▲ EGRUR N11 29.750E038 19.9	<u>095°</u> 275° 173	<u>A and E</u> <u>FL660</u> <u>14000</u> <u>15000</u> <u>A and E</u>	60		
▲ EKBOB N11 23.5 E039 14.6					ADDIS ABABA FIR
▲ LAKBE N11 02.4E042 09.7					NAIROBI FIR

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<i>Route Designator (RNP TYPE)</i> <i>Significant Points</i>	<i>Track MAG (GEO)</i> <i>VOR RDL</i> <i>DIST</i> <i>(COP)</i>	<i>Upper Limit</i> <i>Lower Limit</i> <i>Minimum flight Altitude</i> <i>Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels</i> <i>Odd/Even</i>	<i>Remarks</i> <i>Controlling Unit</i> <i>Frequency</i>
1	2	3	4	5	6
W17 ▲ QHA VOR/DME N132821.98 E039 3129.093		FL660 13000 14000 A and E	20		
▲ GADGI N125408.72235 E0400859.8376	131° 311° 60NM	FL660 10500 11500 A and E	50		ADDIS ACC East 125.2
▲ LAKBE N110224 E0420942	131° 312° 162.4 NM			↑	
W18 ▲ QHA VOR/DME N132821.98 E0393129.093	227° 047° 60 NM	FL660 12500 13500 A and E	20	↓	ADDIS ACC East 125.2
▲ AVUNI 125543.6843E038523 1.738	227° 047° 51 NM	FL660 12500 13500 A and E	40		
▲ APDAN N121547.13 E0380516.57					
▲ BDR VOR/DME N113623.11 E0371901.98	227° 047° 60	FL660 12000 13000 A and E	20	↑	

<i>Route Designator (RNP TYPE)</i> <i>Significant Points</i>	<i>Track MAG (GEO)</i> <i>VOR RDL</i> <i>DIST</i> <i>(COP)</i>	<i>Upper Limit</i> <i>Lower Limit</i> <i>Minimum flight Altitude</i> <i>Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels</i> <i>Odd/Even</i>	<i>Remarks</i> <i>Controlling Unit</i> <i>Frequency</i>
1	2	3	4	5	6
W19					
▲ QHA VOR/DME N132821.98 E0393129.093		252° 072° 60 NM	FL660 16000 17000 A	20	ADDIS ACC East 125.2
▲ UTEDU N131508.26887 E0384200.37079		252° 072° 176.NM	FL660 16000 17000 A	50	ADDIS ACC East 125.2
▲ TIKAT N122424 E0353812					ADDIS ACC WEST 125.1 ADDIS ABABA FIR
W20					
▲ BDR VOR/DME N113623.11 E0371901.98		294° 114° 60	FL660 10000 11500 A and E	20	KAHARTOUM FIR ADDIS ACC WEST 125.1
▲ USUNO N120243.16 E0362357.48		294° 114° 49.7	FL660 10000 11000 A and E	40	
▲ TIKAT N122424 E0353812					ADDIS ABABA FIR KAHARTOUM FIR

ENR 3. ATS ROUTES

ENR 3.2 Upper ATS routes

<i>Route Designator (RNP TYPE)</i>	<i>Track MAG (GEO)</i>	<i>Upper Limit</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
UL432 (RNP 10)					NAIROBI FIR
▲ EKBUL N04 00.2 E036 05 01.6	<u>027°</u> 207° 194				ADDIS ABABA FIR
▲ ETGOM N06 52.0 E037 37 45.0	<u>027°</u> 207° 46		40		NT W015
▲ BENDO N07 36.8 E038 00 28.9	<u>027°</u> 207° 100				
▲ GWZ DVOR/DME N09 06 22.3 E038 46 11.7	<u>027°</u> 207° 100		20		
▲ GISHE N10 27 34.3 E039 45 50.8	<u>035°</u> 215° 103	FL 660 FL 245 14500 FT			Addis center 125.1MHZ
▲ TIBIT N11 46 19.2 E040 43 58.0	<u>035°</u> 215° 83	A	40		INT UR780
▲ TATGU N12 53 26.9 E041 34 25.8	<u>035°</u> 215° 40				INT UR993
▲ IBRAD N13 25 03.9 E041 57 51.8	<u>035°</u> 215° 32				INT UA 451
▲ SOLIR N13 52 30.1 E042 19 30.0	<u>035°</u> 215° 29				INT UR775
▲ KEDON N14 15 44.1 E042 36 33.4					ADDIS ABABA FIR
					SANAA FIR
UP 751 (RNP 10)					
▲ EKBOR N14 25.1 E040 26 56.3	<u>121°</u> 301° 111	<u>UNL</u> 12500ALT 13500FT A and E			Transfer Asmara Center/ Addis Center INT UA408
▲ IBRAD N13 25.9 E041 57 51.8	<u>121°</u> 301° 43	FL660 12500ALT 13500FT A and E	20		Transfer Addis Center/ Djibouti APP at or below FL 245. ADDIS ABABA FIR
▲ SB NDB N13 04.0 E042 37 22.0	<u>121°</u> 301° 58	FL660 5500ALT A and E			SANNA FIR
▲ PARIM N12 31.7 E043 27 15.0					

<i>Route Designator (RNP TYPE) Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1 UA727 (RNP 10) ▲ ANTAX N0359.8 E035 24 10.3	2	3	4	5	6 NAIROBI FIR
▲ AMATO N05 18 41.0 E035 01 26.7	<u>344°</u> 164° 82				ADDIS ABEBA FIR Addis Center 125.1 MHZ
▲ EPSIX N0640.4 E034 40 01.5	<u>344°</u> 164° 89	<u>FL 245</u> 13500 ALT 14500FT	60		Khartoum Control 125.5 MHZ
▲ AVONO N09 26.1 E033 56 01.4	<u>344°</u> 164° 167	A and E			ADDIS ABEBA FIR KHARTOUM FIR
UB403 (RNP 10) ▲ MUSBI N08 13.30 E046 20.04					MOGADISCIO FIR
▲ ALKOS N07 40 10.20 E045 45 11.1	<u>225°</u> 045° 47				ADDIS ABEBA FIR Addis Center 125.1 MHZ
▲ GABDA N064155.71 E0454550.41	<u>225°</u> 045° 85	<u>FL 600</u> FL 245 8000	60		INT UG651 INT UR775
▲ GIBAX N053943.68E0433955.20	<u>225°</u> 045° 84	A and E			INT UR780
▲ MAV DVOR/DME N03 5625.17 E041 51 51.05	<u>225°</u> 045° 149				ADDIS ABEBA FIR NAIROBI FIR
UB525 (RNP 10) ▲ GWZ DVOR/DME N09 06 22.3 E038 46 11.7					
▲ UVARO N10 38 49.2 E038 06 31.1	3371° 157° 100				Addis Center 125.1 MHZ
▲ ITGEV N14 17 31.1 E036 30 46.2	337° 157° 237	<u>FL 660</u> FL 245 A	60		ADDIS ABEBA FIR KHARTOUM FIR

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<i>Route Designator (RNP TYPE)</i> <i>Significant Points</i>	<i>Track MAG (GEO)</i> <i>VOR RDL</i> <i>DIST (COP)</i>	<i>Upper Limit</i> <i>Lower Limit</i> <i>Minimum flight Altitude</i> <i>Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels</i> <i>Odd/Even</i>	<i>Remarks</i> <i>Controlling Unit Frequency</i>
1	2	3	4	5	6
UB525 (RNP 10) ▲ GWZ DVOR/DME N09 06 22.3 E038 46 11.7					
▲ UVARO N10 38 49.2 E038 06 31.1	<u>3371°</u> 157° 100	<u>FL 660</u>		↓	Addis Center 125.1 MHZ
▲ ITGEV N14 17 31.1 E036 30 46.2	<u>337°</u> 157° 237	FL 245 A	60	↑	ADDIS ABEBA FIR
					KHARTOUM FIR
UB535 (RNP 10) ▲ DAGAP N0624.0 E03412.0					KHARTOUM FIR
▲ EPSIX N06 40.4 E034 40 01.5	<u>058°</u> 238° 32			↓	ADDIS ABEBA FIR
▲ IMTOR N0647.9 E034 28 05.8	<u>058°</u> 238° 14	<u>FL 660</u> FL 245 A	60	↓	INT UA727
▲ APKOD N0743.5 E036 26 08.7	<u>058°</u> 238° 105	<u>UNL</u> FL 245 A			INT UM220
▲ KOFTA N08 13.0 E037 20 40.5	<u>058°</u> 238° 64				INT W15
▲ ITPOG N08 44 06.3 E038 09 49.7	<u>058°</u> 238° 58				
▲ GWZ DVOR/DME N09 06 22.3 E038 46 11.7	<u>058°</u> 238° 42	<u>FL660</u> 14500ALT 15500FT A and E	20		Addis Center 125.1 MHZ
▲ ASOLE N09 56.4 E040 13 56.8	<u>060°</u> 240° 100				
▲ NIDEG N10 35 .3 E041 22 06.0	<u>060°</u> 240° 76	<u>FL660</u> 13500ALT 14500FT A and E	30	↑	
▲ LAKBE N11 02.4 E042 09 39.3	<u>060°</u> 240° 54				

<i>Route Designator (RNP TYPE) Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
UB535 (CONTINUED) (RNP 10)		<u>FL660</u>			
▲ LAKBE N11 02.4 E042 09 39.3	<u>060°</u> 240° 63	13500ALT 14500FT A and E <u>FL660</u>	30	↓	Addis Center 125.1 MHZ "TORBA" Transfer ADS center /SANAA center above FL245 ADDIS ABABA FIR
▲ DTI VOR/DME N11 32.9 E043 05 36.7	<u>056°</u> 236° 67	6500ALT 75500FT A	20	↑	
▲ TORBA N12 10.6 E044 02 08.44					SNAAR FIR
UB736 (RNP 10)					
▲ AVONO N09 26.1 E033 56 01.4	<u>092°</u> 272° 28				KHARTOUM FIR
▲ USUBA N09 24 24 E034 22 00	<u>092°</u> 272° 170		40	↓	ADDIS ABABA FIR
▲ EGNAK N09 09.6 E037 05 09.3	<u>092°</u> 272° 47	<u>FL 660</u> FL 245 A			INT UA727/W15
▲ ETOKO N09 08.3 E037 53 18.2	<u>092°</u> 272° 53		20	↑	
▲ GWZ DVOR/DME N09 06 22.3 E038 46 11.7					KAHARTOUM FIR
					ADDIS ABABA FIR
UG300 (RNP 10)					
▲ TIKAT N12 24 24.4 E035 38 13.6	<u>146°</u> 326° 173	FL 660 15500ALT	60	↓	
▲ ETONI N10 00 37.7 E037 17 29.5	<u>146°</u> 326° 63	A and E FL 660 FL 245 A			INT UTA BDRY
▲ ETOKO N09 08 15.9 E037 53 18.2	<u>146°</u> 326° 15	<u>FL 660</u> 15500ALT 14500ALT			INT UB736
▲ GETIN N08 56.2 E038 01.9E	<u>146°</u> 326°	A and D <u>UNL</u> 245	20		INT W886
▲ ITPOG N08 44 06.3 E038 09 49.7	<u>146°</u> 326° 14	A and E <u>FL 660</u> 15500ALT		↑	INT UB535
▲ ETIVA N0823 E0382349.7	25	A and E			Addis Center 125.1

<i>Route Designator (RNP TYPE)</i> <i>Significant Points</i>	<i>Track MAG (GEO)</i> <i>VOR RDL</i> <i>DIST (COP)</i>	<i>Upper Limit</i> <i>Lower Limit</i> <i>Minimum flight Altitude</i> <i>Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels</i> <i>Odd/Even</i>	<i>Remarks</i> <i>Controlling Unit Frequency</i>
1	2	3	4	5	6
UG300(continued) (RNP 10) ▲ ITPOG N08 44 06.3 E038 09 49.7	<u>146°</u> 326° 25	FL 660 15500ALT		↓	INT UB535 Addis Center 125.1MHZ
▲ ETIVA N08 23. E038 23 49.7	<u>146°</u> 326°	A and E			INT UA408
▲ GETOL N08 10 47.7 E038 32 17.3	15				INT UG650
▲ MASLO N07 25 E039 03 14.8	<u>146°</u> 326° 55	FL 660 FL 245			INT UR611
▲ UTSOR N07 25 E039 03 14.8	<u>140°</u> 320° 92	A			INT UM216
▲ IBTAN N05 14.3 E040 51 15.4	<u>230°</u> 049° 77				INT UM997
▲ MAV DVOR/DME N03 5625.17 E041 51 51.05	<u>140°</u> 321° 99	FL 660 FL 245	60	↑	ADDIS ABEBA FIR MOGADISCIO FIR
UM308 (RNP 10) ▲ RUDOL N0400.2 E037 2933.8	<u>014°</u> 194° 159				NAIROBI FIR
▲ OKNET N0632.3 E0380748.3		60			ADDIS ABEBA FIR
▲ SHALA N0728.9 E0382150.6	<u>014°</u> 194° 58				INT UM216
▲ GETOL N08 10.8 E0383217.3	<u>014°</u> 194° 43	FL660 13500ALT 14500FT A and E	20	↓ ↑	INT W15 INT UG300

<i>Route Designator (RNP TYPE)</i>	<i>Track MAG (GEO) VOR RDL</i>	<i>Upper Limit Lower Limit</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
UM308 (continued) (RNP 10) ▲ GETOL N08 10.8 E038 32 17.3	<u>014°</u> 194° 57			↓	
▲ GWZ DVOR/DME N09 06 22.3 E038 46 11.7	000° 180° 100	FL660 15500ALT 16500FT A and E			Addis Center 125.1MHZ
▲ RANSO N10 46 50.6 E038 46 11.7	000° 180°	FL660 16500ALT 17500FT A and E			Transfer Addis center/ MOGADISCIO FIR
▲ ETKET N14 41 05.9 E038 53 02.0	233			↑	
UG 651 (RNP 10) ▲ MURAL N08 45.5 E044 45 20.5					MOGADISCIO FIR
▲ ALKOS N074 010.71 E045 45 50.41	139° 319° 77	FL600 FL245 A	60	↓	ADDIS ABEBA FIR
▲ KUSUB N06 41.2 E046 40 02.6				↑	Addis center 125.1MHZ
					11300KHZ(HC) ADDIS ABEBA FIR
					MOGADISCIO FIR
UG 657 (RNP 10) ▲ MAV DVOR/DME N03 5625.17 E041 51 51.05	021° 201° 80			↓	ADDIS ABEBA FIR
▲ BELDI N05 10.3 E042 23 14.2					Addis center 125.1MHZ
▲ EGMES N06 57.0 E043 05 02.3	021° 201° 114	FL 660 FL 245 A	60	↑	

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<i>Route Designator (RNP TYPE) Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
UG 657 (RNP 10)					
▲ EGMES N06 57.0 E043 05 02.3	021° 201° 138	FL660 FL 245 A		↓	
▲ ASKEN N09 05.7 E043 55 44.4				↑	ADDIS ABABA FIR NAIROBI FIR
UM 997 (RNP 10)	012° 192° 47				NAIROBI FIR
▲ AVEDI N04 00.2 E040 34 50.1	012° 192° 29	FL660 7500ALT 8500FT			ADDIS ABABA FIR
▲ UTANO N0445.2 E0404451.1	012° 192° 20			↓	INT W15
▲ IBTAN N0514.3 E0405115.4	012° 192° 20	A and E			INT UG300
▲ NIGUS N063014.4 E0410828.1	77	11500FT	60		INT UM 665
▲ ETLOT N071549.20E411827.02	012° 192° 112	FL660 10500ALT 13500FT A and E			Addis Center 125.1 MHZ INT UR 400
▲ AXIDA N0820.0 E0413308.2	012° 192° 80	FL660 12500ALT 12500FT A and E			INT UM216
▲ DWA VOR/DME N0938.3 E0415057.8	033° 213° 72	FL660 11500ALT 12500FT A and E			Transfer Addis Center Djibouti APP at or below FL 245
▲ ASTAR N1039.1 E0423102.3	033° 213° 64	FL660 11500ALT 12500FT A and E			ADDIS ABABA FIR MOGADISCIO FIR
▲ DTI VOR/DME N1132.9 E0430536.7					

<i>Route Designator (RNP TYPE) Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
UM216 (RNP 10)					
▲HARGEISA N09 31 12.00 E44 05 30.00 AXAPO	230° 049° 30			↓	Mogadishu FIR
N09 15 09.54 E43 4512.68	230° 049°				Addis Ababa FIR
▲ XAPSA	96				
N08 14 42.79 E42 30 19.99	230° 049° 92	FL 660 FL 245 A	40		INT UR780
▲ ETLOT	230° 049°				INT UM 997
N07 15 49.20 E41 18 27.02	98				INT UG300
▲ UTSOR N06 13 36.21 E40 02 20.96	230° 049°	FL660 FL 245 A	60		
▲ IMKIT N05 41 10.90 E39 23 13.76	51				INT W15
▲ RUDOL N0400.2E0372933.8	230° 049° 157			↑	Addis Ababa FIR
					Nairobi FIR
UR 775 (RNP 10)					
▲ APDOS N15 39 .9 E041 39 50.2	163° 343° 47			↓	JEDDAH FIR
▲ PURAD N14 55.0 E041 53 56.3	163° 343° 67	Fl 660 9500ALT 10500FT A and E	60		ADDIS ABABA FIR INT UB 526
▲ SOLIR N13 52 .4 E042 19 30.0	163° 343°				INT UA408

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<i>Route Designator (RNP TYPE)</i> <i>Significant Points</i>	<i>Track MAG (GEO)</i> VOR RDL DIST (COP)	<i>Upper Limit</i> <i>Lower Limit</i> <i>Minimum flight Altitude</i> <i>Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels</i> <i>Odd/Even</i>	<i>Remarks</i> <i>Controlling Unit</i> <i>Frequency</i>
1	2	3	4	5	6
UR 775 (RNP 10)					
▲ SOLIR (cont) N13 52 .4 E042 19 30.0	67	A and E	20	INT UA408 *CLASS A below FL245 is under DJIBOUTI APP ADDIS ABABA FIR MOGADISCIO FIR ADDIS ABABA FIR INT UG 657 Addis Centre 125.1 MHZ ADDIS ABABA FIR MOGADISCIO FIR	
▲ SB NDB N13 04.0 E042 37 22.0	163° 343° 55				
▲ MANDA N12 35 .4 E042 47 20.0	163° 343° 28				
▲ DTI VOR/DME N11 32 .9 E043 05 36.7	163° 343° 65	FL 660 8500ALT 9500FT			
▲ LUBAR N10 33 07.1 E043 36 02.4	153° 333° 65	A			
▲ ALNAB N08 55 07.0 E044 13 02.0	168° 348° 136	FL 660 7500ALT 8500FT A and E			
▲ GABDA N064155.71 E0454550.41	225° 045° 101	FL 600 FL245 8000 A and E			
▲ SOLUL N05 05.1 E045 08 02.4					
UR 780 (RNP 10)	152° 332° 193				
▲ GETAR N143905.9 E0391501.99					

<i>Route Designator (RNP TYPE)</i> <i>Significant Points</i>	<i>Track MAG (GEO)</i> VOR RDL DIST (COP)	<i>Upper Limit</i> <i>Lower Limit</i> <i>Minimum flight Altitude</i> <i>Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels</i> <i>Odd/Even</i>	<i>Remarks</i> <i>Controlling Unit</i> <i>Frequency</i>
1	2	3	4	5	6
UR 780 CONT (RNP 10)		152° 332° 193			
▲ GETAR N143905.9 E0391501.99					INT UA 408
▲ TIBIT N114619.2 E0404358.0		152° 332° 53			
▲ NIDEG N103519.0 E0412206.0		152° 332°	80		INT W 889
▲ DWA VOR/DME N09 38.3 E041 50 57.3		155° 335° 80	FL 660 FL 245		INT UB 535
▲ EPTOV N08 25.9 E042 24 50.3		155° 335° 12	A		
▲ XAPSA N081442.79E423019.99		230° 049° 85	40		INT UM216
▲ EGMES N065702.9 E0430502.3		155° 335° 82			INT UG 657
▲ GIBAX 053943.68E0433955.20		304° 124° 51			INT UM997
▲ AVUSI N04 55 08.9 E044 400 02.4					ADDIS ABABA FIR
					MOGADISCIO FIR

<i>Route Designator (RNP TYPE) Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
UR995 (RNP 10) ▲ GWZ DVOR/DME N09 06 22.3 E038 47 57.8	<u>323°</u> 143° 100	<u>FL 660</u> FL 245 16500 FT A	20	↓	Addis Center 125.1 MHZ
▲ OKLAT N10 26 31.5 E037 45 07.0	<u>323°</u> 143° 182	<u>FL 660</u> FL 245 A	40	↑	Addis Ababa FIR
▲ ERBUK N125542.4E0355731.6					Kahartoum FIR
U/UN303 (RNP 10) ▲ PARIM N12 31.7 E043 27 12.0 ▲ KASOL N11 52.8 E043 35 45.7 ▲ NAPGO N1114.5E0434352.6	<u>167°</u> 347° 40 <u>167°</u> 347° 39	<u>FL 660</u> 7500FT ALT 9000 FT B <u>FL 660</u> 7500FT ALT 10,000 FT B	20	↓	Addis Center 125.1 MHZ
			40	↑	HAAA FIR
					HCSM FIR
W15 (RNP 10) ▲ AVONO N0926.1 E0335601.4 ▲ EGMER N0905.1 E0342520.8 ▲ ANVEX N0818.6 E0352732.7 ▲ APKOD N0743.5 E0362608.7 ▲ ETGOM N0652.0 E0373745.0	<u>124°</u> 304° 35 <u>124°</u> 304° 75 <u>124°</u> 304° 71 <u>124°</u> 304° 85	<u>FL660</u> 12500ALT 13500FT A and E <u>FL660</u> FL245 A	60	↓	Kahartoum FIR Addis Ababa FIR INT UM220 INT W886 NT UB535 INT UA408
				↑	

<i>Route Designator (RNP TYPE) Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
W15 (RNP 10) ▲ ETGOM N0652.0 E0373745.0	<u>124°</u> 304° 33	<u>FL660</u> 13500ALT 14500FT A and E	60	↓	INT UA408 Addis Center 125.1MHz INT UG650 INT UR611
▲ OKNET N0632.3 E0380748.3 ▲ IMKIT N0541.2 E0392303.0 ▲ UTANO N0445.2 E0404451.1 ▲ MANDERA DVOR/DME N03 5625.17 E041 51 51.05	<u>124°</u> 304° 186 <u>124°</u> 305° 83			↑	INT UM997 INT UM216 ADDIS ABABA FIR MOGADISCIO FIR
UT124 (RNP10) ▲ GWZ VOR N 09 06.4 E 038 46.2	329° 149° 100	UNL FL170 16000 ALT A		↓	Addis center 125.1
▲ LABLA N1032.4 E037 53.9	329° 149° 72	UNL FL170 16000 ALT A			
▲ BDR VOR/DME N 11 36.4 E 03719.0	330° 150° 75	UNL FL290 A			
UT129 (RNP 10) ▲ GETOL N0810.8 E03832.3	340° 159° 157	UNL FL290 A	60	↓	
▲ IMKIT N0541.2 E03923.2	340° 169° 102	UNL FL290 A			Addis center 125.1 ADDIS ABABA FIR
▲ ALEMU N0400.2 E039 39.9	350° 169°	UNL FL290 A		↑	NAIROBI FIR

<i>Route Designator (RNP TYPE) Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
UT124 (RNP10) ▲ GWZ VOR N 09 06.4 E 038 46.2	<u>329°</u> 149° 100	UNL FL170 16000 ALT		↓	Addis center 125.1
▲ LABLA N10 32.4 E037 53.9	<u>329°</u> 149° 72	A			
▲ BDR VOR/DME N 11 35.5 E 03718.3	<u>330°</u> 150° 75	UNL FL290 A			
▲ AMUDO N12 42.7 E036 43.5	<u>331°</u> 151° 64			↑	XW19 ADDIS FIR
▲ ALRAP N 13 39.8 E 036 13.7					KHARTOUM FIR
UT139 (RNAV10) ▲GWZ VOR/DME N 09 06.4 E 038 46.2	<u>257°</u> 077° 45			↓	
▲GETIN N08 56.2 E038 01.9	<u>257°</u> 077° 55				
▲GUDER N08 43.6 E037 07.8	<u>257°</u> 077° 102	UNL FL160 14000 Alt A			
▲ANVEX N0818. 6 E035 27.5	<u>257°</u> 077° 54				X W15
▲BRO VOR/DME N080741.75 E0343341.03	<u>257°</u> 077° 18				X UM220
▲KUTOP N08 04.3 E034 16.6	<u>256°</u> 076° 70	UNL FL290 A			X UA727
▲DASTU N07 49. 4 E033 08				↑	ADDIS FIR
					KHARTOUM FIR

ENR 3.3 AREA NAVIGATION (RNAV) ROUTES

<i>Route Designator (RNP TYPE)</i> <i>Significant Points</i>	<i>Track MAG (GEO)</i> <i>VOR RDL</i> <i>DIST</i> <i>(COP)</i>	<i>Upper Limit</i> <i>Lower Limit</i> <i>Minimum flight Altitude</i> <i>Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels</i> <i>Odd/Even</i>	<i>Remarks</i> <i>Controlling Unit Frequency</i>
1	2	3	4	5	6
UM 220 (RNP 10) ▲UTOLI N05 03.3 E035 14 37.6		<u>168</u> 348° 105			NAIROBI FIR
▲IMTOR N06 47.9 E034 51.9		<u>168</u> 348° 84		↓	ADDIS ABABA FIR
▲BRO VOR/DME N080741.75 E0343341.03		<u>168°</u> 348° 57	<u>FL 660</u> FL 245 A		Addis Center 125.1 MHZ
▲EGMER N09 05.1 E034 25 .3		<u>168°</u> 348° 17	<u>FL 660</u> FL 295 A		
▲USUBA N09 24 24 E034 22 00		<u>168°</u> 348 40			
▲ AXOTI N10 03 5 E034 13 19.5				↑	ADDIS ABABA FIR
					KHARTOUM FIR
UG 651 (RNP 10) ▲ MURAL N08 45 .8 E044 45		<u>139°</u> 319° 168			MOGADISCIO FIR
▲ ALKOS N07 40.2 E045 45.8			<u>FL600</u> FL245 A	↓	ADDIS ABABA FIR Addis center 125.1MHZ 11300KHZ(HC) ADDIS ABABA FIR
				↑	MOGADISCIO FIR

<i>Route Designator (RNP TYPE)</i> <i>Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels</i> <i>Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
UM 997 (RNP 10) ▲ AVEDI N04 00.2 E040 34 50.07	<u>012°</u> 192° 46	<u>FL660</u> 7500ALT 8500FT A and E <u>FL660</u>	40	↓ INT UG 300 INT UM 216 Addis Center 125.1 MHZ Transfer Djibouti APP	NAIROBI FIR
▲ UTANO N04 45.2 E040 44 51.1	<u>012°</u> 192° 30	7500ALT 11500FT A and E			ADDIS ABABA FIR
▲ IBTAN N05 14.3 E040 51 15.4	<u>012°</u> 192° 77	<u>FL660</u> FL245 A			
▲ NIGUS N0630.2 E041 08.5	<u>012°</u> 192° 46	<u>FL660</u> 10500ALT 13500FT A and E			
▲ ETLOT N07 15.8 E41 18.5	<u>012°</u> 192° 66	<u>FL660</u> 11500ALT 12500FT A and E			
▲ AXIDA N08 20.0 E041 33.1	<u>012°</u> 192° 80	<u>FL660</u> 11500ALT 12500FT A and E			
▲ DWA VOR/DME N09 38.3 E041 50.9	<u>033°</u> 213° 72	<u>FL660</u> 11500ALT 12500FT A and E			
▲ ASTAR N10 39.1 E042 31.0	<u>033°</u> 213° 64	<u>FL660</u> 13500ALT 14500FT A and E			
▲ DTI VOR/DME N11 32.9 E043 05 36.7					
UM216 (RNP 10) ▲ HARGEISA N09 31.2 E44 05 .5	<u>230°</u> 049° 26				Mogadishu FIR ADDIS ABABA FIR
▲ AXAPO N09 15.2 E43 45 .2	<u>230°</u> 049° 96				

ENR 3.3 AREA NAVIGATION (RNAV) ROUTES

<i>Route Designator (RNP TYPE) Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
UM216(cont) (RNP 10) ▲ AXAPO N09 15 09.54 E43 45 12.68 ▲ XAPSA	<u>230°</u> 049° 96				Crossing UR780
N08 14 42.79 E42 30 19.99	<u>230°</u> 049° 92	<u>FL 660</u> FL 245 A	40		Crossing UM 997
▲ ETLOT N07 15 49.20 E41 18 27.02	<u>230°</u> 049° 98				Crossing UG300 INT W27
▲ UTSOR N06 13 36.21 E40 02 20.96	<u>230°</u> 049° 51				Crossing W15
▲ IMKIT N05 41 10.90 E39 23 13.76	<u>230°</u> 049° 157	<u>FL 660</u> FL 245 A	60		ADDIS ABABA FIR
▲ RUDOL N11 02 .4 E042 09 39.3		<u>FL660</u> FL 245 A			Nairobi FIR
UT124 (RNP10) ▲ GWZ VOR N 09 06.4 E 038 46.2	<u>329°</u> 149° 100	UNL FL170 16000 ALT A			Addis center 125.1
▲ LABLA N1032.4 E037 53.9	<u>329°</u> 149° 72	UNL FL170 16000 ALT A			

ENR 3.3 AREA NAVIGATION (RNAV) ROUTES

<i>Route Designator (RNP TYPE) Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels Odd/Even</i>	<i>Remarks Controlling Unit Frequency</i>
1 UT124(cont) (RNP10) ▲ LABLA N1032.4 E037 53.9	2	3	4	5	6 Addis center 125.1
▲ BDR VOR/DME N 11 36.4 E 03719.0	<u>329°</u> 149° 72	<u>UNL</u> FL170 16000 ALT A			
▲ AMUDO N124242.81 E0364330.62	<u>330°</u> 150° 75	<u>UNL</u> FL290 A			XW19
▲ ALRAP N 13 39 45.15 E 0361343.90	<u>331°</u> 151° 64	<u>UNL</u> FL290 A			ADDIS FIR KHARTOUM FIR
UT139 (RNP10) ▲ GWZ VOR/DME N 09 06.4 E 038 46.2	<u>257°</u> 077° 45	<u>UNL</u> 160 14000 ALT A			Addis center 125.1
▲ GETIN N08 56.2 E038 01.9	<u>257°</u> 077° 55	<u>UNL</u> FL160 14000 Alt A			

ENR 3.3 AREA NAVIGATION (RNAV) ROUTES

<i>Route Designator (RNP TYPE)</i> <i>Significant Points</i>	<i>Track MAG (GEO) VOR RDL DIST (COP)</i>	<i>Upper Limit Lower Limit Minimum flight Altitude Air Space classification</i>	<i>Lateral Limits (NM)</i>	<i>Direction of Cruising Levels</i>	<i>Remarks Controlling Unit Frequency</i>
1	2	3	4	5	6
UT139 (CONT) (RNP 10) ▲GETIN N08 56.2 E038 01.9	<u>257°</u> 077° 55	UNL FL160 14000 Alt A			↓
▲GUDER N08 43.6 E037 07.8	<u>257°</u> 077° 102	UNL FL160 14000 Alt A			
▲ANVEX N0818. 6 E035 27.5	<u>257°</u> 077° 54	UNL FL160 1400ALT A			X W15
▲GM NDB N08 08.0 E03434.5	<u>257°</u> 077° 18	UNL FL290 A			X UM220
▲KUTOP N080417.98E0341635.07	<u>256°</u> 076° 70	UNL FL290 A			X UA727
▲DASTU N07 49 21.34 E033 08 00.97				↑	ADDIS FIR KHARTOUM FIR

ENR 3.4 HELICOPTER ROUTES

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ENR 3.5 OTHER ROUTES

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ENR 3.6 En-route holding

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ENR 4. RADIO NAVIGATION AIDS/SYSTEM
ENR 4.1 RADIO NAVIGATION AIDS EN-ROUTE

<i>Name of Station (VOR/VAR)</i>		<i>ID</i>	<i>Frequency</i>	<i>Hours of Operations</i>	<i>Coordinates</i>	<i>ELEV</i>	<i>DME</i>	<i>Antenna</i>	<i>Remarks</i>
1	2	3	4	5	6	7			
ADDIS ABABA									
VOR/DME	ADS	112.9 MHz		H24	085830.1N 0384757.8E	33FT	Emission A2	APP 50W	<i>Location:</i> 400M from Center line at about Mid Point left of RWY25R. DME co-located with VOR displaced THR RWY 25R. <i>Power:</i> 100 Watts <i>Coverage:</i> 63NM at FL11500 but unreliable beyond 20NM, at altitude of 12500 ft and below from 280°-040° radials, due to Mount Entoto
GAWASA GWZ DVOR/DME		115.9 MHz		H24	090622.3N 0384611.7E		<i>Emission:</i> A2 <i>Power:</i> 100 Watts <i>Coverage:</i> 200NM <i>Location:</i> 8 NM North of Addis Ababa <i>Bole International Airport.</i>		
NDB	AB	333 KHZ		H24	085950.5N 0385145.3E		<i>Emission:</i> A2 <i>Location:</i> 0.75 MAG, 3.2 NM displaced THR RWY 25 <i>Power:</i> 100 Watts <i>Coverage:</i> 150NM.		
L	BL	352 KHZ		H24	085905.9N 0384912.6E		<i>Emission:</i> A2 <i>Location:</i> 0.75 MAG, 0.54NM Displaced THR RWY 25R. <i>Power:</i> 50 Watts <i>Coverage:</i> 150NM.		
ARBA MINCH									
L	AM	275KHZ		H24	060327.7N 0373608.5E		<i>Emission:</i> A2; <i>Power:</i> 100 Watts		
							<i>Coverage:</i> 150NM		
AXUM									
NDB	AX	440KHZ		H24	0140845.5N 0384634.8E		<i>Emission:</i> A2 <i>Power:</i> 100 Watts <i>Coverage:</i> 150NM.		
BAHIR DAR									
VOR/DME	BDR	114.4MHZ		H24	N113623.11 E0371901.98				

<i>Name of Station (VOR/VAR)</i>		<i>ID</i>	<i>Frequency</i>	<i>Hours of Operations</i>	<i>Coordinates</i>	<i>ELEV</i>	<i>DME</i>	<i>Remarks</i>
1	2	3	4	5	6	7		
DIRE DAWA	DWA							
VOR/DME			117.7KHZ	H24	093837.030N 0415039.56 E		24 FT	<i>Emission: A2</i> <i>Location: 1KM. from RWY 15 threshold centerline.</i>
L	AY		241KHZ	H24	093837.9 N 0415038.9 E			<i>Emission: A2</i> <i>Location: 330MAG, 0.54 NM</i> <i>THR RWY 15, 100 Watts</i>
DEBRE								
MARKOS	DM		235KHz	H24	*101231.7 N 0374507 E			<i>Coverage: 50NM</i> <i>THR RWY 15, 100 Watts</i> <i>Emission: A2</i> <i>Coverage: 150NM Power: 100 Watts</i>
NDB								
GAMBELLA								
VOR/DME	BRO		114.5MHZ	H24	*080741.75 N 0343341.03E			<i>Emission: A2</i> <i>Power: 100 watts</i> <i>Coverage :150NM</i>
GONDER								
L	AZZ		349 KHz	H24	12 2953.46149N 372616.93983E			<i>Power: 100 watts</i> <i>Coverage : 50NM</i> <i>Emission: A2</i>
JIMMA								
NDB	JM		263 KHZ	H24	*074000N 0365000E			<i>Power: 100 Watts</i> <i>Coverage: 100 NM</i> <i>Elevation:-1857.9mAMSL</i> <i>Emission :A1</i> <i>Location:105°MAG,0.58NM THR</i>
LAKE	LA		215KHz	H24	*070400N 0383000E			<i>Emission: A2</i> <i>Coverage: 200NM;</i>
AWASA								
NDB								<i>Power: 75 Watts</i>
LALIBELA	LLB		390 KHz		115840.9N 0385900.5E			<i>Emission: A2</i> <i>Coverage: 100 NM</i> <i>Power: 100 Watts</i> <i>Emission: A2</i>
NDB								
MEKELE	MK		256KHZ	H24	11 28 30.4N 039 31 18.2E			<i>Coverage: 100 NM</i> <i>Elevation:2249</i>
L								
CVOR/DME	QHA	116.6MHZ(CH 113X)		H24	N132821.980 E0393129.093			<i>Power: 100 Watts.</i> <i>Coverage: 100 NM</i> <i>Elevation:2254</i>

* Coordinates not in WGS-84 reference

<i>Name of Station (VOR/VAR)</i>		<i>ID</i>	<i>Frequency</i>	<i>Hours of Operations</i>	<i>Coordinates</i>	<i>ELEV</i>	<i>DME</i>	<i>Remarks</i>
1	2	3	4	5	6	7		
LAKE	LA	215KHz	H24	*070400N 0383000E				<i>Emission: A2</i>
AWASA								<i>Coverage: 200NM;</i>
NDB								<i>Power: 75 Watts</i>
LALIBELA	LLB	390 KHz		115840.9N 0385900.5E				<i>Emission: A2</i>
NDB								<i>Coverage: 100 NM</i>
MEKELE	MK	256KHZ	H24	11 28 30.4N 039 31 18.2E				<i>Power: 100 Watts</i>
NDB								<i>Emission: A2</i>
CVOR/DME	QHA	116.6MHZ(CH 113X)	H24	N132821.980 E0393129. 093				<i>Coverage: 100 NM</i>
								<i>Elivation:2249</i>
								<i>Power: 100 Watts.</i>
								<i>Elivation:2254</i>

- Coordinates not in WGS-84 reference

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ENR 4.3 NAME CODE DESIGNATORS FOR SIGNIFICANT POINTS

Name - code designator		Coordinates	ATS Route or Other Route	Name - code designator		Coordinates	ATS Route or Other Route
1	2	3	1	2	3		
ADABA	05 41 50.8N 041 53 50.2E		ATS	BELDI	05 10 20.8N 042 2314.2E		UG657
ALEMU	04 00.2N 039 39.9		W27	DASTU	074921.34N 0330800.9E	UT124/UT139	
ALKOS	074010.71N 0454550.41E	UM651/UB403		DAGAP	0624.0N 03412.0E		B535
ALNAB	08 55 07.0N 044 13 02.0E	UR/R775		DAVIT	11 34 06.9N 036 2501.7E	UR/R611	
AMUDO	124242.81N 0364330.62E	UT124		EKBOR	14 18 04.3N 040 2656.3E	UA/A451	
ALRAP	133945.15N 0361343.90E	UT124		EKBUL	04 00 09.2N 036 0501.6E	UA408	
ANTAX	03 59 48.0N 035 22 06.0E	UA/A727		EGMES	06 57 02.3N 043 0502.3E	UG657, UR780	
ANVEX	08 18 .6N 035 27 .5E	W15/W886/UT 124		EGMER	09 00 44.5N 034 2520.8E	UM220/W15	
APDAN	121547.13N 0380516.57E	UT139		EGNAK	09 09 38.7N 037 0509.3E	UB736	
APDOS	15 39 59.6N 041 39 50.2E	UR/R775		ETGOM	06 51 58.0N 037 3745.0E	W15/UA408	
APKOD	07 38 37.2N 036 26 08.7E	W15/UB535		ETLOT	071549.20N 411827.02E	UM216	
ASKEN	09 05 43.6N 043 55 44.4E	UG657		EPSIX	06 38 08.4N 034 4001.5E	UB535/UA727	
ASOLE	09 56 25.7N 040 13 56.8E	UB/B535		EPTOV	08 25 55.7N 042 2450.3E	UR780	
ARSHI	09 33 03.6N 043 24 21.4E	INT FIR		ERBUK	12 55 42.4N 035 5731.6E	UR995	
ASTAR	10 39 07.1N 042 31 02.3E	UM997		ETKET	14 41 05.9N 038 53 02E	UG/G650	
AVEDI	04 00 09.2N 040 34 50.07E	UM997		ETIVA	08 23 17.4N 0382349.7E	UA408/UG300	
AVONO	09 20 25.8N 0335601.4E	UA/A727		ETOKO	09 08 15.9 N 0375318.2E	UB736/UG300	
AVUNI	12 5543.6843N 038 52 31.738E	W18		ETONI	10 00 37.7 N 0371726.5E	UG300 INT UTA	
AVUSI	04 55 08.9N 044 00 02.4E	UR 780		FIR	0617546N 03427337E	B535	
AXAPO	091509.54N 434512.68E	UM216		FIR BDRY	051841.0N 0350126.7E	UA/A727	
AXIDA	08 20 01.8N 0413308.2E	UM997					
AXOTI	10 03 31.3N 034 1319.5E	UM220					

Name - code designator		ATS Route or Other Route	Name - code designator		ATS Route or Other Route
1	2	3	1	2	3
GABDA	064155.28N 0444456.26E	UR/R775/UB403	MANDA	12 35 30.5N 042 47 20.0E	UR/R775
GADGI	125408.72235N 0400859.8376E	W17	MANDERA	03 5625.17N 041 5151.05E	W15/UG300 UG657/ATS
GETIN	08 56 09.7N 030 14 07.0E	W886/UG300/UT124 UT139	MARCO	10 18 31.7N 037 45 07E	UR/R611
GETAR	14 39 05.9N 039 15 01.9E	UR780	MASLO	07 24 57.5N 039 03 14.8E	UG300
GETOL	08 10 47.7N 038 32 17.3E	UG/G650/UG300	MIWAS	09 25 18.9N 040 25 30.6E	W886
GIBAX	053943.68N 0433955.20E	UR780/UB403	MURAL	08 45 49.7 N 044 45 20.5E	UM651(UG651)
GISHE	10 27 34.3N 039 45 50.8E	UA408	MUSBI	08 13 .3N 046 20.4E	UB403
GUDER	08 43 33.1N 037 07 48.2E	W886/UT124/UT139	NETIN	0518.0N 04000.0E	W15
HARGEISA	093112.00N 440530.00E	UM216	NIDEG	10 35 19.0N 041 22 06.0E	UB/B535,UR780
IBRAD	13 25 03.9N 041 57 51.6E	UA/A451	NIGUS	06 30 14.4 N 041 08 28.1E	UM997
IBTAN	05 14 19.4N 040 51 15.4E	UG300/UM997	OKLAT	10 26 31.5N 037 45 0.7E	UR995
ITGEV	14 17 31.1N 036 30 46.2E	UB525	OKNET	06 32 17.5N 038 07 48.3E	W15/UG650
ITPOG	08 44 06.3N 038 09 49.7E	UB535/UG300	PARIM	12 32 02.1N 043 27 15.0E	UA/A451,UB535
IMKIT	05 41 10.9N 039 23 03.0E	W216/W15	PURAD	145505.8N 0415356.3E	UR/R775,UB526
IMKOS	14 32 29.9N 039 41 03.0E	UR/R993	RAGAS	121632N 0421616.5E	UR/R993
IMTOR	06 47.9N 034 51.9E	UM220,UB535	RANSO	104650.6N 0384611.7E	UG/G650
KEDON	14 15 44.1N 042 36 33.4E	UA 408	RUDOL	0400.2N 0372933.8E	UG/G650
KOFTA	08 12 57.8N 037 20 40.5E	UB535	SHALA	072851.8N 0382150.6E	UG/G650
KUSUB	06 41 14.3N 046 40 02.6E	UM651,UG651	SOLIR	0135230.1N 0421930.0E	UA408/UR/R775
KUTOP	080417.98N 0341635.07	UT139	SOLUL	050508.8N 0450802.4E	UR/R775
LABLA	1032.4N 03753.9E	W887/UT124	TADRA	081637.9N 0415250.2E	ATS
LUBAR	10 33 07.1N 043 36 02.4E	UR/R775			

<i>Name -code designator</i>	<i>ATS Route or Other Route</i>			<i>Name-code designator</i>	<i>ATS Route or Other Route</i>			
	<i>Coordinates</i>	1	2	3	<i>Coordinates</i>	1	2	3
TATGU	125326.9N 0413425.8E			UR/R993/UA408				
TIBIT	114619.2E 0404358.0N			UA408/UR780				
TIKAT	122424.6N 0353813.6			UR/R611/UG300				
TORBA	121042.6N 0440208.4E			UB/B535/UA/A451				
USUBA	091627.0N 0342159.0E			UM220/UB736				
USUNO	120243.16N 0362357.48E			W20				
UTEDU	131508.26887N 0384200.37079E			W19				
UTANO	044511.2N 0404451.1E			W15/UM997				
UTOLI	050220.8N 0351437.6E			UM220				
UTSOR	061336.21N 400220.96E			UM216				
UVARO	103849.2N 0380631.1E			UB525				

ENR 4.4 Aeronautical Ground lighting En-route

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ENR 5.1 NAVIGATION WARNINGS

ENR 5.1 PROHIBITED, RESTRICTED AND DANGER AREAS

Identification, Name and Lateral Limits	<u>Upper limit</u> <u>Lower limit</u>	Remarks(Time of activity, type of restriction, nature of hazard)
1	2	3
RESTRICTED AREAS		
HAR-1 Area bounded by lines joining successively the following points; 085500N 385600E 84900N 0385300E 83900N 8500E 080700N 385600E 80700N 0400000E 85500N 400000E	<u>FL290</u> GND	
HAR-2 Area bounded by lines joining successively the following points; 080700N 385600E-073000N 0384900E 073000N 0403000E- 084900N 0403100E -085500N 0400000E- 080700N 0400000E	<u>FL290</u> GND	

RESTRICTED AIRSPACE

INTENTIONALLY

L E F T

B L A N K

5-2 Military exercise and training areas**5.2-1 General**

All airspace in which potential hazard to aircraft operations may exist and all areas over which the operation of civil aircraft may, for one reason or another be restricted either temporarily or permanently, are classified according to the following three types of areas as defined by ICAO.

5.2.2 Danger area

An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times. This term is used only when the potential danger to aircraft has not led to the designation of the airspace as restricted or prohibited. The effect of the creation of the danger area is to caution operations or pilots of aircraft that it is necessary for them to assess the dangers in relation to their responsibility for the safety of the aircraft.

5.2.3 Prohibited area

An airspace of defined dimensions, above the land areas or territorial waters of a state within which the flight of aircraft is prohibited. This term is used only when the flight of civil aircraft within the designated airspace is not permitted at any time under any circumstances.

5.2.4 Restricted Area

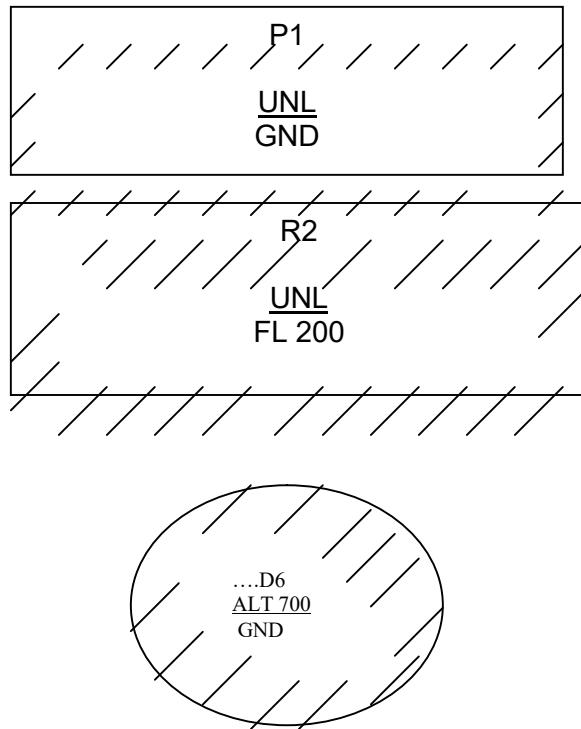
An airspace of defined dimensions, above the land areas or territorial waters of a state, within which the flight of aircraft is restricted in accordance with certain specified conditions. This term is used whenever the flight of civil aircraft within the designated airspace is not absolutely prohibited but may be made only if specified conditions are complied with. Thus, prohibition of flight except at certain specified times leads to the designation of the airspace as a "restricted area" as would prohibition except in certain meteorological conditions. Similarly, prohibition of flight unless special permission had been obtained, leads to the designation of a restricted area. However, conditions of flight imposed as a result of application of rules of the air or air traffic service practices or procedures (for example, compliance with minimum safe heights or with rules stemming from the establishment of controlled airspace) do not constitute conditions calling for designation as restricted area.

Each area is numbered and a single series of numbers is used for all areas regardless of type to ensure that a number is never duplicated. Each area is as small as practicable, and contained within simple geographical limits such as a circle, square, etc.

Note:-Presently no prohibited or danger area is established within the Ethiopian territory.

The type of area involved as indicated by the letter "P" for Prohibited, "R" for Restricted" and "D" for Danger, Preceded by the nationality letter "HA" for example areas are assigned numbers and letters in the following manner HAP1, HAD5, HAD6, HAP4, HAR2, HAD11 etc.

Each area is described in the tabulation found in RAC 5-2 which indicates its lateral and vertical limits, the type of restriction or hazard involved, the times of activation and other pertinent information.



The upper and lower limits are shown in the manner indicated. Altitudes are given in feet.

- 5.2-5 System and method of activation
 - 5.2.5.1 NOTAMs are issued to notify activation of areas which are activated on a non-scheduled basis.
- 5.2.6 Remarks
 - 5.3.1.1 There are no activities of a dangerous nature taking place outside the restricted areas.
- 5.3.2 System and Method of activation

- 5.2.6.1 Nil
- 5-3 Other activities of dangerous nature
 - 5.3.1 General
 - 5.3.2.1 NOTAMs are issued to notify activation of areas which are activated on a non scheduled basis.
 - 5.3.3 Remarks
 - 5.3.3.1 Nil

ENR 5-3 Other activities of a dangerous nature

I N T E N T I O N A L L Y

L E F T

B L A N K

5.4 Air Navigation Obstacles Enroute

5.4.1 General

5.4.1 The following air navigation obstacle list contains all significant obstacles (man-made fixed objects) located within the Ethiopian territory which have been notified to the Aeronautical Information Service, the height of which reaches or exceeds 100m from GND. These obstacles are shown on the World Aeronautical Chart-ICAO 1:1,000,000 Air navigation obstacles, which do not reach the height of 100m from GND but have been qualified as significant obstacles according to Annex 4 to the convention, Para 2-12.1 are shown on relevant aeronautical charts only.

1. Obstacle with day and night marking (white and amber).
2. Obstacle with red lighting.

<i>OBST ID or designation</i>	<i>Type of Obstacle</i>	<i>Coordinates</i>	<i>ELEV/HGT GND (M)</i>	<i>OBS LGT Type/Colour</i>
1	2	3	4	5
Abi Adi	TV Mast	133737.30N 385922.90E	1886/60	½
Adaba	TV Mast	070349.00N 393742.00E	3792/80	½
Adabtolie	TV Mast	09170027N 401255.00E	772/60	½
Adama	TV Mast	083305.26N 391359.92E	1970/80	½
Adama	TV Mast	083308.00N 391400.00E	1970/45	½
Adiremest	TV Mast	134430.00N 371921.00E	2144/100	½
Addis Ababa (Radio Fana)	Radio Mast	085807.00 N 384130.00E	2564/72	½
Addis Ababa (Mount Furi)	TV Mast	085302.00 N 384110.00E	2877/60	½
Addis Ababa	TV Mast	090106.51N 384450.51E	2460/72	½
Adigrat	TV Mast	141450.80N 392455.60E	3076/80	½
Akasta	TV Mast	105158.00N 391058.00E	3208/60	½
Alemaya	Radio Mast	092400.00N 415900.00 E	2446/122	½
Ambo	TV Mast	084838.20N 375228.50E	3345/100	½
Amentila	TV Mast	132151.70N 394228.20E	2083/80	½
Ankober	TV Mast	09411700N 394403.20E	3645/80	½
Arba Minch	Radio Mast	060200.00N 373400.00 E	1395/95	½
Arba Minch	TV Mast	060000.00N 370100.00 E	1465/45	½
Arba Minch	Radio Mast	055947.12N 373224.69 E	1355/90	½
Asaita	TV Mast	114300.00 N 412100.00 E	545/45	½
Asaita	TV Mast	113430.95N 412558.33E	354/45	½
Assosa	TV Mast	100352.3N 343243.66E	1580/45	½
Assossa	TV Mast	100352.3 N 343438.2 E	1580/60	½
Axum	TV Mast	140702.70N 384337.51E	2340/60	½
Axum	TV Mast	140900.00 N 384200.00 E	2075/60	½
Bahir Dar	Radio Mast	113600.00 N 372200.00 E	2050/131	½
Bahir Dar	Radio Mast	113200.00 N 372400.00 E	1927/127	½
Debre Birhan	TV Mast	094100.00 N 393100.00 E	2720/45	½
Debre Marcos	TV Mast	101900.00 N 374200.00 E	2495/60	½
Debre Marcos	Radio Mast	101700.00 N 374400.00 E	2724/137	½
Debre Zeit	TV Mast	084600.00 N 385800.00 E	2010/25	½
Dessie	TV Mast	110800.00 N 393800.00 E	2640/45	½
Dessie	Radio Mast	111100.00 N 393700.00 E	3262/131	½
Dilla	TV Mast	062652.00 N 382145.00 E	2180/30	½

*Coordinates are not in WGS-84 reference

<i>OBST ID or designation</i>	<i>Type of Obstacle</i>	<i>Coordinates</i>	<i>ELEV/HGT GND (M)</i>	<i>OBS LGT Type/Colour</i>
1	2	3	4	5
Desse	TV Mast	110711.00N 393649.00E	3018/100	½
Dessie	Radio Mast	110916.00N 393911.00E	2641/84	½
Dessie	TV Mast	110711.00N 393815.00E	3018/45	½
Dilla	TV Mast	062613.00N 382346.00E	2345/30	½
Dilla	TV Mast	062613.00N 382339.00E	2345/100	½
Dire Dawa	TV Mast	093515.00N 415138.13E	1406/32	½
Dire Dawa	TV Mast	093515.00N 415004.00E	1406/60	½
Ditchoto	TV Mast	115252.00N 413604.00N	602/80	½
Durame	TV Mast	071445.00N 375438.00E	2184/60	½
Furri	TV Mast	085257.50N 384111.41E	2837/60	½
Furri	TV Mast	085257.50N 384112.60E	2837/80	½
Fik	TV Mast	080755.00N 421758.00E	1228/80	½
Filtu	TV Mast	050812.00N 403127.00E	1268/80	½
Fitche	TV Mast	094644.30N 383818.30E	3530/80	½
Gambela	TV Mast	081455.82N 343551.33E	969/45	½
Geja Dera	Radio Mast	084538.27N 0383940.68E	2317/86	½
Geja Jewle	Radio Mast	074706.44 N 383840.73E	2242	½
Gilgel Beles	TV Mast	110921.00N 362040.00E	1070/60	½
Ginir	TV Mast	070858.00N 404251.00E	2013/80	½
Goba	TV Mast	070015.43N 395803.66E	2678/45	½
Gode	Radio Mast	055839.58N 433311.64E	304/47	½
Gode	TV Mast	060609.00N 433307.32E	324/45	½
Gode	TV Mast	060609.00N 430052.00E	324/60	½
Gonder	TV Mast	123718.80N 372803.03E	2361/25	½
Gonder	TV Mast	123749.00N 372804.00E	2361/60	½
Gore	TV Mast	080906.30N 353203.80E	2054/100	½
Guba	TV Mast	11159.2N 351817E	888/80	½
Harer	Radio Mast	091827.13N 420633.93E	2031/187	½
Harer	TV Mast	091719.00N 420728.00E	2163/40	½
Hargele	TV Mast	051332.00N 421028.00E	308/80	½
Haramaya	TV Mast	092321.00N 420016.00E	2096/60	½
Harer	TV Mast	091719.00N 420728.00E	2163/60	½
Hirna	TV Mast	091308.00N 410554.00E	1859/60	½
Humera	TV Mast	141711.00N 363635.00E	604/60	½
Immi	TV Mast	062713.00N 420842.00E	387/80	½
Injibara	TV Mast	105956.91N 365305.22E	2295/60	½
JIJIGA	TV Mast	092109.00N 424205.47E	2300/9	½
JIJIGA	TV Mast	092109.00N 424209.00E	2300/80	½
Jimma	TV Mast	074308.00N 365200.70E	2289/80	½
Jinka	TV Mast	054205.00N 364104.00E	2397/80	½
Kebridehar	TV Mast	064427.00N 441605.00E	533/60	½
Kemissie	TV Mast	104231.00N 395203.00E	1431/60	½
Kibre Mengst	TV Mast	055248.24N 420730.85E	2147/60	½
Kuni	TV Mast	085959.20N 405156.30E	2748/60	½
Limugenet	TV Mast	080518.00N 365708.00E	1744/60	½

*Coordinates are not in WGS-84 reference

<i>OBST ID or designation</i>	<i>Type of Obstacle</i>	<i>Coordinates</i>	<i>ELEV/HGT GND (M)</i>	<i>OBS LGT Type/Colour</i>
1	2	3	4	5
Maichew	TV Mast	124958.70N 393345.80E	2987/100	½
Maji	TV Mast	060901.00N 353547.00E	2527/80	½
Mega	TV Mast	040535.00N 381923.00E	2099/100	½
Mekele	Radio Mast	133139.96N 392833.39E	1986/72	½
Mekele	TV Mast	133323.3N 392903.36E	2500/60	½
Mekele	TV Mast	133323.3N 393236.90E	2500/100	½
Mizan Teferi	TV Mast	070052.45N 353511.93E	1408/	½
Metu	Radio Mast	081750.68N 353800.54E	1787/127	½
Metu	TV Mast	081750.68N 353800.54E	/42	½
Moyale	TV Mast	033157N 390214.4E	1166/60	½
Nefas Mewcha	TV Mast	114206.60N 382324.70E	3436/100	½
Negele Borena	Radio Mast	051938.79N 393511.99E	1521/51	½
Negeleborena	TV Mast	05200.50N 393534.40E	1578/60	½
Nekemte	TV Mast	090519.06N 363259.55E	2440/32	½
Nekemte	TV Mast	090637.00N 363757.00E	2440/100	½
Robie	Radio Mast	070856.79N 395948.14E	2460/77	½
Samre	TV Mast	131045.40N 391252.50E	2080/80	½
Sawla	TV Mast	062333.00N 370435.00E	1281/80	½
Shashemene	TV Mast	070736.00N 383718.00E	2422/80	½
Shashemene	TV Mast	070744.23N 383708.96E	2422/45	½
Shawra	TV Mast	115956.70N 365400.50E	2303/100	½
Shebel	TV Mast	082716.60N 343515.60E	1558/80	½
Shewarobit	TV Mast	100010.00N 39532700E	1382/60	½
Shire	TV Mast	140551.00N 381602.00E	1984/60	½
Sodo	TV Mast	065215.00N 364557.00E	2180/60	½
Temenja Yazh	TV Mast	070722.14N 370435.00E	2256/80	½
Tendaho	TV Mast	114018.80N 405630.40E	542/60	½
Warder	TV Mast	065811.00N 452041.00E	573/80	½
Weldia	TV Mast	115113.60N 393634.40E	2442/60	½
Wolkite	TV Mast	081746.60N 374654.10E	1902/80	½
Were Elu	TV Mast	103511.00N 392525.00E	2753/60	½
Yabello	TV Mast	045314.30N 380510.60E	1942/60	½
Yirgacheffe	TV Mast	060943.00N 381216.00E	1898/60	½
Zobil	TV Mast	121053.00N 394358.00E	2186/60	½

*Coordinates are not in WGS-84 reference

ENR 5-5 Aerial sporting and recreational activities

I N T E N T I O N A L L Y

L E F T

B L A N K

ENR 5.6 Bird Migration and Areas with Sensitive Fauna

1. Migratory Bird Activity

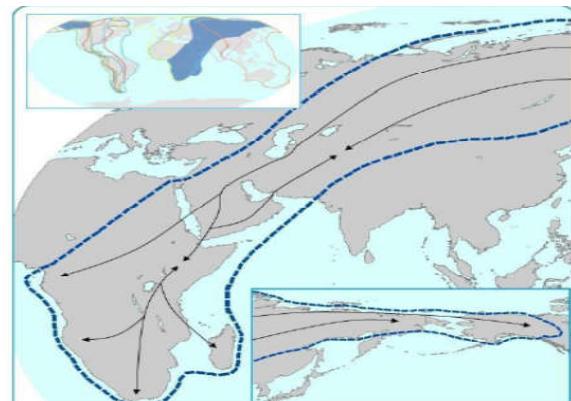
1.1 Bird strike risk increases because of bird Migration during the months of March through April and August through November.

1.2 The altitudes of migrating birds vary with winds a loft, weather fronts, terrain elevations, cloud conditions, and other environmental variables. Most strike occurs at low altitude.

1.3 Of the 872 species of birds recorded in Ethiopia a little over one third of them (280) are classified here as migrants they include representative from a wide range of avian families of sea bird, fresh water species, raptors, wader, etc.... the largest proportion involves birds breeding in the pale arctic region in the north which migrate south to Africa in the autumn and return north during spring .at the opposite extreme are birds which breed in the southern afro tropical region ,or in area even for their south which migrate north after breeding.

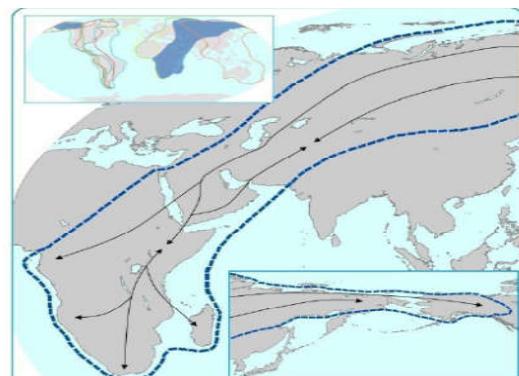
1.4 Probably all these migrants are adapted to a greater or lesser extent, sometimes very finely, to various environmental condition which affect them example of this are late arrival in eastern Africa of long –distance flight of **Amur falcons** from the far east whose departure coincides with the onset of period of prolonged tail wind during the north –east monsoon and the north ward spring and southward autumn migration of vast number of **Pale arctic migrants** over eastern Ethiopia.

East African fly way



Willow Warbler

The Willow Warbler *Phylloscopus trochilus* is one of the most common summer visitors to Eurasia, with a population estimated to stand between 300 million and 1.2 billion individuals. They are the most numerous Palaearctic-African Migrant, accounting for 15.8% of all the passerines and Near-passerines traveling between the two continents.



- Breeding
- Non-breeding
- Passage
- ↔ Migration route of *P.t. yakutensis*

Northern Bald Ibis

It was discovered that the birds undertook a 6,115 km round-trip, across seven countries, and spent the winter in the Ethiopian highlands.



1. Reducing Bird Strike Risks

2.1 The most serious strikes are those involving ingestion into an engine (turboprop and turbine jet engines) or windshield strikes. These strikes can result in emergency situations requiring prompt action by the pilot.

2.2 Engine ingestions may result in sudden loss of power or engine failure. Review engine out

Procedures, especially when operating from airports with known bird hazards or when operating near high bird concentrations.

2.3 Windshield strikes have resulted in pilots experiencing confusion, disorientation, loss of Procedures before flying in these areas.

2.4 When encountering birds en route, climb to avoid collision because birds in flocks generally

Distribute themselves downward, with lead birds being at the highest altitude.

2.5 Avoid over flight of known areas of bird concentration and flying low altitudes during bird Migration. Lakes, wildlife refuges and other natural areas contain unusually high local concentration of birds which may create a hazard to aircraft.

1. Reporting Bird Strikes

3.1 Any number of stakeholders may provide either some or all of the information necessary to complete a wildlife-strike report; in fact the truth of an individual wildlife strike may only become clear once the contributions—no matter how small—of various witnesses have been gathered. The greater the amount of information gathered, the more precise the data analysis will be, enabling airport wildlife-Management personnel to optimize strike-reduction strategies. (REF.ECAA-AC-AGA012 on bird strike reporting.

4. Reporting Bird and Other Wildlife Activities

4.1 If you observe birds or other animals on or near the runway, request airport management to disperse the wildlife before taking off or contact the tower regarding large flocks of birds and report the:

4.1.1 Geographic location.

4.1.2 Bird type (kit, pigeon, eagle, Vulture, etc.).

4.1.3 Approximate numbers.

4.1.4 Altitude.

4.1.5 Direction of bird flight path.

5. Pilot Advisories on Bird and Other Wildlife Hazards

5.1 Many airports advise pilots of other wildlife hazards caused by large animals on the runway

Through the Airport/Facility Directory and the NOTAM system. Collisions between landing and Departing aircraft with animals on the runway are increasing and are not limited to local airports. These accidents have also occurred at several major airports. Pilots should exercise extreme caution when warned of the presence of wildlife on and in the vicinity of airports. If in close proximity to movement areas you observe hyena or other large animals, advise the tower or airport management.

6. Area with sensitive fauna

6.1 Awash National Park

Awash National Park, 211 Kms east of Addis Ababa cover 756 square kilometers). It is known by bird's concentration.

6.2 Bale Mountains National Park

The BMNP encompasses a broad range of habitats between 1,500 and 4,377 m altitude. These provide a large number of niches for animals, and as a result there is great variety in the fauna160 bird species found in the park.

6.3 Nechisar National Park

Location 06000'N/37045'E

Description

Nechisar is an IUCN category II National Park it contain abaya and Chamo Lake with grate Variety of bird concentration.

6.4 Lake tana

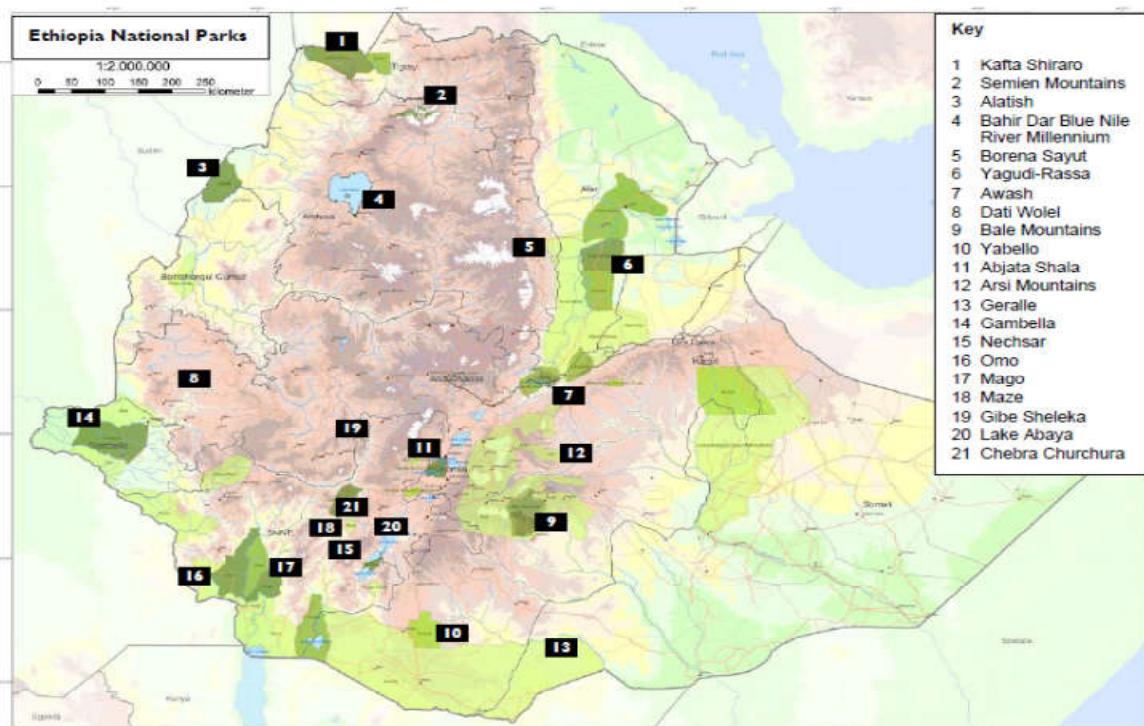
Internationally recognized as IBA (International Bird Area) (BirdLife International, 2012) Lake Tana and its wetlands are well known for their bird diversity and their importance as roosting site for migratory bird species such as the *Common Crane (Grus grus)*, *Northern Shoveller (Anas clypeata)*, *Northern Pintail (Anas acuta)*, *Black-tailed*

6.5 Lake Abijatta

Over 400 species have been recorded from the park. The park is at one of the narrowest parts of the Great Rift Valley, a major flyway for both Pale arctic and African migrants, particularly raptors, flamingos and other water birds. Among the globally threatened species known from the park are: *Aquila heliacal* (a rare passage migrant);

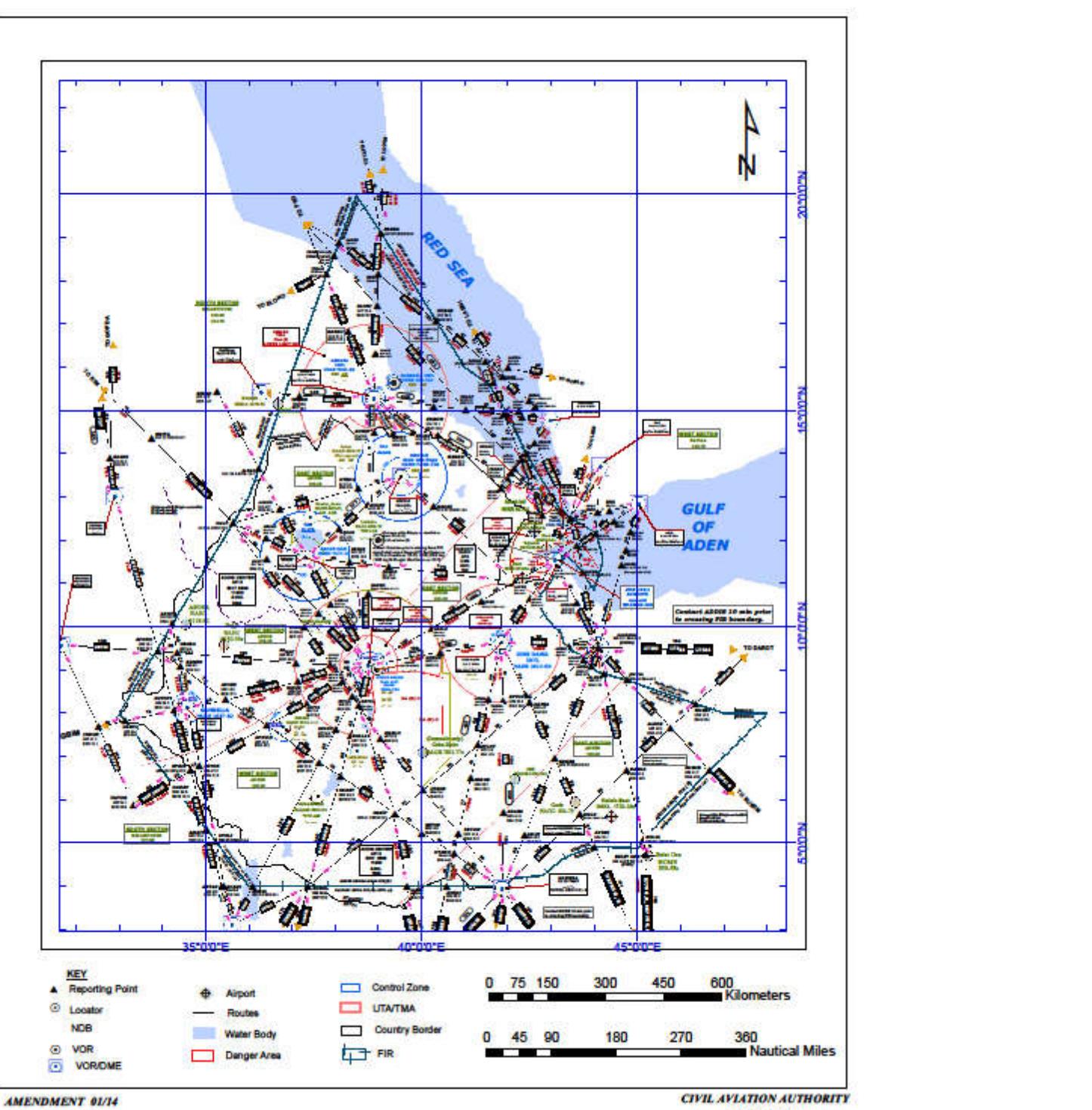
Falcon Neumann (an uncommon passage migrant with a few wintering);
Circus macrourus (fairly common passage migrant, with a few wintering); and
Acrocephalus griseldis (status unknown)
Glareola nordmanni has also been recorded

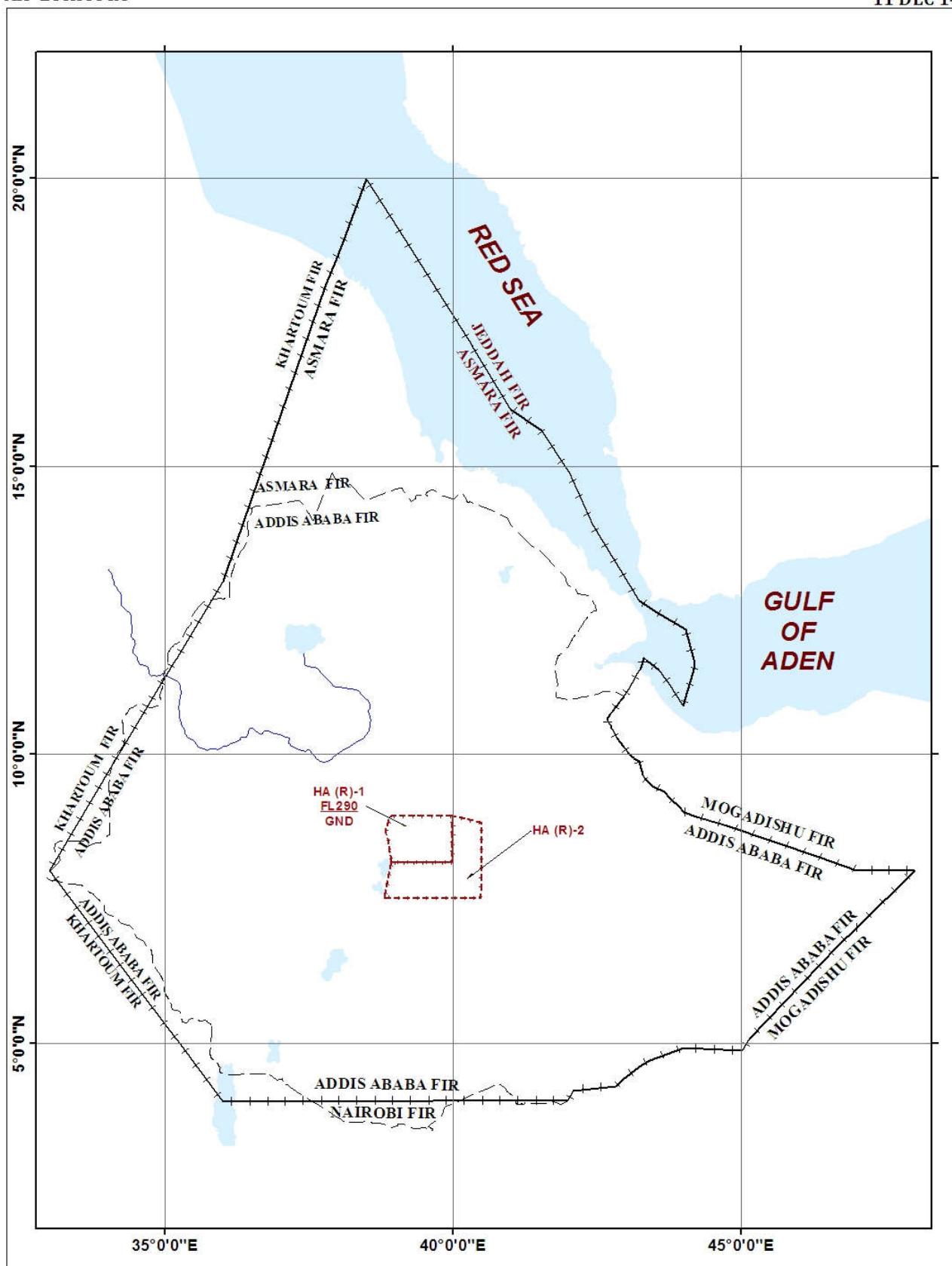
Ethiopia National Parks



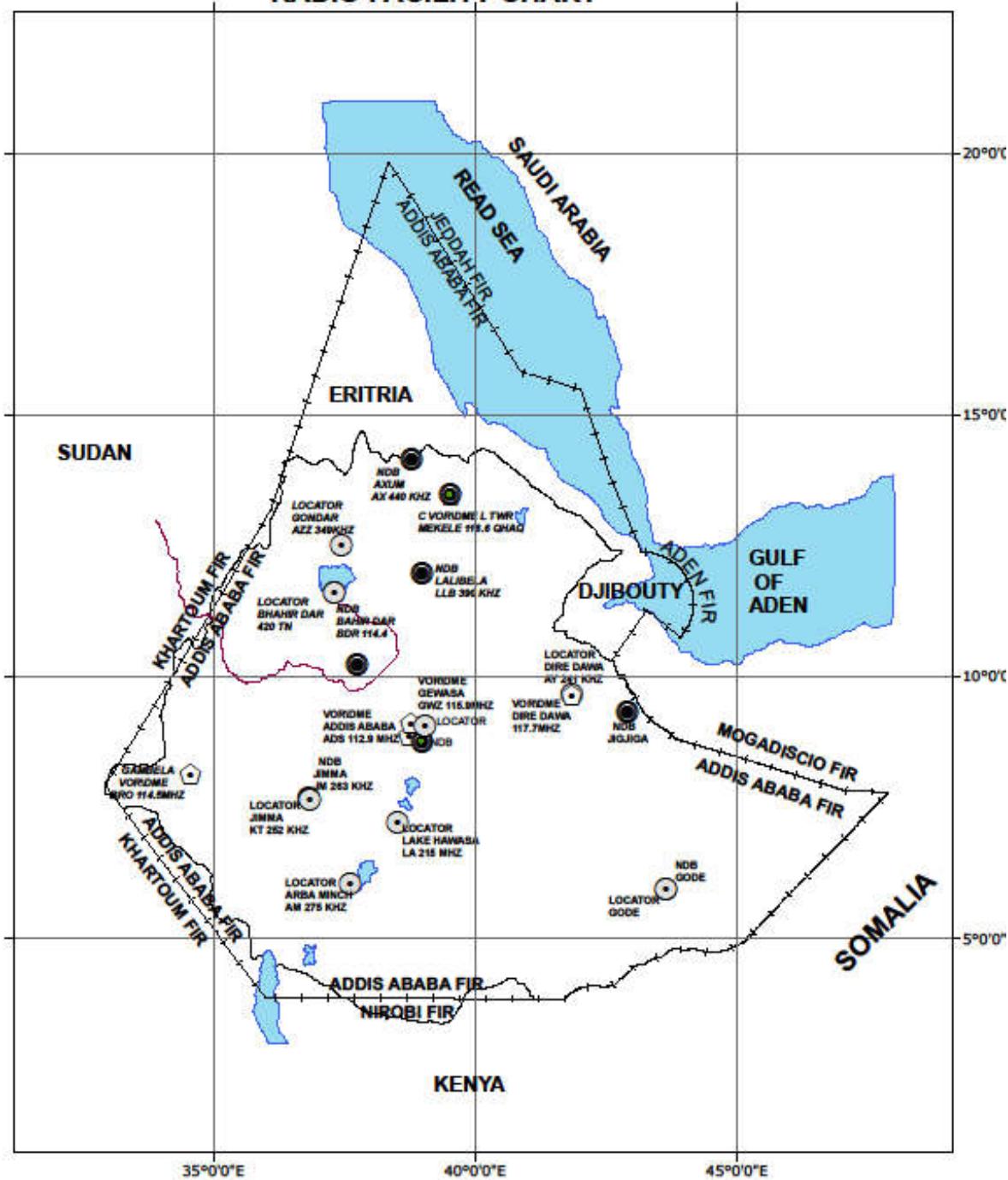
ENROUTE CHART-ICAO
ADDIS ABABA FIR

ENR 6.1
26 JUN 14





RADIO FACILITY CHART

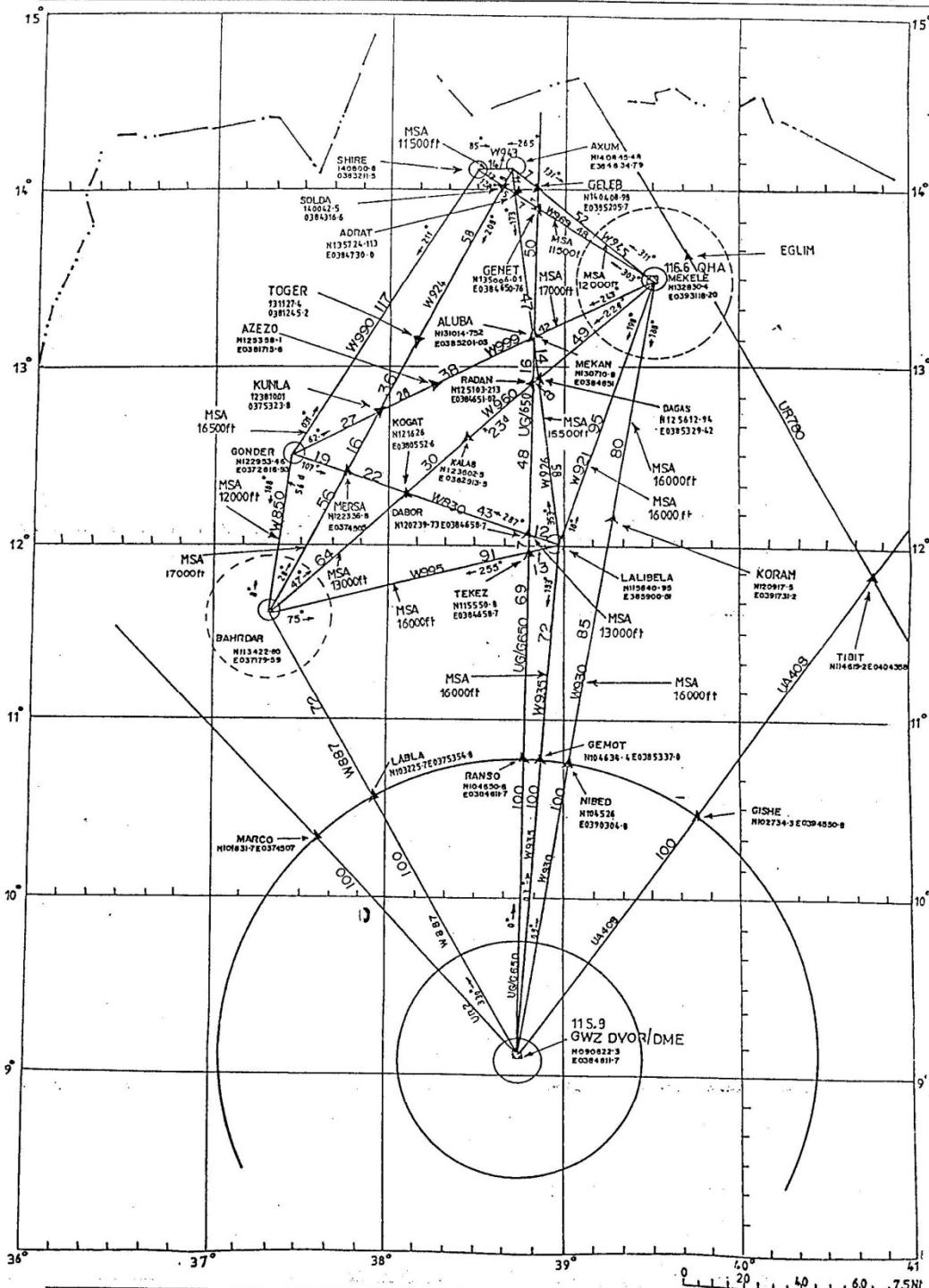


TWR 118.1
APP 119.7

ENR 6-4
02 FEB 06

AIP ETHIOPIA

NORTHERN ETHIOPIA DOMESTIC ROUTE NETWORK



Amendment 1/06

*Civil Aviation Authority
Addis Abeba*

PART THREE

AERODROMES[AD]

PART 3 AERODROMES (AD)**AD 0**

AD 0-1	PREFACE	Not applicable
AD 0-2	Record of AIP amendments	Not applicable
AD 0-3	Record of AIP supplements	Not applicable
AD 0-4	Checklist of AIP pages	Not applicable
AD 0-5	List of hand amendments	Not applicable

AD 0.6 Table of contents to part 3

	<i>Page</i>
AD 1 AERODROMES/HELIPORTS-INTRODUCTION	
AD 1-1 Aerodrome/heliport availability	AD 1.1-1
AD 1-2 Rescue and fire fighting services and snow plan	AD 1.2-1
AD 1-3 Index to aerodromes / heliports	AD 1.3-1
AD 1-4 Grouping of aerodromes/heliports	AD 1.4-1
AD 1-5 Status of certification of aerodromes	AD 1.5-1
AD 2. AERODROMES	
AD 2-HAAB ADDIS ABABA/Bole Int'l	AD 2-HAAB-1
AD 2-HAAM ARBA MINCH/Arba Minch	AD 2-HAAM-1
AD 2-HASO ASOSA/Asosa	AD 2-HASO-1
AD 2-HAAX AXUM/Axum	AD 2-HAAX-1
AD 2-HABD BAHIR DAR/Bahir Dar	AD 2-HABD-1
AD 2-HADR DIRE DAWA/Dire Dawa Int'l	AD 2- HADR-1
AD 2-HAGM GAMBELLA/Gambella	AD 2-HAGM-1
AD 2-HAGB GOBA/Goba Robe	AD 2-HAGB-1
AD 2-HAGO GODE/Gode	AD 2-HAGO-1
AD 2-HAGN GONDER/Gonder	AD 2-HAGN-1
AD 2-HAHU HUMERA/Humera	AD 2-HAHU-1
AD 2-HAJJ JIJIGA/Jijiga	AD 2-HAJJ-1
AD 2-HAJM JIMMA/Jimma	AD 2-HAJM-1
AD 2-HAKD KEBRI DEHAR/Kebri Dehar	AD 2-HAKD-1
AD 2- HALL LALIBELLA/Lalibella	AD 2-HALL-1
AD 2-HAMK MAKALE/Makale Alula Aba Nega	AD 2-HAMK-1
AD 2-HASM SEMERA/Semera	AD 2-HASM-1
AD 2-HASR SHIRE/Shire	AD 2-HASR-1
AD 3. not applicable	

AD 1. AERODROME INTRODUCTION**AD 1.1 AERODROMES AVAILABILITY****1. General conditions under which aerodromes/heliports and facilities are available for use.**

1.1 The conditions under which aircraft may land, be parked, housed or otherwise dealt with at any of the aerodromes under the control of the Ethiopian Airports Enterprise(here in after referred to as) "The Airport Enterprise" are as follows:-

1.1.1 The fees and charges for the landing, parking or housing of aircraft shall be those published by the authority in the AIP or NOTAM. The fees and charges for any supplies or services which may be furnished to the aircraft at any aerodrome under the control of the Enterprise by or on behalf of the Enterprise shall, unless it is otherwise agreed before such fees or charges are incurred, be such fees and charges as may be determined by the Enterprise for that aerodrome. The fees and charges referred to in this paragraph shall accrue from day to day and shall be payable to the Enterprise on demand.

1.1.2 The Enterprise shall have a lieu with priority on the aircraft, its

parts and accessories as to enforce the payment of such fees and charges.

1.1.3 If payment of such fees and charges is not made to the Enterprise within thirty days after a letter demanding payment thereof has been sent to the registered owner of the aircraft, the Enterprise shall be entitled to bring action against the aircraft, in one of the Ethiopian concerned courts which could result the sell, removal of otherwise disposal of the aircraft and any of its parts and accessories, and to apply the proceeds from so doing to the payment of such fees and charges.

1.1.4 Neither the Enterprise nor any servant or agent of the Government shall be liable for loss of or damage to the aircraft, its parts or accessories or any property contained in the aircraft, however such loss or damage may arise, occurring while the aircraft is on any of the aerodromes under the control of the Enterprise or is in the course of landing and taking-off at any such aerodrome, or of being removed or dealt with elsewhere for the purpose of paragraph 1-1.3 of these conditions.

1.2 Landing made elsewhere than at International Airports

If an aircraft, for reasons of an unavoidable cause, is compelled to take its landing elsewhere than at an international airport or designated alternate airport, the pilot-in-command shall report the landing as soon as practicable to the international airport at which the scheduled landing was to take place. This notification may be made through air-ground channels if this method of communication is available, or by telephone or telegram. If the pilot-in-command is unable to contact the international airport or designated alternate airport, he shall try to inform of his landing to the nearest aerodrome police or military authority.

In this respect, the pilot-in-command shall be responsible for ensuring that:-

- a) if permission has not been granted to the aircraft at the previous landing, contact

between other persons on the one hand and the passengers and crew on the other is avoided;

- b) cargo, baggage and mail are not removed from the aircraft except as provided below;
 - i) any food stuff(s) or beverage of overseas origin, or any plant material shall not be removed from the aircraft except where local food is unobtainable.
 - ii) all food refuse including peelings, cores, stones of fruit etc. must be collected and returned to the galley refuse container, the contents of which should not be removed from the aircraft except for hygienic reasons, in which case they must be destroyed by burning or deep burial.

1.3. Traffic of persons and vehicles on aerodromes

1.3.1 Demarcation of zones

- 1.3.1.1 The grounds of each aerodrome are divided into two zones;
- a) a public zone comprising the part of the aerodrome open to the public;
 - b) a restricted zone comprising the rest of the aerodrome.

1.3.2 Movement of persons

1.3.2.1 All areas of the airport except those areas open to the public are restricted and no person shall enter custom, Immigration or Public Health (Quarantine) areas, any private offices, hangars, maintenance areas, landing areas, ramp and apron areas or any restricted area on the airport posted as being closed to the public except:-

- a) persons assigned to duty or having official business there in;
- b) authorized representatives of CAA;
- c) persons having prior permission of the CAA;
- d) passengers under appropriate supervision, entering upon the ramp and apron areas for purposes of embarkation or disembarkation.

1.3.3 Movement of vehicles

1.3.3.1 The movement of vehicles in the restricted zone is strictly limited to vehicles driven or used by persons carrying a traffic permit or an official card or admittance from the Airport Administration.

1.3.3.2 Drivers of vehicles, of whatever type, driving within the confines of the aerodrome, must conform with the general direction followed by other traffic respect the traffic signs, the posted speed limits and generally comply with the provisions of the highway code and with the instructions given by the competent authorities.

1.3.3.3 No person shall operate a vehicle on the airport in a careless or negligence manner, or in disregard of the rights and safety of others, or without due caution or circumspection or at a speed or in a manner which endangers or is likely to endanger persons or property, or while he is under the influence of intoxicating liquor or any narcotic or habit forming drug.

1.3.3.4 No person shall park a vehicle or leave same on any airport high way or parking and storage area, except at such places and for such periods of time as may be prescribed or permitted by the Airport Administration.

1.3.4 Policing

1.3.4.1 Care and protection of aircraft, vehicles, equipment and goods for which the aerodrome facilities are used are not the responsibility of the state or any concessionaire, who cannot be held responsible for loss or damage which is not incurred through action by them or their agents.

2. Applicable ICAO documents

ICAO standards and recommended practices contained In Annex 14 Volumes I and II are applied without differences.

3. Civil use of military aerodromes

Civil aircraft are not permitted to land at any aerodrome not listed in this AIP except in cases of real emergency or where special permission has been granted from military aeronautical authority.

4. CAT II/III Operations at aerodromes

Not applicable

5. Friction measurement device used and friction level below which RWY is declared slipper when it is wet.

Not available

6. Other information

Nill.

1-2 Rescue and fire fighting services and snow plan**1-2.1 Rescue and fire fighting services**

Adequate rescue and fire fighting vehicles, equipment and personnel have been provided at Addis Ababa/Bole Dire Dawa, Bahir Dar and Mekele international airports available for use by international commercial air transport. Foamatic and rapid intervention vehicles are available at, Gambella, Gondar, Jimma and domestic airports. The scale of protection has been determined in

accordance with the guidance in attachment A to Annex 14 and is indicated in AD 2. The number of trained personnel available is also indicated. Each rescue and fire fighting unit is controlled by the local airport administration. Full service on a 24 hour basis is normally provided only at Addis Ababa/Bole and Dire Dawa international airports.

1-2.2 SNOW PLAN

Not applicable.

AD1.3 INDEX TO AERODROME

Aerodrome Location Indicator	Name	Type of Traffic Permitted to use the aerodrome/heliport			Reference to AD section and Remarks
		International National (INTL-NTL)	IFR-VFR	S=Scheduled NS=NON SCHEDULED P=PRIVATE	
1	2	3	4	5	
ADDISABABA/BOLE	INTL-NTL	IFR/VFR	S-NS-P	AD2-HAAB	
HAAB					
ARBAMINCH	NTL	VFR	S-NS	AD2-HAAM	
HAAM					
ASOSA	NTL	VFR	S-NS	AD2-HASO	
HASO					
AXUM	NTL	VFR	S-NS	AD2-HAAX	
HAAX					
BAHIR DAR	INTL-NTL	IFR/VFR	S-NS	AD2-HABD	
HABD					
DIREDAWA	INTL-NTL	IFR/VFR	S-NS	AD2-HADR	
HADR					
GAMBELLA	NTL	IFR/VFR	S-NS	AD2-HAGM	
HAGM					
GONDAR	NTL	VFR	S-NS	AD2-HAGN	
HAGN					
JIMMA	NTL	VFR	S-NS	AD2-HAJM	
HAJM					
JIJIGA	NTL	VFR	S-NS	AD2-HAJJ	
HAJJ					
KEBRI DEHAR	NTL	VFR	S-NS	AD2-HAKD	
HAKD					
GODE	NTL	VFR	S-NS	AD2-HAGO	
HAGO					
LALIBELLA	NTL	VFR	S-NS	AD2-HALL	
HALL					
MAKELE	INTL-NTL	IFR/VFR	S-NS	AD2-HAMK	
HAMK					
SEMERA	NTL	VFR	NS	AD2-HASM	
HASM					
SHIRE	NTL	VFR	S-NS	AD2-HASR	
HASR					

NON-INSPECTED AND STATE OF SERVICEABILITY UNKNOWN AIR STRIPS

<i>Aerodrome/Location indicator coordinates , direction and Distance from the city,elevation /TEMP MAG VAR /annual change</i>	<i>RWY design Magnetic Bearing dimension strengths and surface condition.</i>	<i>RWY and TWY markings</i>	<i>Availability of hotel and restaurant</i>	<i>Obstacle local flying restriction</i>	<i>Remark</i>
ADABA-HAAD 0703N 03924E 7900FT 1.8E(1995),0.6'increasing	01/19 010°/190° 902x46	white stones on both sides of RWY			
AWARE 08° 18'N 044° 18'E EL 3800'FT	24/06 240°/60° 4593FTx131FT	RWY surface is very smooth and hard.	Currently not inspected		
BACO – HABC 05 47 N 036 33 E SW of town ,5 miles 4300FT 1.70°E(1995).6' increasing	05/23 051°/231° 1116X60 Grass	White stone on both sides of RWY	In town	NIL	
BARRE 04°38'N 42°44'E EL1290 FT	24/06 220°/040° 4300FTx165FT	Hill at the end of r/w 220 rises 100° angel, hence take off on 220° only when strong wind from south	Currently not inspected		
BEICA-HABE 09 23 11N 034 31 19E NNW of Town,3miles 5410FT Variation 2°E (1995)/.6' increase.	15/33 150°/330° 1331X45 Grass slope 1.36%	white stones on both sides of RWY	In town		
BEGI 0921N3431E 5410 FT	15/33 150°/330° 1331x42 Grass on clay.				
Calub-HACB 060913N 0443239E 1501ft	03/21 030°/210° 2200X50 Red clay soil with loose sandy gravel covered by grass slope 2%	RWY&TWY SIDE and end markings every 200m interval			
DEBRE MARCOS- HADM 1020N3746E NE of town,2km 8136 FT 2.10E (1995)/. 6'increase.	16/34 1600/3400 1380X43 grass	white painted stones on both sides of RWY	in town		Hills on approach path of RWY 17
DEBRE TABOR-HADT 1158N 3800E 8491FT 2.20E (1995)/. 6'increase.	18/36 1800/3600 1270X60 Grass	white stones on both sides of RWY		Hills on approach path 1800	
DEMBIDOLLO-HADD 08 35N 034 53E NE of town,6NM 5200FT Variation 20E (1995)/.6' increase.	15/33 1500/3300 1250X50 Grass on clay soil	white stones on both sides of RWY	In town		

AIP ETHIOPIA

NON-INSPECTED AND STATE OF SERVICEABILITY UNKNOWN AIR STRIPS

<i>Aerodrome/Location indicator coordinates , direction and Distance from the city,elevation /TEMP MAG VAR /annual change</i>	<i>RWY design Magnetic bearing dimension strengths and surface condition.</i>	<i>RWY and TWY markings</i>	<i>Availability of hotel and restaurant</i>	<i>Obstacle local flying restriction</i>	<i>Remark</i>
DEGAHABUR- HADB 0814N4333E 3400 FT	08/26 0800/2600 1200x50				
DESSIE/Combolcha-HADC 11 05N 039 43E SE of DESSIE, 12 miles 6117FT Variation 2.2° E(1995) .6' increase.	04/22 040°/220° 1110X91 Turf	White stones on both sides of the RWY.	In town	Mountains surrounding the field	Since terrain and mountains surround the field, maintain ALT14000FT. Unless full visual contact, with RWY pass into valley along Borchena river NW of field. Land only on a heading of 220°. Abrupt pinnacles at SW end of RWY.
Dolo Ado Somalia region N041043.86 E42217.40 N04107.49 E42137.04 164M above MSL	06/24 1% longitudinal slope Profile gradient 1.5%transverse slope is provided from each side of the center line. RWY width & length 30/1500 Strip width & length 90/2000m apron dimension 100x80 TWY dimention 30mx30m RWY surface well compacted selected sub base material.	The wind blows East to West E/W and wind sock is provided at both RWY ends RWY is marked as required		Free from obstacle	Open drainage ditch is provided along the fly over area of the air strip The strip is not fenced.
FINCHA-HAFN 093500N0372100E 7600 FT 2.10E (1995)/. 6'increase.	05/23 0500/2300 1200X20 Sod				
GELADIN-HAGL 0657N 04624E 428M AMSL	06/24 0600/2400 1500X60	Compacted gravel but not smooth		clear on both sides	
GHINNER-HAGH 070900N0404300E NW of town,3km 1.80E (1995)/. 6'increase	13/31 1300/3100 1200x70 Rough grass	White stones on both sides of RWY		Long hill 300ft above RWY, 1Mile N of field	
Gojam administration West of Kunzila village 115158N 365790E 1950m above MSL	07/25 800X30 2% SLOPE Strip alignment EEN/WWS Strip length 920mts Plant crushed base Course mixed for Bound with clay soil				<i>The airstrip is more or less meets the ICAO requirements set on ANNEX-14 Aerodrome reference code letters A</i>
GORE-HAGR 08 10N 035 35E NE of town ,3 km 6580 FT Variation 20E(1995)/.6' increase.	03/21 0300/2100 1190X55 Turf	White painted stones on both sides of RWY	In town	Hills on approach path of RWY 03, take-off on RWY 21 is prohibited.	

<i>Aerodrome/Location indicator coordinates, direction and Distance from the city,elevation /TEMP MAG VAR /annual change</i>	<i>RWY design Magnetic bearing dimension strengths and surface condition.</i>	<i>RWY and TWY markings</i>	<i>Availability of hotel and restaurant</i>	<i>Obstacle local flying restriction</i>	<i>Remark</i>
<i>HELIPORT Lake Awassa Shore 070458N 0382846E 5560FT (1995 MTS)</i>	<i>CEMENT CONCRETE</i>	<i>PROPER HELIPORT DESIGNATION AND EDGE MARKINGS WIND SOCK AVAILABLE</i>		<i>CLEAR NORTH AND WEST</i>	
<i>HILA Somalia region Ogaden zone N060402 E0434804/ N060347 E0434745 587.45M above MSL</i>	<i>0523 Profile gradient width & length 30/1000 apron dimension 30x50 RWY gradient 1.53%</i>	<i>Marked as required</i>		<i>Free from obstacle</i>	
<i>IMI-HAIM 062800N 0420700E 1200ft West of town 5km approximate 1.60E(1995)/. 6'increase</i>	<i>04/22 0400/2200 1066X38</i>	<i>white stones on both sides of RWY</i>		<i>Two low hills visible from lower altitude</i>	
<i>KEBRI DEHAR- HAKD 06 43 50N 04413 43E W of Town and N of old airstrip 2000 FT Variation 1.50E(1995)/. 6'increasing</i>	<i>09/27 081.50/ 2700 1700x50 Gravel soil & Turf</i>		<i>In town</i>		
<i>KELAFO-HAKL 0536N4420E East of town,5km approximately 1730 FT 1.50E (1995)/. 6'increase.</i>	<i>07/25 0700/2500 1200X61 whitish red clay</i>	<i>white stones on both sides of RWY</i>		<i>Approach zone clear both directions</i>	
<i>Kole Ogaden zone N045017 E414319 N450049 E414326 370m above MSL</i>	<i>01/19 010°/190° 1300X45 Well compacted base course material</i>	<i>The necessary strip marking is in place</i>		<i>Obstacles on both ends are not critical for aircraft operation</i>	
<i>MAJI-HAMJ 0550N3534E 2500FT NNW of town,8km approximately 1.80E (1995)/. 6'increase</i>	<i>15/33 1500/3000 1387X45 Turf extremely soft during rains</i>				
<i>MASLO-HAML 062100N 0394700E 4180FT 1.80E (1995)/. 6'increase</i>	<i>09/27 0900/2700 1200X50</i>	<i>white stones on both sides of RWY</i>		<i>High mountains to N of the airfield and mountains 10,000ft,elevation 10-15 miles N and NW of airfield</i>	
<i>MENDI HAMN 0946N 3506E 5500FT S of tow,2km approximately 20E (1995)/. 6'increase</i>	<i>15/33 1450/3250 12x70 Grass</i>			<i>Low hills on approach path SE end of air strip and trees on N end. Landing on 3250 and takeoff on 1450 at all times.</i>	
<i>METEMA-HAMM 125600N 0361000E 4 Miles NE of RWY/Atbara river 2650ft 20E (1995)/. 6'increase</i>	<i>10/28 0950/2750 rough black soil</i>	<i>White painted stones on both sides of RWY</i>		<i>Hills on approach path RWY 10</i>	

NON-INSPECTED AND STATE OF SERVICEABILITY UNKNOWN AIR STRIPS

<i>Aerodrome/Location indicator coordinates, direction and Distance from the city, elevation /TEMP MAG VAR /annual change</i>	<i>RWY design Magnetic bearing dimension strengths and surface condition.</i>	<i>RWY and TWY markings</i>	<i>Availability</i>	<i>Obstacle local flying restriction</i>	<i>Remark</i>
MIZAN TEFERI-HAMT 06 58N 035 32E SW of Town ,3NM 4396FT Variation 20 E (1995) /.6'increase.	06/24 060°/240° 1263X65 Grass.	White painted stones on both sides of RWY	In town	Terrain on approach path RWY 24 Recommended landing on 0600 at all times and take-off on 2400.	
MUI-HAMR 0549N3548E 1700 FT	06/24 060°/240° length 1500mt				
NEGELE BORENA-HANG 051700N0394200E 5200FTAMSL SE of Negele town,18km from Dolo Odo road	04/22 037°/217° 3000X50 quite firm red soil	Markings on both sides and ends of strip		clear on both sides	
NEJO-HAJO 0930N3528E 6150FT SSE of town,8 miles approximately 20E (1995)/. 6'increase	01/19 0100/1900 1270X40 Red dirt	White painted stones on both sides of RWY		Hills North of the airfield	
NEKEMT- HANK 090300N036360E 6500 FT SE of 8km from city 20E (1995)/. 6'increase.	13/31 1250/3050 1250X46 Smoothed loose dirt	White painted on both sides of RWY		Terrain NW of the air field Landing recommended on 3050 and take off to SE on 1250.	
SEMERA-HASM 114746N 040 59 00E N of the town or A.A/Assab road. 1436 FT.	13/31 1300/3100 2400X45 Strip 2600x80 PCN 30 Volcanic ashes gravel.	White painted stone at two ends and side edge every 100-M.	In the town	Clear both ends	More than 75 of annual wind is from SW.
SHAKISO-HASK 05 44N 038 55E SE of town ,4 miles approximately 5600 FT Variation 1.8 E (1995)/.6' increase	07/25 0700/2500 1500X57 Compacted selected Material fill.	White painted stone on both sides of RWY	In town	Terrain NW of the air field. Wind socks is available	Recommended for DHC-5 and DHC6

NON-INSPECTED AND STATE OF SERVICEABILITY UNKNOWN AIR STRIPS

<i>Aerodrome/Location indicator coordinates , direction and Distance from the city,elevation /TEMP MAG VAR /annual change</i>	<i>RWY design Magnetic bearing dimension strengths and surface condition.</i>	<i>RWY and TWY markings</i>	<i>Availability of hotel and restaurant</i>	<i>Obstacle local flying restriction</i>	<i>Remark</i>
SHILABO-HASL 06 05 20N 044 45 33E Near the city 1143 FT AMSL.	04/22 040°/ 220° 2000X40 Firm gravel soil.	Adequate RWY Marking.		Clear on both Approach sides.	
SODDO-HASD 065000N0374600E 6400FT SE of town,5.4NM 1.8E (1995)/. 6'increase	04/22 035°/215° 1300X45 Grass	<i>White painted on both sides of RWY</i>		Landing uphill on 0350 and takeoff on 2150 at all times. Uphill takeoff prohibited. Hills on approach path RWY 22 Mt Damota 3.5 miles NNW of RWY. Elevation 9000ft	
South people national state/west of Wolayta Sodo 065340N 371909E 1090MTS above mean sea level	01/19 010°/190° 1200x50 Well compacted plant crouched base course material. Slope exceeding 2% with one undulation			Clear on both sides	
TANA BELES- HAPW 111200N362500E 1110m AMSL	07/25 070°/250° 2000X30 crushed rock with binding material and covered with grass			On RWY 07right and left up to 300m length along the RWY strip sides due to forestry and antenna masts it is not clear. The rest of the RWY portion is clear.	
TIPPI-HATP 07 07N 35 32E SW of town, 12 miles approximately 4100FT 20E (1995)/. 6'increase.	14/32 135°/315° 1302X45 Slope 3.28% very rough	<i>White painted stones on both sides of RWY</i>	In the town	<i>Terrains on approach path RWY 32 Approaches and landing to be made to heading of 315° and take-off to 135°</i>	
WACCA- HAWC 0710N3710E 4200FT NW of Wacca,14 miles 1.80E (1995)/. 6'increase	17/35 165°/345° 1219X46 Grass	<i>White painted on both sides of RWY</i>		<i>Hills on approach path of RWY 17</i>	

NON-INSPECTED AND STATE OF SERVICEABILITY UNKNOWN AIR STRIPS

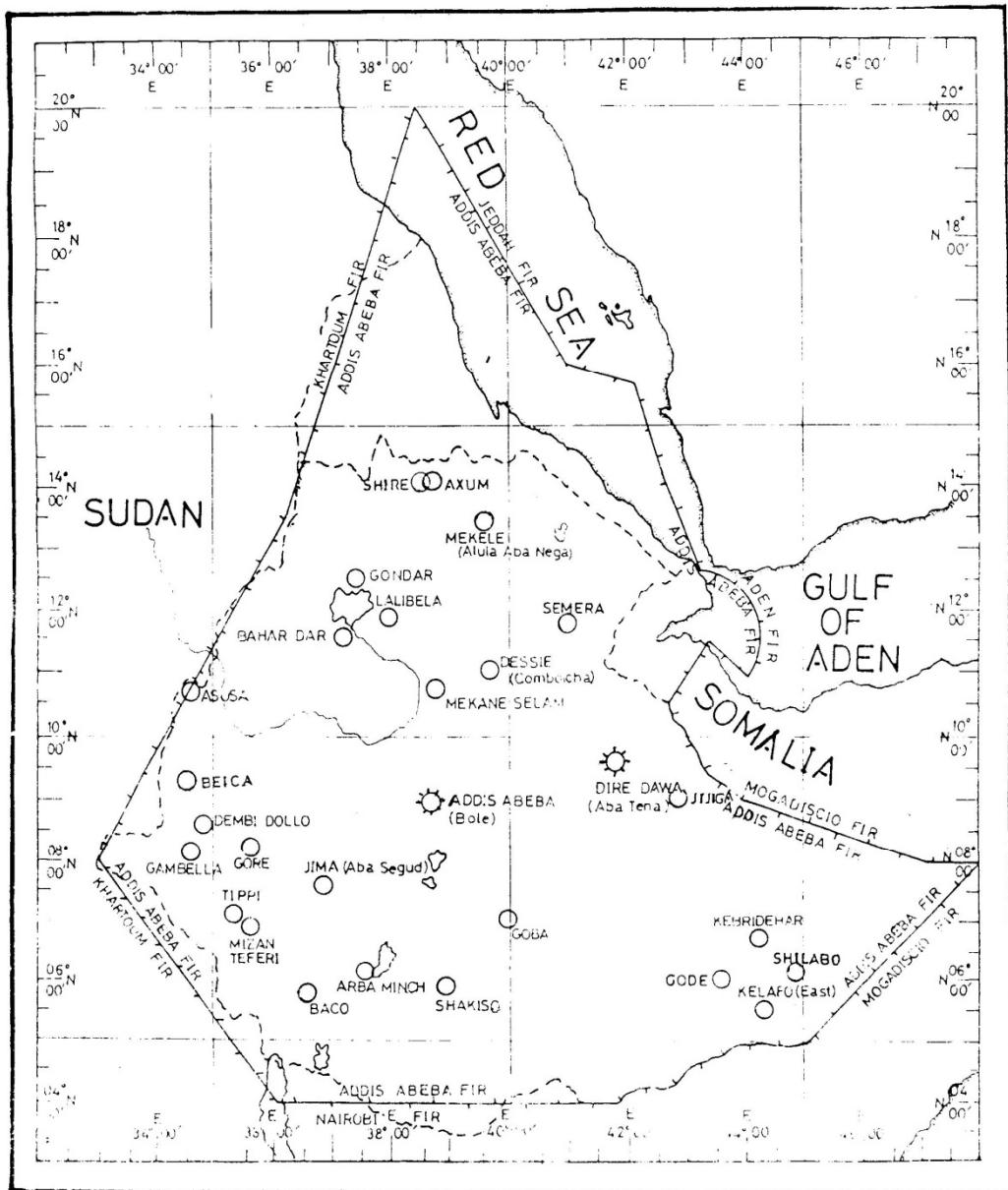
<i>Aerodrome/Location indicator coordinates, direction and Distance from the city, elevation /TEMP MAG VAR /annual change</i>	<i>RWY design Magnetic bearing dimension strengths and surface condition.</i>	<i>RWY and TWY markings</i>	<i>Availability of hotel and restaurant</i>	<i>Obstacle local flying restriction</i>	<i>Remark</i>
WARDARE- HAWR 065800N0452000E 1804 FTAMSL Near the city	05/23 050°/230° 1500X50 <i>Graded but not well compacted</i>	RWY surface red clay soil and sand total length is 5100FT the first 700 ft of RWY 23 cleared maintained. Along the edge of the RWY there is a high embankment formed from the soil cleared from the RWY. Surface becomes soft after rain.		<i>Clear on both approach sides.</i>	Currently not inspected
Gambela Jacranda Sauth West of Jikawo 080644N332310E 395m above MSL	02/20 1000x25 <i>Strip alignment North/South Strip length 1200mts RWY strip width 45mts Well graded and compacted black cotton soil. extremely soft during rain Runway profile almost flat Apron at south end of the runway side</i>	There are proper markings Wind sock on both ends.		Clear on both sides	The strip should not be use during rainy season.

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AIPETHIOPIA

AD1-39
02 FEB 06

AERODROME INDEX CHART



INTERNATIONAL AD

NATIONAL AD

Amendment 1/06

Civil Aviation Authority
Addis Ababa

AD 1-4 grouping of aerodromes

The Criteria applied by the Federal Democratic Republic of Ethiopia in grouping aerodromes for the provision of information in this AIP are as follows:

1. International aerodromes

- a) Aerodromes of entry and departure for international air traffic, where all formalities concerning customs, immigration, health, animal and plant quarantine and similar procedures are carried out and where air traffic services are available on a regular basis.
- b) Secondary/ Other International Aerodrome

2 Domestic aerodromes/heliports

Aerodromes/heliports available for domestic air traffic only.
After prior co-ordination with the Civil Aviation Authority.

3. Military aerodromes

Aerodromes where air traffic is permitted solely with prior authorization of the Military Aeronautical Authority.

AD 1.5 STATUS OF CERTIFICATION OF AERODROMES

Aerodrome Name Location indicator	Date of certification	Validity of certification	Remark
1	2	3	4
Addis Ababa Bole International/ HAAB	1 JUN 2015	25 JUN 2017	Certified by ECAA
Mekele international HAMK	9 MAY 2015	8 MAY 2017	Certified by ECAA
Bahir Dar international HABD	9 MAY 2015	8 MAY 2017	Certified by ECAA
Dire Dawa international HADR	9 MAY 2015	8 MAY 2017	Certified by ECAA

AD 2. AERODROMES

HAAB- ADDIS ABABA

AD 2.1 AERODROME LOCATION INDICATOR AND NAME

1	<i>Location name</i>	Addis Ababa/Bole
2	<i>Airport name</i>	Addis Ababa/Bole International
3	<i>ICAO Location indicator</i>	HAAB

AD2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP coordinates and site at AD</i>	085830.1470N 0384757.8387E VOR/DME 400m from the center line at aprx middle of RWY 25R and to the left of RWY 25L
2	<i>Direction and distance from city</i>	140°, 8km (4.3NM) from Addis Ababa City Hall
3	<i>Elevation/reference temperature</i>	2333.5m/25°C
4	<i>MAG VAR/Annual change</i>	2°E (1995) /6' increasing
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	Postal Address: ETHIOPIAN AIRPORTS ENTERPRISE P.O.BOX 90652 ADDIS ABABA, ETHIOPIA Telephone:- 251 11 66 50 400, 251 11 6650566 Airport manager 251 11 665 06 70 Telefax 251 11 66 50 686 E-mail: Bole.a.p@ethionet.et
6	<i>Types of traffic permitted</i>	IFR/VFR
7	<i>Remarks</i>	

AD2.3 OPERATIONAL HOURS

1	<i>AD Administration</i>	H24
2	<i>Customs and immigration</i>	H24
3	<i>Health and sanitation</i>	H24
4	<i>AIS Briefing office</i>	H24
5	<i>ATS Reporting office</i>	Nil
6	<i>Met Briefing office</i>	H24
7	<i>ATS</i>	H24
8	<i>Fueling</i>	H24
9	<i>Handling</i>	H24
10	<i>Security</i>	H24
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	Nil

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AD2.4 HANDLING SERVICES AND FACILITIES

1	<i>Cargo-handling facilities</i>	Fork lift (6 tons), conveyer belts, Sufficient number of various Vehicles and equipment
2	<i>Fuel/Oil types</i>	Jet A-1 in bulk and Avgas available in packed containers Oil not available
3	<i>Fuelling facilities/capacity</i>	Refuellers Capacity of 2 trucks 65000 LTS each, 1 truck 18000LTS 1 truck 16000LTS 1 truck 55000, 1 truck 45000LIT, 2 trucks 25000LTS each, storage 1.9 & 3.1 million LTS (8 tankers)
4	<i>De-icing facilities</i>	Nil
5	<i>Hangar space for visiting aircraft</i>	Available by arrangement with Ethiopian Airlines Hangar NR145x140FT Unheated, Hangar NR2 25x109FT Unheated.
6	<i>Repair facilities for visiting aircraft</i>	Major and minor repairs can be undertaken by Ethiopian Airlines Hangar with facilities for engine maintenance change and overheat by prior arrangement and instrumentation available for B-767 B757, B737, B707, L100, ATR42, DHC6 and light aircraft such as Cessna
7	<i>Remarks</i>	Nil

AD 2.5 PASSENGER FACILITIES

1	<i>Hotels</i>	Nil at the airport, accommodation unlimited in city hotels
2	<i>Restaurants</i>	150 meals per hr. available during operational hours of the Aerodrome.
3	<i>Transportation</i>	Buses and taxis
4	<i>Medical facilities</i>	Three motor ambulances; Hospital in city 8km
5	<i>Bank and post office</i>	Available
6	<i>Tourist office</i>	Available
7	<i>Remarks</i>	Nil

AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT 9
2	<i>Rescue equipment</i>	Adequate rescue and fire fighting vehicles, equipment and personnel provided. Since facilities are not available, the existing foamatic vehicles can be used as facilities for foaming of RWY
3	<i>Capability for removal of disabled aircraft</i>	Limited
4	<i>Remarks</i>	Service provided H24

AD 2.7 SEASONAL AVAILABILITY- CLEARING

1	<i>Types of clearing equipment</i>	Nil
2	<i>Clearing</i>	Nil
3	<i>Remarks</i>	AD available all seasons, In order to reduce the possibility of ACFT using excessive speeds, pilots are strictly warned to limit their taxiing speed on the turn. Pilots are requested to exercise extreme caution while taxiing on the turn around as well as the terminal apron area during wet conditions

AIP ETHIOPIA

AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATION DATA

1	<i>Apron Surface and Strength</i>	<i>Surface: Asphalt concrete. Strength: PCN 65 F/D/X/T</i>
2	<i>Taxiway width, Surface and Strength</i>	<i>Width: 23M Surface: Asphalt Strength: PCN 65 F/D/X/T</i>
3	<i>ACL Location and Elevation</i>	Nil
4	<i>VOR/INS Check points</i>	Nil
5	<i>Remarks</i>	Nil

AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	<i>Use of aircraft stands ID signs, TWY guide lines and Visual docking/parking guidance system of aircraft stands.</i>	Yellow apron markings guide aircrafts to stands
2	<i>RWY and TWY markings and LGT.</i>	<i>RWY:-Designation, THR, Touchdown, Centreline, edge RWY LGT: Edge elevated bi-directional and brilliance control of combination of white and amber lights. Threshold lights:- Green-light across displaced Threshold TWY markings: - Centreline, Taxi holding position, edge, TWY designator boards. TWY LGT: - Edge elevated Omni directional blue lights.</i>
3	<i>Stop bars</i>	Nil
4	<i>Remarks</i>	Nil

AD 2.10 AERODROME OBSTACLES

<i>In approach/TKOF area</i>			<i>In circling area and at AD</i>		<i>Remark</i>
1			2		3
<i>RWY/Area Affected</i>	<i>Obstacle type Elevation Markings/LGT</i>	<i>Coordinates</i>	<i>Obstacle type Elevation Markings/LGT</i>	<i>Coordinates</i>	
a	B	c	a	B	
07R&07L/APCH	Antenna(EAL TX) 7677ft LGTD High peak(mount Wechecha) 11126FT High peak(mount Dertu) 8150FT High peak(mount Furi+TV antenna) 9635FT	N085840.267 E0383536.765 N085621.870 E0384239.90 N085301.550 E0384110.043	Antenna(CAA TX) 7865ft LGTD		Nil
25R&25L /TKOF	Antenna(MET Wind sensor) LGTD Radio Mast(Lege Dadi) 8400ft		Terrain(Intoto) 10535ft		
	LGTD				
	Terrain(Yerer)				
	10167ft				

The National Meteorological Services Agency is sending pilot and radio sond balloons for upper air weather data recording purposes twice every day between 0300-0600 and 1100-1300 UTC around Addis Ababa International Airport. Pilots are advised to take Precaution, during landing and take-off.

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AD 2.11 METEOROLOGICAL INFORMATION PROVIDED

1	<i>Associated MET Office</i>	Addis Ababa/Bole international
2	<i>Hours of Service MET office outside hours</i>	H 24 -
3	<i>Office responsible for TAF preparation Periods of Validity</i>	BOLE Aeronautical Met. office H24
4	<i>Type of landing forecast Interval of issuance</i>	METAR,SPECI every 30 MIN
5	<i>Briefing/Consultation Provided</i>	Personal Consultant
6	<i>Flight documentation Language(s) used</i>	PL CTB English
7	<i>Charts and other information available for briefing consultation</i>	Chart, abbreviated plain language text
8	<i>Supplementary equipment available for providing information</i>	SADIS,Satellite Image receiver,Internet,AWOS,Automatic weather observing system
9	<i>ATS units provided with information</i>	ACC/APP/TWR
10	<i>Additional information</i>	Recent Weather, Trend

AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designations	True & Magnetic	Dimensions of RWY(M)	Strength and Surface of RWY	THR	THR elevation and Highest elevation of TDZ of precision APP RWY
				Coordinates	
1	2	3	4	5	6
07L	074.8° T	3700x45	PCN 65/F/D/X/T	N085828.60638	7621 FT
	072.4° M		Asphalt concert	E0384704.47475	
25R	254.8° T	3800x45		N085856.82763	7573 FT
	252.4° M			E0384841..29548	
07R	074.8° T	3800x45	PCN100 /F/D/X/T	N 085823.65162	7617 FT
	072.4° M		Asphalt concert	E 0384711.91706	
25L	254.8° T			N 085851.85521	7596 FT
	252.4° M			E 0384848.71485	
Slope of RWY/SWY	SWY Dimension (M)	Cwy Dimension (M)	Strip Dimension (M)	Free Zone	Remark
7	8	9	10	11	12
-	60	Nil		Nil	*
-	60	Nil		Nil	
+0.8%	Nil	90	3890x180	Nil	*
-0.8%	Nil	90		Nil	

*PCN for RWY 07L/25R is not checked after resurfacing work of the RWY. Therefore 65/F/D/X/T may not represent the exact measurement.

*Back track or 180° turn is not allowed on RWY 25L/07R for wake turbulence category ACFT heavy and medium.

AD 2.13 DECLARED DISTANCES

RWY Designator	TORA(M)	TODA(M)	ASDA (M)	LDA (M)	Remarks
1	2	3	4	5	6
07L	3700	3760	3760	3375	NIL
25R	3700	3760	3760	3325	
07R	3800	3890	3800	3440	NIL
25L	3800	3890	3800	3440	

AD 2.14 APPROACH AND RUNWAY LIGHTING

RW	Approach Y Lights Type, Length, Intensity	Threshold Lights Colour, WBAR	VASIS PAPI	TDZ Lights Length	RWY CL Lights Spacing, Colour, Intensity	RWY Edge Lights Spacing, Colour, Intensity	RWY end LGT LGT	SWY Length Colour WBAR	RE MA RK S
1	2	3	4	5	6	7	8	9	10
07L	Nil	Green	PAPI 2.95°,290M FM THR,37.5M FM Centreline of RWY HGT, left side 74CM & right side 70CM FM GND.	Nil	Nil	3700M, 60M, White & Amber L I H	Red	Nil	Nil
25R	Flashing white high	Green	PAPI 3°,310M FM THR; 37.5M FM Center line HGT:left side 70CM right side 98CM FM GND	Nil	Nil	3700M, 60M, White & Amber L I H	Red	Nil	Nil
07R	Simple APP lights	Green	PAPI 3° unidirectional	Nil	Nil	3800M, 120M, White & Umber	Red	Nil	Nil
25L	APP lights CAT 1 900m	Green	PAPI 3° unidirectional	Nil	Nil	3800M, 120M, White & Umber	Red	Nil	Nil

AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

1	<i>ABN/IBN location, characteristics and hours of operation</i>	Nil information
2	<i>LDI Location and LGT Anemometer location and LGT</i>	Nil information
3	<i>TWY Edge and centre line lighting</i>	EDGE: Elevated Omni directional Blue Lights Centre line: Nil
4	<i>secondary power supply/ switch-over time</i>	conforms with the requirements of Annex 14, Chapter 8
5	<i>Remarks</i>	Nil

AD 2.16 HELICOPTER LANDING AREA - On the apron in front of the terminal building.

AD 2-HAAB-6

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AD 2.17 ATS AIRSPACE

1	<i>Designation and lateral limits</i>	Bole CTR : Circle with a radius of 25NM centred on ADS VOR/DME
2	<i>Vertical limits</i>	Lower limit: GND Upper limit: ALT 14000FT
3	<i>Airspace classification</i>	C/E
4	<i>ATS unit, call sign Language(s)</i>	Bole Tower English
5	<i>Transition altitude</i>	14000FT
6	<i>Remarks</i>	Excluding restricted area HAR-1

AD 2.18 ATS COMMUNICATION FACILITIES

<i>Service</i>	<i>Call Sign</i>	<i>Frequency</i>	<i>Co ordinates</i>	<i>Emission</i>	<i>Hours of Operation</i>	<i>Remarks</i>
1	2	3	4	5	6	7
APP	Bole Approach	119.7 MHZ	085854.7711N 0384737.1942E	A3J	H24	50Watts
TWR	Bole Tower	118.1 MHZ 121.5 MHZ		A3J	H24	50 Watts
EN	ACC	125.1 & 125.2 MHZ				
SMC	Bole Ground	121.9 MHZ		A3J	H24	50 Watts
EN	ACC	11300,5517 7595 KHZ				Domestic

AD 2.19 RADIO NAVIGATION AND LANDING AIDS

<i>Type</i>	<i>Ident</i>	<i>Frequency (CH)</i>	<i>Coordinates</i>	<i>Emission</i>	<i>Hours of Oper</i>	<i>Remarks</i>
1	2	3	4	5	6	7
ILS/LLZ RWY25R	IBA	110.3MHz	085824.0125N 0384648.7360E	A2	H24	OPERATIONAL
ILS/GP RWY25R		335MHZ	085857.8398N 0384830.7344E	A2	H24	Angle 2.93°
ILS/LLZ RWY25 L	IAA	111.5MHz	085816.5N 0384647.5E	A2	H24	Power 25 W coverage more than 25 NM
ILS/GP RWY 25L		332.9MHz	085844.2697N 0384840.0986E	A2	H24	Power 5 W, angle 2.93° coverage 10 M, RDH 59 FT
OM		75MHZ	085950.9602N 0385147.4308E	A2	H24	Location: 075° MAG 3.2 NM FM displayed THR RWY25
MM		75MHZ	085906.0825N 0384913.4388E	A2	H24	Nil
VOR/DME	ADS	112.9MHZ	085830.1470N 0384757.8387E	A2	H24	Power 40Watts coverage 40 NM at ALT 11500 but unreliable beyond 20NM, at altitude of 12500ft and below from 280°-040° radials, due to mount Entoto.
DVOR/DME	GWZ	115.9MHz	090622.3338N 0384611.7121E	A2	H24	8 NM North of Bole Int'l Airport, Power 100 W, coverage 200 NM
NDB	AB	333KHZ	085950.5359N 0384912.5576E	A2	H24	Location: 0.75 MAG, 3.2 NM displaced THR RWY 25
L	BL	352 KHZ	085965.8544N 0384912.5576E	A2	H24	Location: 075 MAG, 0.54 NM Displaced THR RWY 25. Power 100 Watts. Coverage 150NM

1. Airport regulations

All aircraft manoeuvring on the aerodrome shall be capable of maintaining two way radio communications with Bole ATC. Marshallers control movements and assign parking positions to aircraft on the apron.

2. Local flying restrictions: NIL**3. Taxiing to and from stands:**

Aircraft located on stands 1 to 19 have to be pushed back. Warming-up engines which differs from the idle thrust is prohibited in front of the terminal building.

4 Parking area for small Aircraft

(General Aviation):- See aircraft parking chart.

5. School, test and training flight-use of runways:- 07R /25L available.**6. Removal of disabled aircraft from runways:** - Has been developed by organizing different construction agencies and airlines operating in Addis Ababa.**AD 2-21. NOISE ABATEMENT PROCEDURES****1. Noise abatement for Departure**

- Departure RWY 07R/L to make left turn to West and North West direction no turn before crossing

12500ft on Runway heading between 1700-0400UTC.

- Departure RWY07R/L to make right turn to North, North-West and West the aircraft shall not be below the level assigned on the published SID.
- Departure RWY 25L/R to make left turn to North, North-West and West the aircraft shall not be below the level assigned on the published SID
- Allow an aircraft to have a continuous climb operation.

2. Noise abatement for arrival

- An aero plane coming for landing shall not be required to intercept the extended final approach track less than 10NM from landing threshold between (1700-0400 UTC)
- In the case of visual operations, pilots should permit an adequate period of stabilized flight on final approach before crossing the runway threshold.
- To maintain efficient air traffic services, noise abatement descent and approach procedures utilizing continues descent and reduced power/reduced drag techniques (or a combination of both) and can be implemented to be both effective and operationally acceptable.
- Avoid operating on left hand-down wind R07R/L and Right hand-down wind R25L/R at all times.

AD 2-22. FLIGHT PROCEDURES

1. Instrument approach procedures for Addis Ababa/Bole International

1.1 Holding Procedures

Holding point	Inbound Track Mag	MNM ho			
ADS VOR/DME	RDL 270	14000 ft	Right	1Min*	CAT A,B,C,D
ADS VOR/DME	RDL 270	14000 ft	Right	1Min*	Secondary entry FIX RDL 222/D9 ADS
RDL 249/D23.5 ADS	RDL 249	FL 165	Left	1.5Min	Secondary entry FIX RDL 260/D31 ADS
RDL 033/D20 ADS	RDL 033	FL 165	Right	1.5Min	Secondary entry FIX RDL 022/D27 ADS
AB NDB	086°	14000 ft	Right	1Min*	CAT A & B ACFT
AB NDB	095°	14000 ft	Right	1Min*	CAT C & D ACFT
ADS VOR/DME	RDL 073	14000 ft	Right	1Min*	ILS RWY 25R

*1.5 MIN above 14000FT.

1.2 ADS VOR/DME RWY 25R

1.2 .1 ADS VOR/DME (CAT A/B AIRCRAFT) RWY 25R

Initial Approach

MSA centered on ADS VOR/DME 14000 FT within all sectors. When cleared for approach descend outbound from 14000 FT on RDL 078 to 11200ft (3610)ft. (CAT C/D), At 13D ADS, execute base turn left, on level flight to intercept the intermediate approach track RDL 067.

Intermediate approach

Upon completing base turn at 13D RDL 067 ADS, descend (descent gradient 5%) to 7D RDL 067(FAF) and 9380(1790) ft.

Final Approach

From 7D RDL 067 ADS(FAF) (1790) ft. continue descent(descent gradient 5%) on the final approach RDL 067OCA /H of 8010(420)ft. at 2.5D (MAPT)

Missed Approach

If visual contact is not established at 2.5D ADS (MAPT), OCA /H 8010(420)ft, or the relevant MDA/H, turn left to intercept R193 ADS. Continue climb to 13,500 ft on R193 then after, turn right at 13,500 ft. to return to ADS holding or as directed.

1.2.2 ADS VOR/DME (CAT C/D AIRCRAFT) RWY 25R

Initial Approach

MSA centered on ADS VOR/DME 14000 FT within all sectors. When cleared for approach, descend from 14000 FT. (descent gradient 5%) on outbound track RDL 090 ADS to track ,11200ft(3610). At D13 ADS, Execute base turn left on level flight to intercept the intermediate approach track RDL 067.

Intermediate approach

Upon completing base turn at RDL 067 D13(I F),at 11200(3610)ft. commence ADS, descend (descent gradient 5%) on RDL 067 to 9380(1790) ft. till 7D ADS (FA F)

Final Approach

At RDL 067 D7 ADS (FAF), continue descent(descent gradient 5%) from 9380 (1790) ft. on the final approach track RDL 067 to the OCA /H 8010(420)ft. (MAPT) 2.5D ADS.

Missed Approach

If visual contact is not established at the MAPT (2.5D ADS) and OCA /H 8010(420) ft, or the relevant MDA/H, turn left as soon as practicable, IAS 185 kts maximum, to intercept R193 ADS. Continue climb on R193 ADS to 14000 FT. then after turn right and return to ADS holding or as directed.

1.3.1 ADS VOR/DME AB/BL NDB RWY 25R**1.3.1 ADS VOR/DME AB/BL NDB (CAT A & B AIRCRAFT) RWY 25R****Initial approach**

MSA centered on ADS VOR 14000 FT within all sectors. When cleared for approach descend in holding pattern overhead ADS VOR/DME (IAF) to 12500ft, from ADS VOR/DME at 12500ft descend outbound on RDL 085 to 10500 ft, at D9 ADS execute a

base turn left onto final descending to 10100ft

Final Approach

On completing base turn at RDL 072/D9 ADS (FAF) and 10100FT descend (descent gradient 5%) on the final approach track 253° to cross AB NDB at 8800ft, thereafter, descend to the obstacle clearance altitude OCA (H) 8000ft (408FT).

Missed Approach

If visual contact is not established at BL LOC (MAPt), turn left as soon as practicable onto track 193° from BL LOC climbing to 14000 FT. On reaching 14000 FT. On reaching 13500ft,turn right and rejoin the holding.

1.3.2 ADS VOR/DME AB/BL NDB (CAT C & D AIRCRAFT) RWY 25R**Initial approach**

MSA centered on ADS VOR 14000 FT within all sectors.

When cleared for approach:-

-From RDL 249/D23.5 ADS (IAF) at FL 165 turn left to intercept RDL 270 inbound to ADS VOR descending to 14000 FT, or from overhead ADS VOR/DME (IAF) at 14000 FT descend outbound on RDL 090 to 11500ft, at D12 ADS execute a base turn left onto intermediate segment descending to 10500ft. Initial approach speed is limited to maximum 210KT IAS for the reversal procedure.

Intermediate approach

At RDL 072/D12 ADS (IF) and 10500ft commence descent (descent gradient 3.3%) on RDL 072 to cross RDL 072/D7 ADS (FAF) at 9500ft.

Final approach

At RDL 072/D7 ADS (FAF) and 9700FT descend (descent gradient 5.0%) on the final approach track 253° to cross AB NDB at 8800ft, thereafter, descend to the Minimum Descent altitude. OCA (H) 8000ft (408ft).

Missed approach

If visual contact is not established at BL LOC (MAPt), turn left as soon as practicable MAX 185KT IAS during turn onto track 193° from BL LOC climbing to 14000 FT. On reaching 14000 FT turn right and rejoin holding.

1.4 AB/BL NDB RWY 25R**1.4.1 AB/BL NDB (CAT A & B AIRCRAFT) RWY 25R****Initial approach**

MSA centered on AB NDB 14000 FT within all sectors. When cleared for approach descend in holding pattern overhead AB NDB (IAF) to 12500ft, from AB NDB at 12500ft descend outbound for 3 MIN on track 086° to 10000ft, execute a level base turn left onto final approach track.

Final approach

On completing base turn at 10000FT descend on the final

approach track 253° to cross AB NDB at 8870FT, thereafter; descend to the Minimum Descent Altitude. OCA (H) 8020ft (428ft).

Missed approach

If visual contact not established at BL LOC (MAPt), turn left as soon as practicable onto track 193° from BL LOC climbing to 14000 FT. On reaching 14000 FT turn right and rejoin the holding.

**1.4.2 AB/BL NDB (CAT C & D AIRCRAFT)
RWY 25R****Initial approach**

MSA centered on AB NDB 14000 FT within all sectors. When cleared for approach from AB NDB at 14000 FT descend outbound for 2.5 MIN on track 093° to 10500ft. execute a level base turn left onto final approach track.

Final approach

On completing base turn at 10500ft descend on the final approach track 253° to cross AB NDB at 8870ft, thereafter, descend to the Minimum Descent Altitude. OCA (H) 8020ft (428ft)

Missed approach

If visual contact is not established at BL LOC (MAPt), turn left as soon as practicable onto track 193° from BL LOC climbing to 14000 FT. On reaching 14000 FT turn right and rejoin the holding.

1.5 ILS RWY 25R (CAT A/B & C/D AIRCRAFT)**Initial approach**

MSA centered on ADS VOR 14000 FT, within all sectors. When cleared for approach from overhead ADS VOR/DME (IAF) at 14000 FT turn left to BL Locator and descend outbound on the localize course on magnetic track 073° to 11000ft. At D12 ADS execute a procedure turn left onto intermediate segment at 11000ft.

Intermediate approach

At 253° M/D12 ADS (IF) and 11000ft commence descent (descent gradient 4.6%) intercept the localize course and cross D7 ADS (FAF) at 9600ft.

Final approach

At D7 ADS (FAF) and 9600ft intercept the glide slope (2.95°) and descend on the final approach track 253° to the decision altitude. In case of GP INOP; at D7 ADS (FAF) and 9600FT descend (descent gradient 5.2%) on the final approach track 253° to the minimum descent altitude.

Missed approach

If visual contact is not established when reaching the decision altitude or the MM (MAPt for GP INOP), turn left as soon as practicable (MAX 185kts IAS) during initial turn to intercept R193 ADS climbing 14000 FT, then turn right to join ADS holding.

1.6 ADS VOR/DME RWY 25L**1.6.1 ADS VOR/DME (CAT A/B AIRCRAFT) RWY 25L****Initial Approach**

MSA centered on ADS VOR/DME 14000FT within all sectors. When cleared for approach descend outbound from 14000 FT on RDL 078 to 11200ft (3610)ft. (CAT C/D), At 13D ADS, execute base turn left, on level flight to intercept the intermediate approach track RDL 069.

Intermediate approach

Upon completing base turn at 13D RDL 069 ADS, descend (descent gradient 5%) to 7D RDL 069 (FAF) and 9380(1790) ft.

Final Approach

From 7D RDL 069 ADS(FAF) (1790) ft. continue descent(descent gradient 5%) on the final approach RDL 069 OCA /H of 8010(420)ft. at 2.5D (MAPT)

Missed Approach

If visual contact is not established at 2.5D ADS (MAPT), OCA /H 8010(420) ft, or the relevant MDA/H, turn left to intercept R193 ADS. Continue climb to 14000 FT on R193 then after, turn right at 13,500 ft. to return to ADS holding or as directed.

**1.6.2 ADS VOR/DME (CAT C/D
AIRCRAFT) RWY 25L****Initial Approach**

MSA centered on ADS VOR/DME 14000 FT within all sectors. When cleared for approach, descend from 14000 FT. (descent gradient 5%) on outbound track RDL 092 ADS to track, 11200ft (3610). At D13 ADS, Execute base turn left on level flight to intercept the intermediate approach track RDL 069.

Intermediate approach

Upon completing base turn at RDL 069 D13 (I F), at 11200(3610) ft. commence ADS, descend (descent gradient 5%) on RDL 069 to 9380(1790) ft. till 7D ADS (FAF)

Final Approach

At RDL 069 D7 ADS (FAF), continue descent (descent gradient 5%) from 9380 (1790) ft. on the final approach track RDL 069 to the OCA /H 8010(420) ft. (MAPT) 2.5D ADS.

Missed Approach

If visual contact is not established at the MAPT (2.5D ADS) and OCA /H 8010(420)ft, or the relevant MDA/H, turn left as soon as practicable, IAS 185 kts maximum, to intercept R193 ADS. Continue climb on R193 ADS to 14000 FT. then after turn right and return to ADS holding or as directed.

2. Air-ground communication failure

- 2.1 Action by air traffic control units when unable to maintain two-way communication with an aircraft operating in a control area or control zone shall be as outlined in the paragraphs which follow.
- 2.2 If the aircraft fails to indicate that it is able to receive and acknowledge transmissions, separation shall be maintained between aircraft, based on the assumption that the aircraft will:
- 2.2.1 If in visual meteorological conditions:
- a) Continue to fly in visual meteorological conditions;
 - b) Land at the nearest suitable aerodrome; and
 - \c) report its arrival by the most expeditious means to the appropriate air traffic control unit.
- 2.2.2 If in instrument meteorological conditions or when weather conditions are such that it does not appear feasible to complete the flight in accordance with 1.2.1.
- a) proceed according to the current flight plan to the appropriate designated navigational aid serving the aerodrome of intended landing

and, when required to ensure compliance with (b) below, hold over this aid until commencement of descent;

- b) commence descent from the navigational aid specified in (a) at, or as close as possible to, the expected approach time last received and acknowledged; or, if no expected approach time has been received and acknowledged, at or as close as possible to, the estimated time of arrival as indicated in the filed flight plan and revised in accordance with the current flight plan;
 - c) Complete a normal instrument approach procedure as specified for the designated navigational aid; and
 - d) Land, if possible, within thirty minutes after the estimated time of arrival specified in (b) or the last acknowledged expected approach time, whichever is later.
- 2.3 If the aircraft has not landed within 30 minutes as indicated in 1.2.2 (d) above, it shall comply with the following procedure:

2.3.1 High Performance Aircraft

2.3.1.1. After executing missed approach procedure, follow the missed approach track of R-193, climb and maintain 13500ft until passing the control zone boundary (25NM/ADS). Then turn left to establish R-188 ADS VOR/DME and climb to FL330. Maintain FL330 at or before 65NM/ADS and turn left so as to proceed on track 061°(M) to Dire Dawa Airport. If the aircraft is unable to maintain FL330 at 65NM/ADS, make a circling climb to the right, between R188 and R-198 and limiting DME 65-75. Upon maintaining FL330 proceed on track 061°(M) to Dire Dawa Airport. At position N08°51' E040°25.5' (97NM to DWA VOR/DME), start descent to FL 150 and land visually.

2.3.2 Medium Performance Aircraft

After executing missed approach procedure, follow the missed approach track R-193, Climb and maintain 13500FT until passing the control zone Boundary (25NM/ADS). Establish R-188 ADS VOR/DME and Cross 40 DME at or above FL 155. Then turn left on to 072°(M) climbing to the intended level. At position N 08° 51', turn left and proceed on heading 061 to Dire Dawa

Airport. When ready, descend to FL150 and land visually.

2.4 Action taken to ensure suitable separation shall cease to be based on the assumption stated in 1.2 when:

- a) It is determined that the aircraft is following a procedure differing from that in 1.2: or
- b) Positive information is received that the aircraft has landed

2.5 As soon as it is known that two-way communication has failed, appropriate information describing the action taken by the air traffic control unit, or instructions justified by any emergency situation, shall be transmitted blind for the attention of the aircraft concerned, on the frequencies available on which the aircraft is believed to be listening, including the voice frequencies of available radio navigational or approach aids. Information shall also be given concerning:

- a) Weather conditions favorable to cloud-breaking procedure in areas where congested traffic may be avoided; and
- b) weather conditions at suitable aerodromes

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

2.7 As soon as it is known that an aircraft which is operating in its area of responsibility is experiencing an apparent radio, communication failure, on air traffic services unit shall forward information concerning the radio communication failure to all air traffic services unit concerned along the route of flight.

2.8 If circumstances indicate that a controlled flight experiencing communication failure might proceed to (one of) the alternate aerodrome (s) specified in the filed flight plan, the air traffic control unit (s) serving the alternate aerodrome (s) and any other air traffic control units that might be affected by a possible diversion shall be informed of the circumstances of the failure and requested to attempt to establish communication with the aircraft at a time when the aircraft could possibly be within communication range. This shall apply particularly when, by agreement with the operator or his designated representative, a clearance has been transmitted blind to the aircraft concerned to proceed to an alternate aerodrome, or when weather conditions at the aerodrome of intended landing are such that a diversion to an alternate is considered likely.

- a) The estimated time of arrival calculated by the area control center, or
- b) The last acknowledged expected approach time;

Whichever is latest, pertinent information concerning the aircraft shall be forwarded to aircraft operators, or their designated representatives and pilot-in-command of any aircraft concerned and normal control resumed if they so desire. It is the responsibility of the aircraft operators, or their designated representative and pilots-in-command of aircraft to determine whether they will resume normal operations or take other action.

2.9 In the radio communication failure procedures the expression "EAT" will mean either an EAT given by the appropriate ATC unit or the ETA over the holding point, if the pilot has been told "No delay expected".

3. The message "**Delay not determined**" will not be considered to be an EAT for the purpose of the radio failure procedures. Pilots whose radio fails after they have received this message, but before an EAT is given, should not attempt to land at their planned destination aerodrome but should fly to another aerodrome in accordance with the following procedure:

3.1 Aircraft approaching to land at the Addis Ababa Bole Int'l Airport.

a) Aircraft approaching from N,NW or W; above FL 330:-

Continue its flight to ADS VOR/DME maintaining the last assigned flight level and route. After O/head ADS VOR/DME establish R-188 and on crossing 25 DME/ADS, start descent to FL330. Upon maintaining FL330, proceed on track 061°(M) to Dire Dawa Airport. At position N 08°51' E 040°25.5' (97 NM to DWA VOR/DME), start descent to FL 150 and land visually.

b) Aircraft approaching from N, NW or W; below FL330:-

Continue flying to ADS VOR/DME maintaining the last assigned flight level & route. After O/head ADS establish R-188 and on crossing 25 DME/ADS R-188 climb to FL 330 and proceed to 65DME/ADS. Thereafter, turn left to establish heading 061°(M) to Dire Dawa Airport. If unable to maintain FL330 at D65 ADS make a circling climb to the right between R-188 and R-198 limiting DME 65-75 to FL330 and proceed on track 061°(M) to Dire Dawa Airport. At position N08°51' E040° 25.5 (97 NM to DWA VOR/DME), start descent to FL150 and land visually.

3.1.1 a) Aircraft approaching from S,SE or E; above FL330:-

Continue flight to ADS VOR/DME maintaining the assigned level and route; Establish R-188 from ADS/VOR/DME and follow the procedure specified in paragraph 2.1(a) above.

b) Aircraft approaching from S,SE or E; below FL330:-

Continue flight to ADS VOR/DME maintaining the last assigned flight level and route to enter the holding pattern. Thereafter, establish R-188 ADS VOR/DME and follow the procedure in 2.1 (b) above.

3.2 Aircraft approaching from N, NW or W; maintaining FL330:-

Continue flying to OHD ADS VOR/DME. Thereafter, establish R-188 and on crossing D25 ADS, turn left on to track 061°(M) maintaining FL330 and proceed to Dire Dawa airport. At position N 08° 51'E040° 25.5' start descent to DWA VOR/DME, FL150 and land visually.

4. Failure of Radio Navigation Equipment

4.1 If part of an aircraft's radio navigation equipment fails but two-way communication can still be maintained with the ATC, the pilot must inform the ATC unit of the failure and report his altitude and approximate position. The ATC unit:

- a) May authorize the pilot to continue his flight in or into controlled airspace;
- b) Shall inform an aircraft in flight which has a D/F equipment to escort him; (if this is not possible)
- c) Shall attempt to obtain an aircraft on ground which has a D/F equipment to depart and escort the aircraft referred to above;
- d) Advise other ATS and appropriate military units providing them with the

relevant information and request every assistance in determining the position of the aircraft concerned.

- 4.2 If no authorization to proceed is given by the ATC unit, the pilot should leave, or avoid, controlled airspace and area of dense traffic, and either;
- a) Go to an area in which he can continue his flight in VMC or (if this is not possible);
 - b) Select a suitable area in which to descend through cloud, fly visually to a suitable aerodrome and land as soon as practicable.

Before doing so, however, he should consult the ATS unit that may be able to give him instructions or advice. He should also take into consideration the latest meteorological information and terrain clearance. He must at all times keep the ATC service so that all concerned bodies may be informed of his intentions.

AD 2-23. Additional information

1.	Bird concentration on or in the vicinity of airports	2.3	Information on aerodrome conditions (including weather conditions) and limitations of available services and/or facilities may be announced by the Aerodrome control tower.
1.1	As far as practicable, Aerodrome Control Tower will inform Pilots of bird activity on and around the airports and NOTAM is issued to warn pilots, Ref ENR 5-6 for full usage of bird migration and concentration.	2.4	The relevant airport authority is responsible for maintaining the aerodrome in a satisfactory condition for flight operations.
2.	Supervision of the aerodrome	3.	Dissemination of information on runways affected by standing water not associated with snow or ice
2.1	The movement areas at Addis Ababa/Bole aerodrome are checked on a regular basis by the duty Aerodrome Supervisor and advise the Airport Management the prevailing conditions of the runway and other parts of the movement area.	3.1	If a runway is affected by standing water not associated with snow or ice at any time during the approach of an aircraft for landing, the depth and location of such standing water is notified by aerodrome authority direct to ATS for transmission to the aircraft. If the duration of the phenomena is likely to persist, and the information requires a wider distribution, a NOTAM is issued.
2.2	Runway state information and other related information of direct operational significance will be distributed to operators and services concerned by NOTAM.		

AIP ETHIOPIA**AD2-24.CHARTS RELATED TO AN AERODROME**

Aerodrome Chart - ICAO RWY 07L/25R.....	AD2 HAAB-20
Terminal Area Chart – ICAO	AD2 HAAB-21
Aircraft Parking/Docking Chart – ICAO	AD2 HAAB-22
Aerodrome Obstacle Chart - ICAO RWY 07L/25R.....	AD2 HAAB-23
Aerodrome Obstacle Chart - ICAO RWY 07R./25L.....	AD2 HAAB-24
Aerodrome Chart - ICAO RWY 07R./25L	AD2 HAAB-25
Standard Instrument Departures (SID) – ICAO	
North & East Addis Ababa Bole/International.....	AD2 HAAB-26
Standard Instrument Departures (SID) - ICAO	
South & West Addis Ababa Bole/International.....	AD2 HAAB-27
Standard Arrival Chart Instrument (STAR) – ICAO	AD2 HAAB-28
Instrument Approach Chart - ICAO - ILS, VOR/DME RWY 25L...	AD2 HAAB-29
Instrument Approach Chart - ICAO -RNAV GPS RWY 25R	AD2 HAAB-30
Instrument Approach Chart - ICAO -RNAV GPS RWY 25L	AD2 HAAB-31
Instrument Approach Chart - ICAO – GPS none precision 07R	AD2 HAAB-32
Instrument Approach Chart - ICAO – GPS none precision 07L	AD2 HAAB-33
Instrument Approach Chart-ICAO- ILS RWY 25R (CAT A/B/C/D ACFT)	AD2 HAAB-34
Instrument Approach Chart- ICAO VOR/DME RWY 25R (CAT A/B/C/D ACFT).....	AD2 HAAB-35
Instrument Approach Chart- ICAO- VOR/DME RWY 25R (CAT C/D ACFT).....	AD2 HAAB-36
Instrument Approach Chart-ICAO-VOR/DME/AB/BL NDBs RWY 25R (CAT A/B ACFT).....	AD2 HAAB-37
Instrument Approach Chart-ICAO-AB/BL NDBs RWY 25L (CAT A/B /C/DACFT)).....	AD2 HAAB-38
Instrument Approach Chart- ICAO- VOR/DME RWY 25R (CAT A/BACFT).....	AD2 HAAB-39
Instrument Approach Chart-ICAO-AB/BL RWY 25R (CAT C/D ACFT)	AD2 HAAB-40
Visual Approach Chart-ICAO.....	AD2 HAAB-41
Standard Instrument Arrival chart-ICAO RWY 07R/L.....	AD2 HAAB-42
Air-ground communication failure procedure chart.....	AD2 HAAB-43
Training Area Chart.....	AD2 HAAB-44
Aircraft Ground Movement Chart – ICAO	AD2 HAAB-46
Instrument Approach Chart – ICAO –RNAV GPS RWY 07L.	AD2 HAAB-47

AIP ETHIOPIA

AD2 HAAB-20

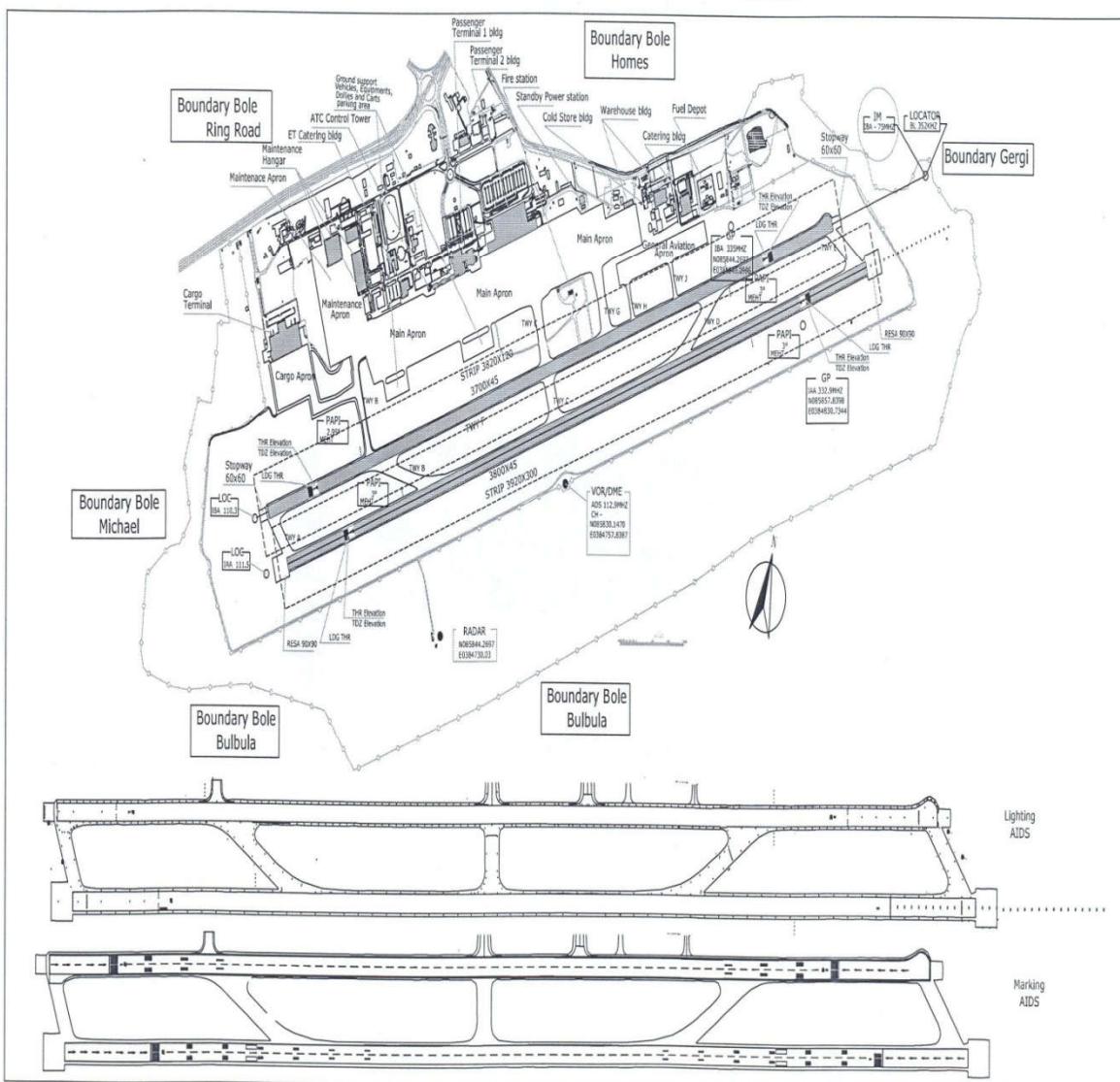
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AERODROME CHART - ICAO

AD ELEV 2324m
APRON ELEV 2324m

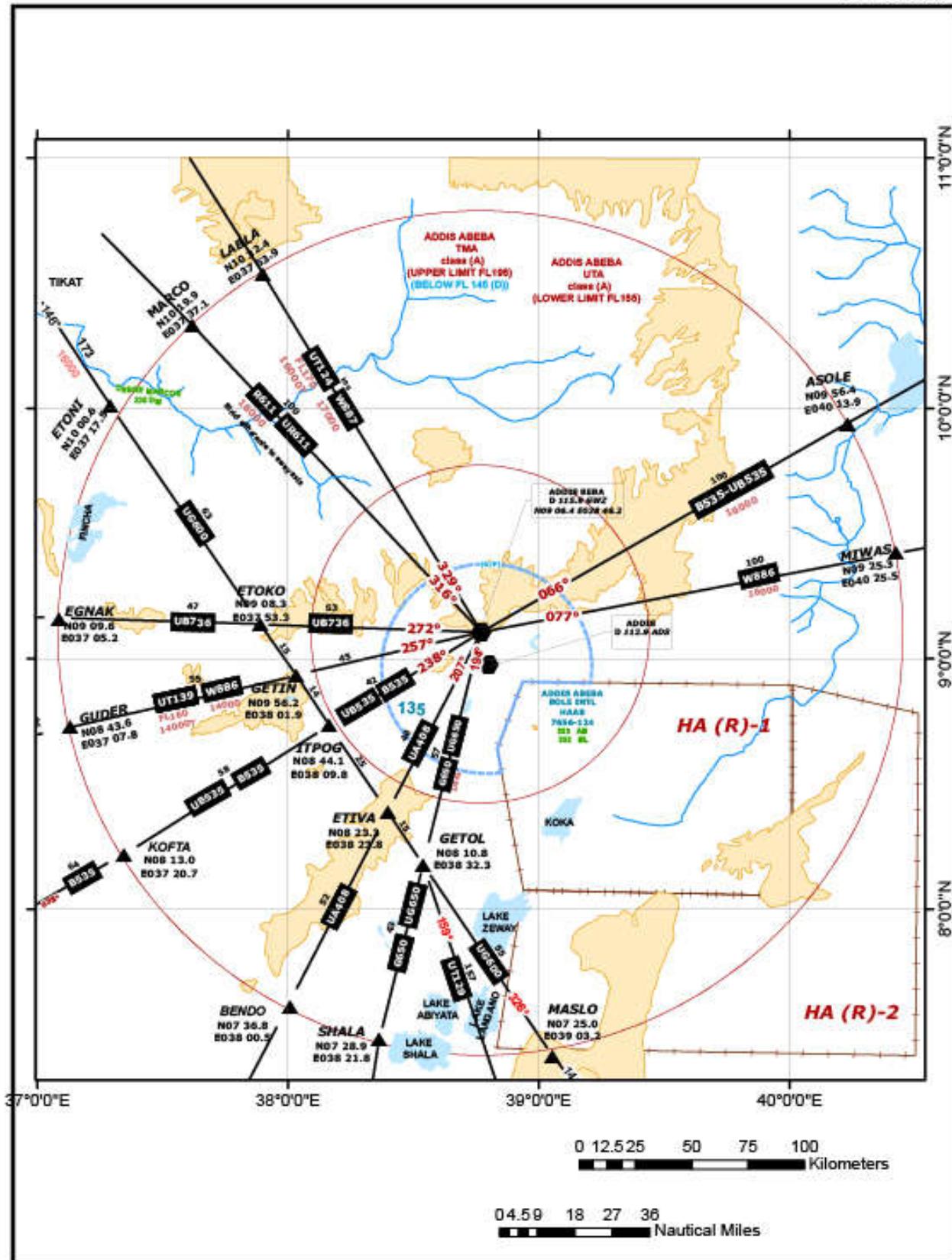
TWR 118.1
GND 121.9

ADDIS ABABA
BOLE INT'L AIRPORT



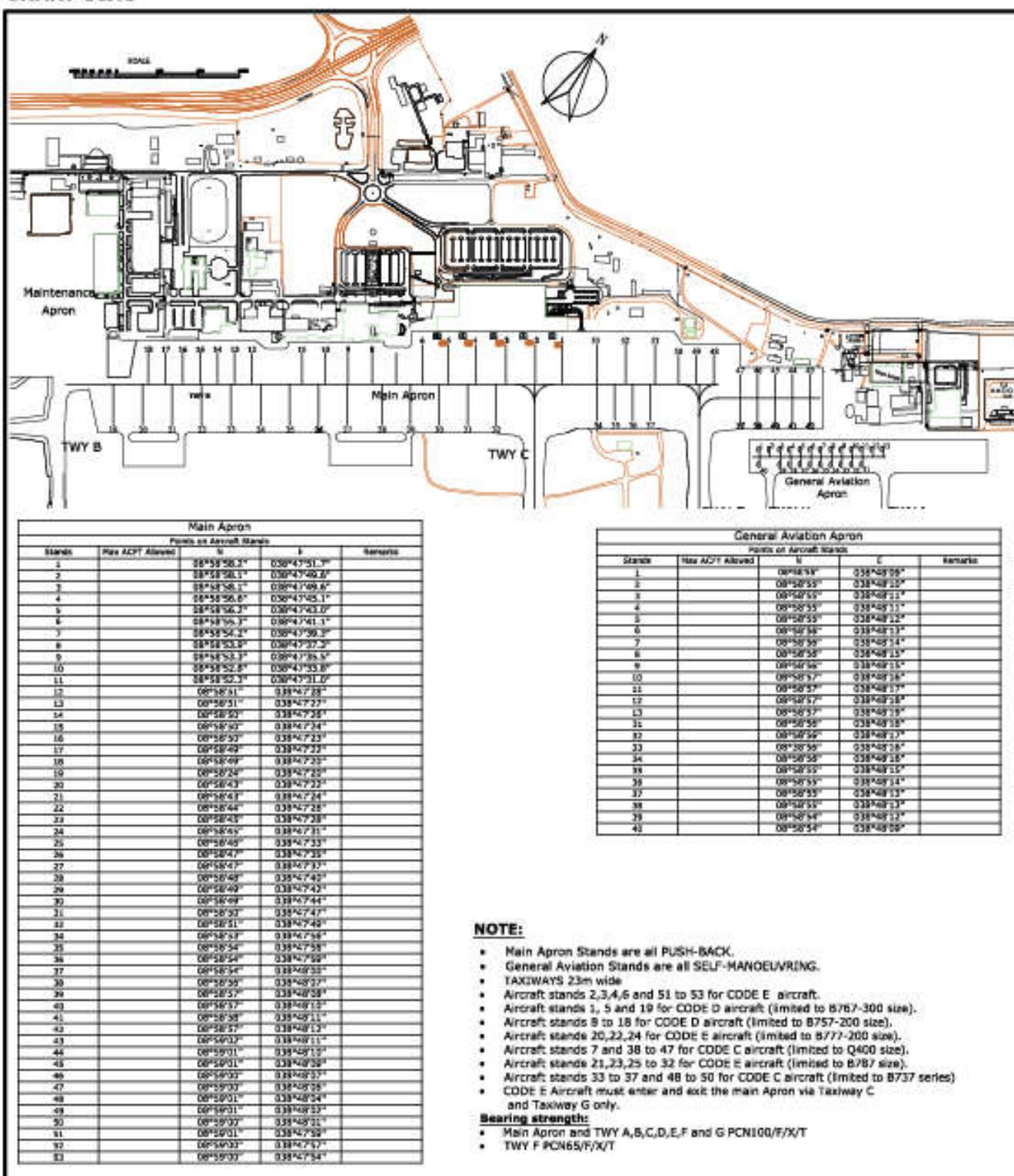
Amendment 2/14

Civil Aviation Authority
Addis Ababa



**AIRCRAFT
PARKING/DOCKING
CHART-ICAO**

APRON ELEV 2324m

TWR 118.1
GND 121.9**ADDIS ABABA
BOLE INT'L AIRPORT**

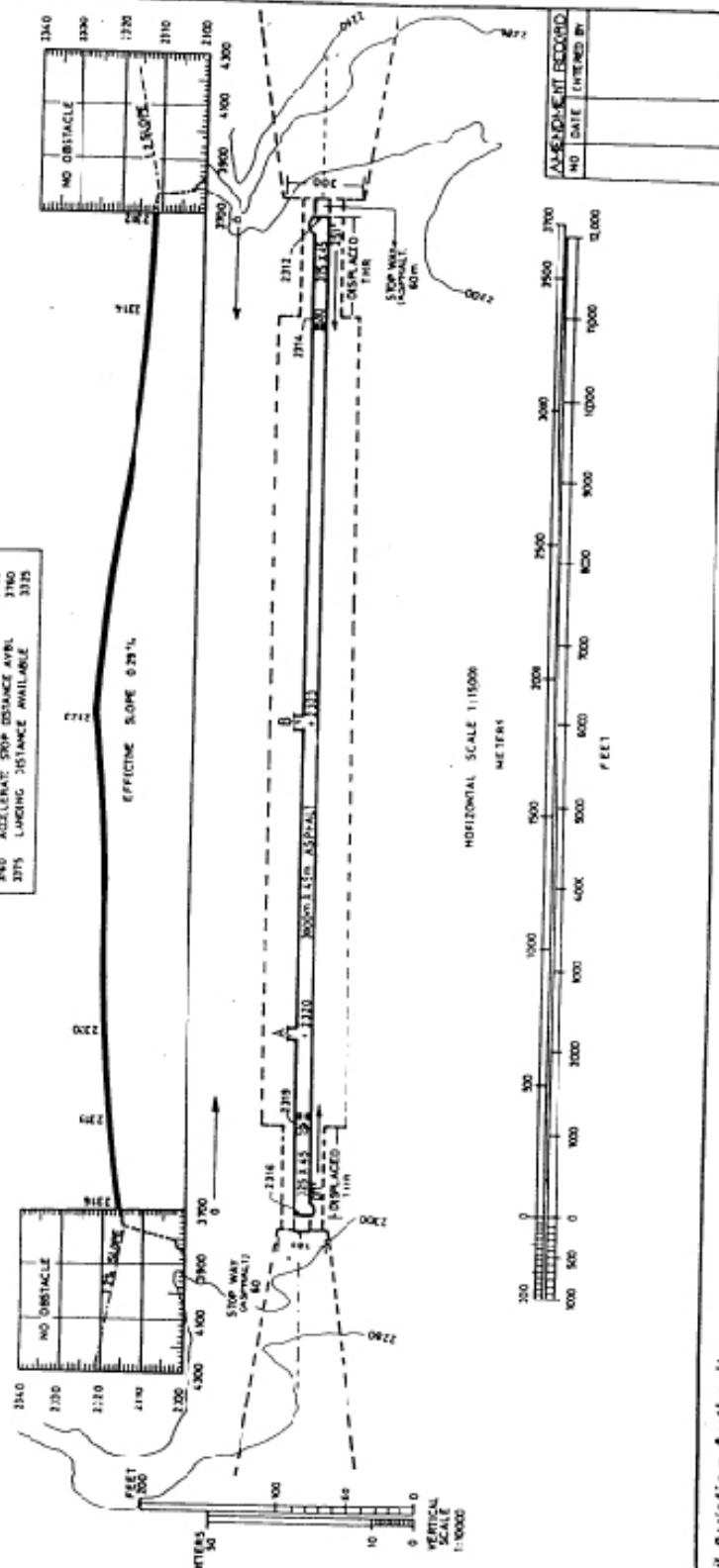
AIE ETHIOPIA

DIMENSIONS AND ELEVATIONS IN METERS
MAGNETIC VARIATION
2° E - 1895

**AERODROME OBS'ACLE CHART - 10
TYPE A (OPERATING UNITS)**

AERODROME OBS "UNCLE CHAP" TYPE A OBSERVATION

1



Civil Aviation Authority
Addis Ababa

Amendment 1/02

AIR ETHIOPIA

AERODROME OBSTACLE CHART - ICAO TYPE A (OPERATING LIMITATIONS)
DIMENSIONS AND ELEVATIONS IN METERS

AD2HABA-B-34
02-JUNE-1
ADDIS ABABA BOLE International Airport

Magnetic variation
1.5°E 2003

1.00000

RWY 07R / 25L

DECLARED DISTANCES

RWY 07R

TAKE OFF RUN AVAILABLE
3800

0000

TAKE OFF DISTANCE AVAILABLE

3800

ACCELERATE STOP DISTANCE AVAILABLE

3800

LANDING DISTANCE AVAILABLE

3440

RWY 25L

3800

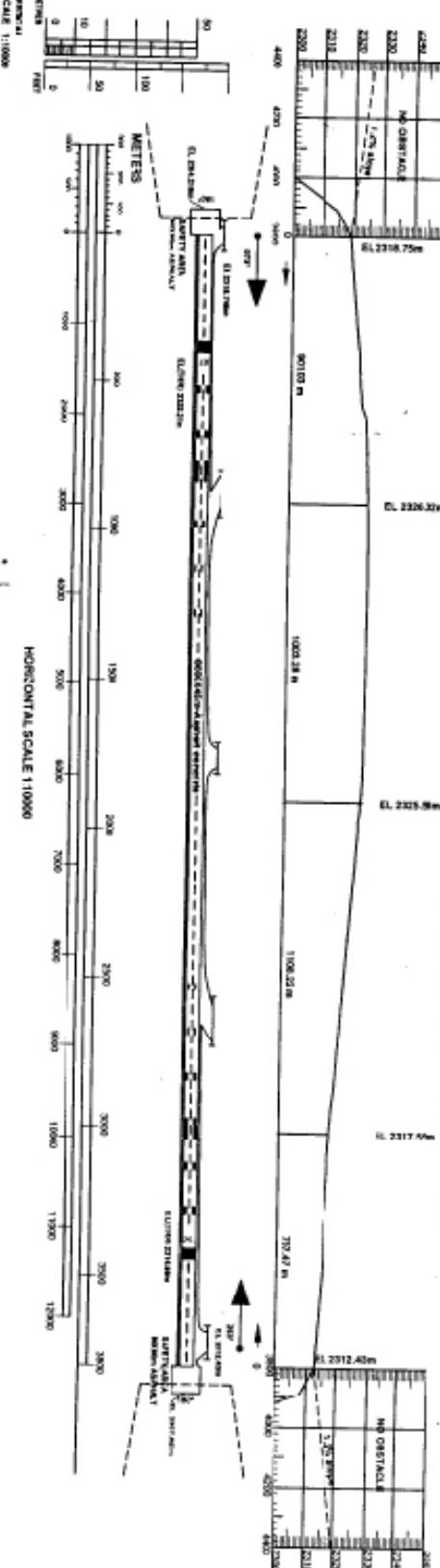
3800

ACCELERATE STOP DISTANCE AVAILABLE

3800

LANDING DISTANCE AVAILABLE

3440



CIVIL AVIATION AUTH
ADDIS ABABA

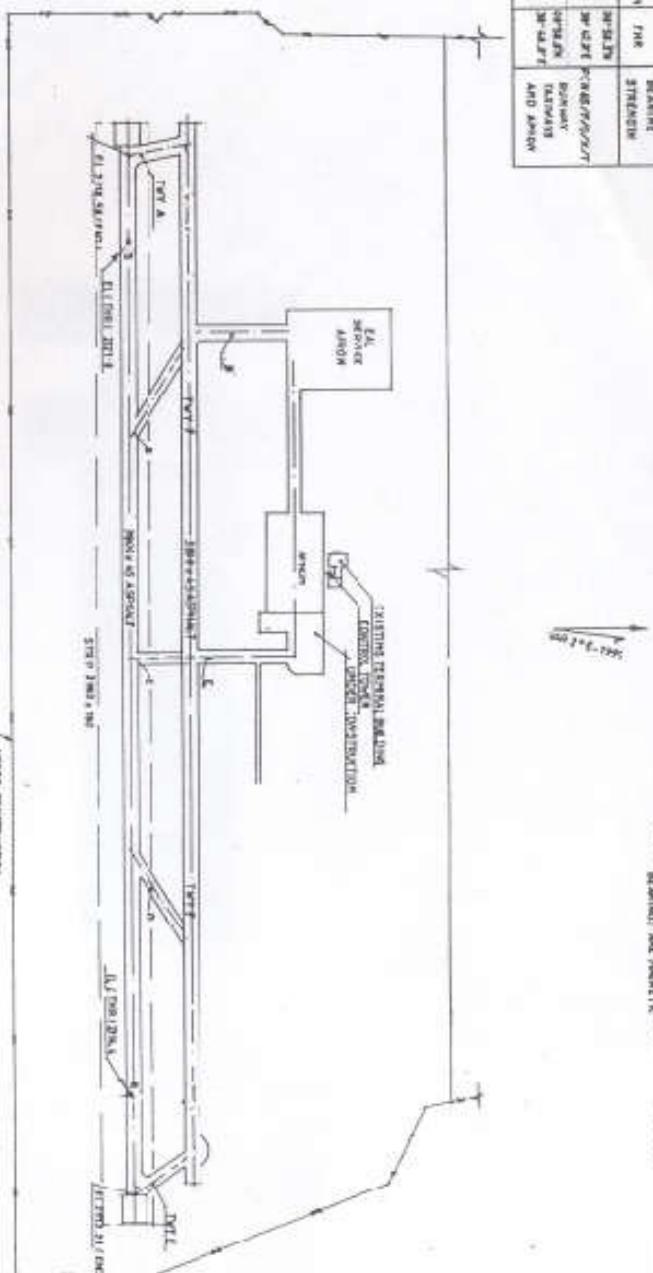
AVIATION ACT 1/1

Age	Ethnicity	Sex	Mean	SD	Median	Range	N
18-24	White	Male	2.50	.50	2.00	1.00-3.00	10
18-24	White	Female	2.50	.50	2.00	1.00-3.00	10
18-24	Black	Male	2.50	.50	2.00	1.00-3.00	10
18-24	Black	Female	2.50	.50	2.00	1.00-3.00	10
25-34	White	Male	2.50	.50	2.00	1.00-3.00	10
25-34	White	Female	2.50	.50	2.00	1.00-3.00	10
25-34	Black	Male	2.50	.50	2.00	1.00-3.00	10
25-34	Black	Female	2.50	.50	2.00	1.00-3.00	10
35-44	White	Male	2.50	.50	2.00	1.00-3.00	10
35-44	White	Female	2.50	.50	2.00	1.00-3.00	10
35-44	Black	Male	2.50	.50	2.00	1.00-3.00	10
35-44	Black	Female	2.50	.50	2.00	1.00-3.00	10
45-54	White	Male	2.50	.50	2.00	1.00-3.00	10
45-54	White	Female	2.50	.50	2.00	1.00-3.00	10
45-54	Black	Male	2.50	.50	2.00	1.00-3.00	10
45-54	Black	Female	2.50	.50	2.00	1.00-3.00	10
55-64	White	Male	2.50	.50	2.00	1.00-3.00	10
55-64	White	Female	2.50	.50	2.00	1.00-3.00	10
55-64	Black	Male	2.50	.50	2.00	1.00-3.00	10
55-64	Black	Female	2.50	.50	2.00	1.00-3.00	10
65+	White	Male	2.50	.50	2.00	1.00-3.00	10
65+	White	Female	2.50	.50	2.00	1.00-3.00	10
65+	Black	Male	2.50	.50	2.00	1.00-3.00	10
65+	Black	Female	2.50	.50	2.00	1.00-3.00	10

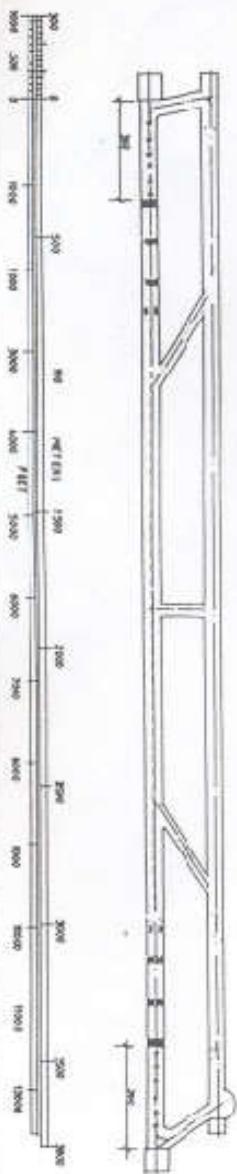
AERODROME CHART ICAO - ADDIS ABABA / BOLE ETHIOPIA

ELEVATIONS AND SECTIONES IN METRUM

AD2 НАДВ-25
13 JUN 02



PLASTINE AND POLY(1,4-BUTYLIC ANHYDRIDE)



Amendment 1/02

AIP ETHIOPIA

**STANDARD DEPARTURE CHART
INSTRUMENT (SID)-ICAO**

AD2 HAAB-26
NORTH & EAST
ADDIS ABEBA BOLE/ International
13JUN 02

TWR 118.1
APP 119.7

TRANSITION ALTITUDE:
15,000ft

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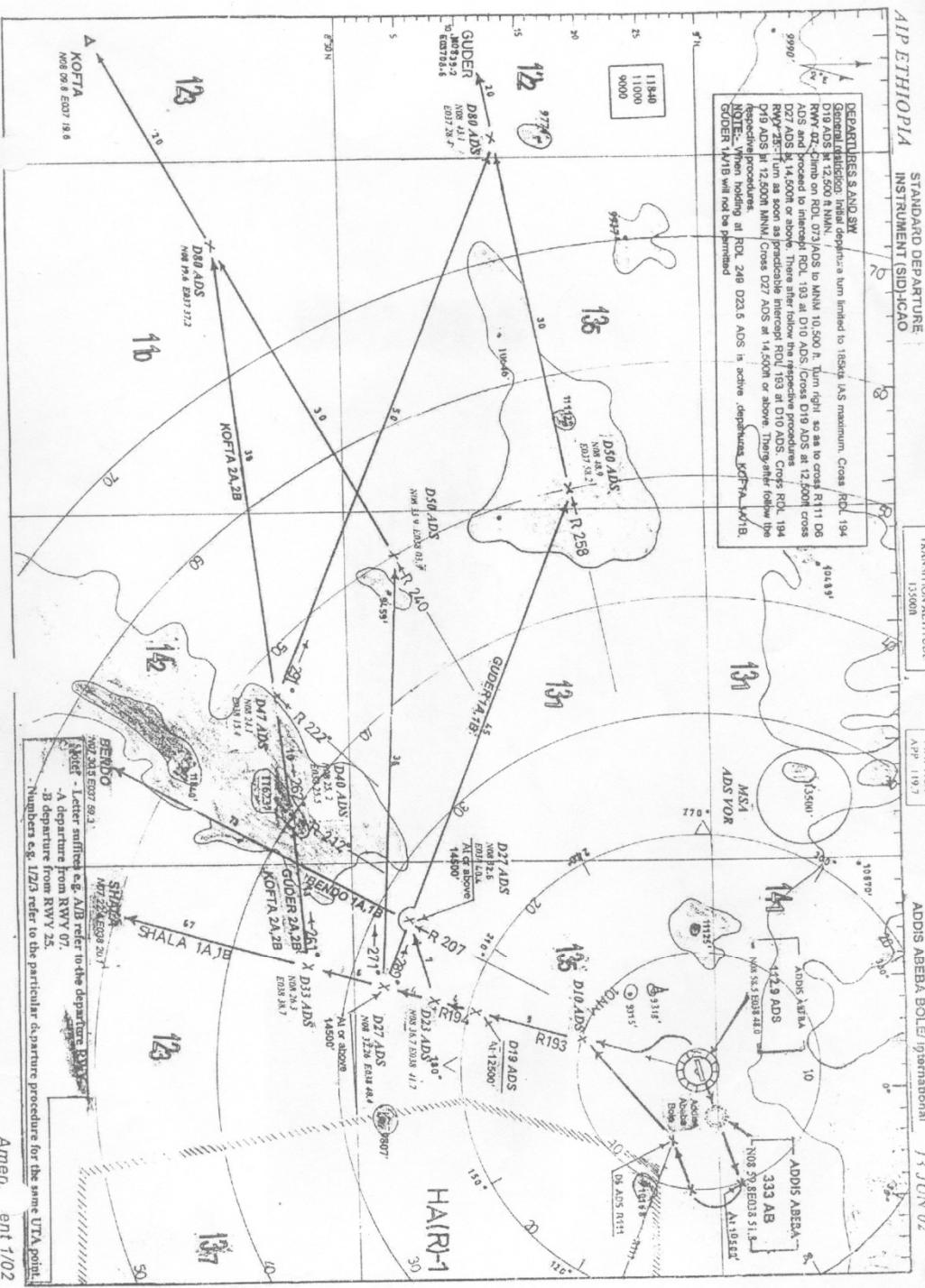
424

AIP ETHIOPIA

STANDARD DEPARTURE
INSTRUMENT (SDI-CAO)

TRANSITION ALTITUDE
13500ft

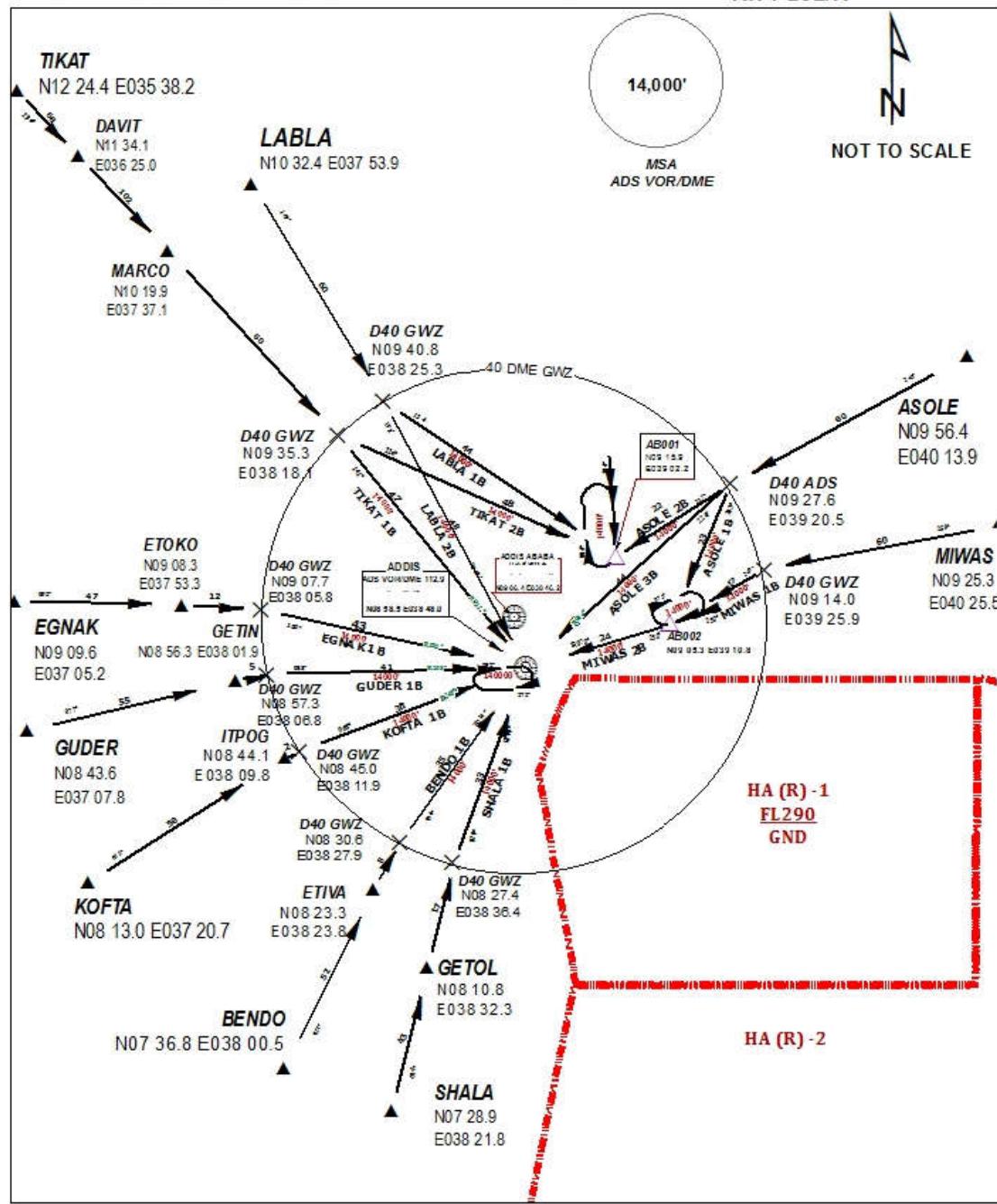
SOUTH & WEST
ADDIS ABEBA BOLE International
AD2 HA A/B-27
13 JUN 02
APP 119.7

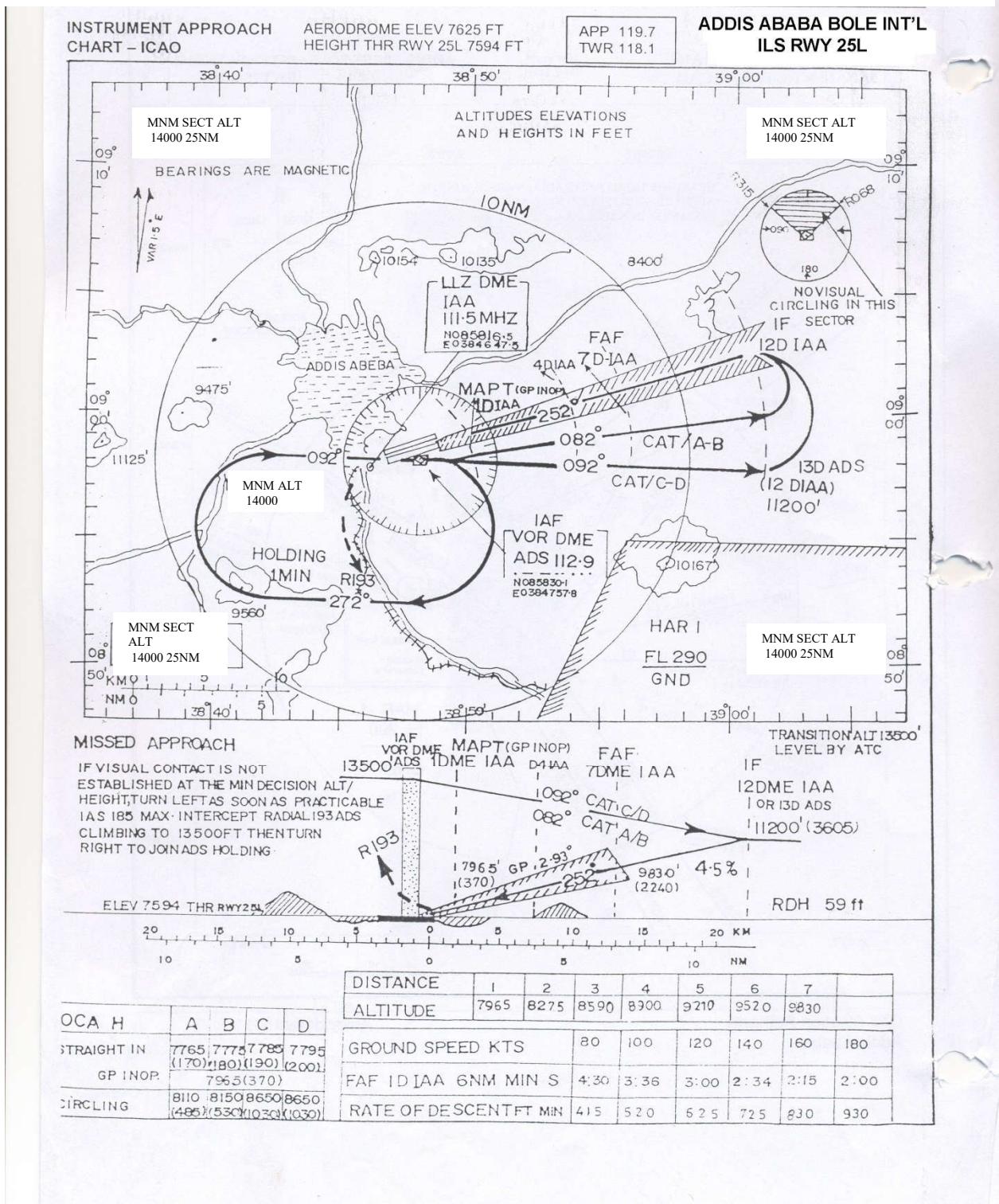


STANDARD ARRIVAL CHART INSTRUMENT(STAR)-ICAO

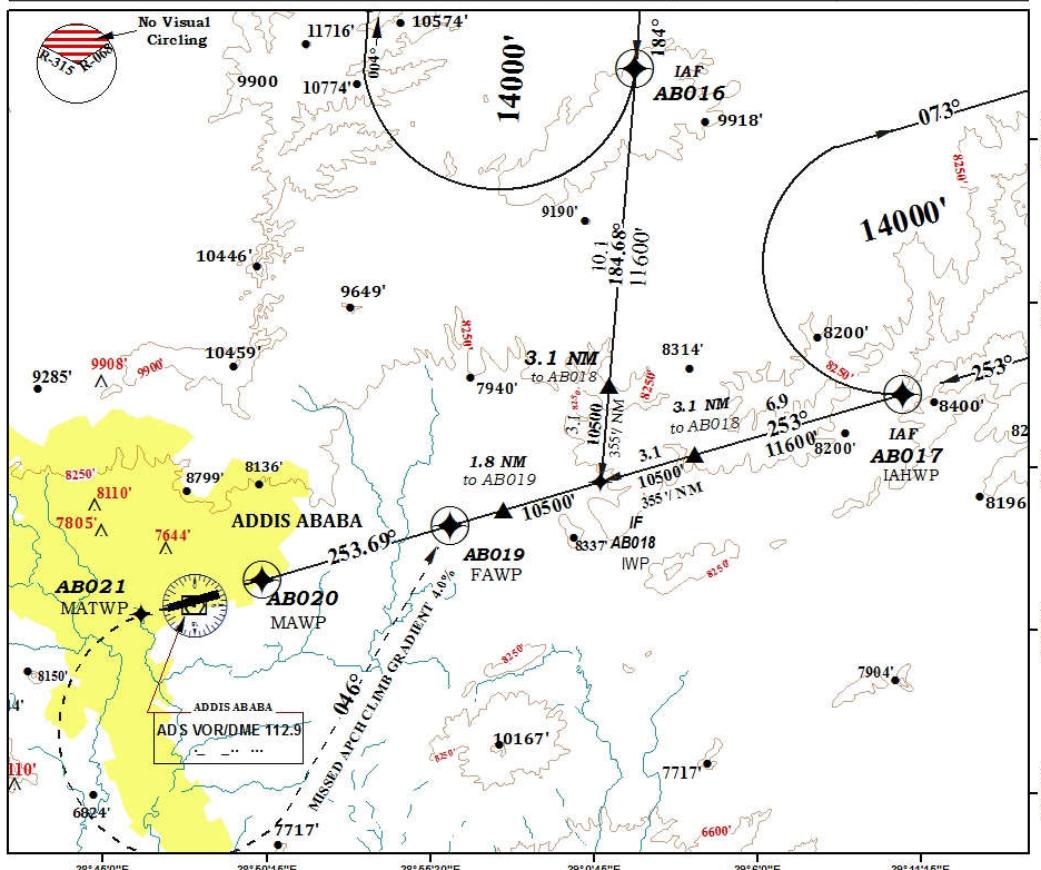
GND 121.9
APP 119.7
TWR 118.1

**ADDIS ABABA / HAAB
BOLE INTERNATIONAL
RWY 25L/R**





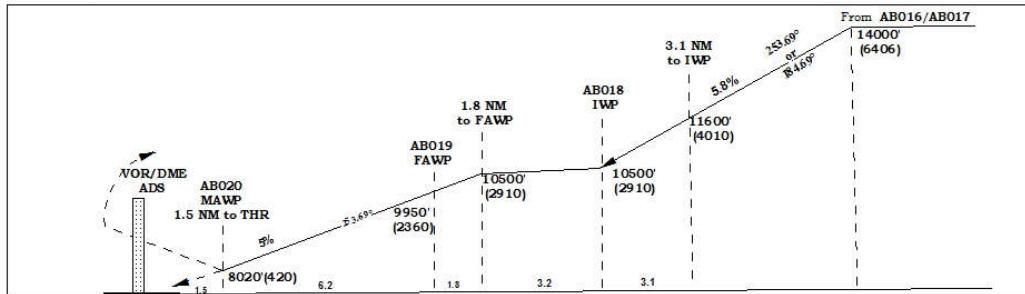
INSTRUMENT APPROACH CHART-ICAO			ADDIS ABABA/BOLE INT'L AIRPORT RNAV (GNSS) RWY 25R		
Bole Approach	BOLE Tower	BOLE Ground			
119. /	118.1	121.9			
Final Apch Crs 252° Min Alt AB019 9950' (2356) BEARINGS ARE MAGNETIC	AD Elevation 7625' THR Elevation 7594' RWY Elev 7594'	Alt Set:hpa Trans Level: By ATC Trans alt: 14000'			
MISSSED APCH: Turn LEFT (MAX 180°) as soon as practicable at or and Proceed to AB017, or as directed before AB021 onto 046°. Intercept 073.69° at AB019 climbing to 14000'					



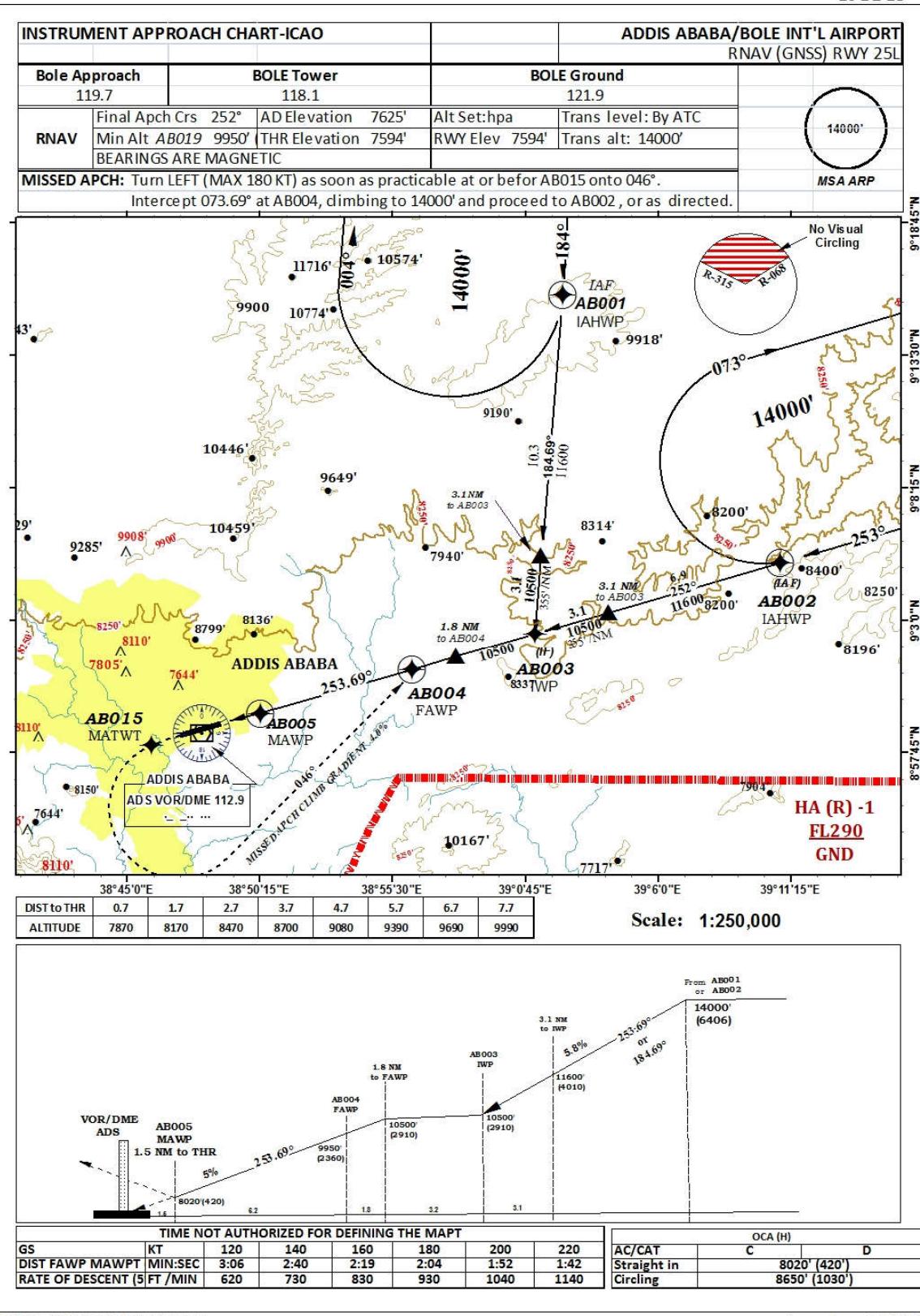
DIST to THR	0.7	1.7	2.7	3.7	4.7	5.7	6.7	7.7
ALTITUDE(FT)	7870	8170	8470	8700	9080	9390	9690	9990

Scale 1:250,000

OCA (H)	
AC/CAT	C D
Straight in	8020' (420')
circling	8650' (1030')

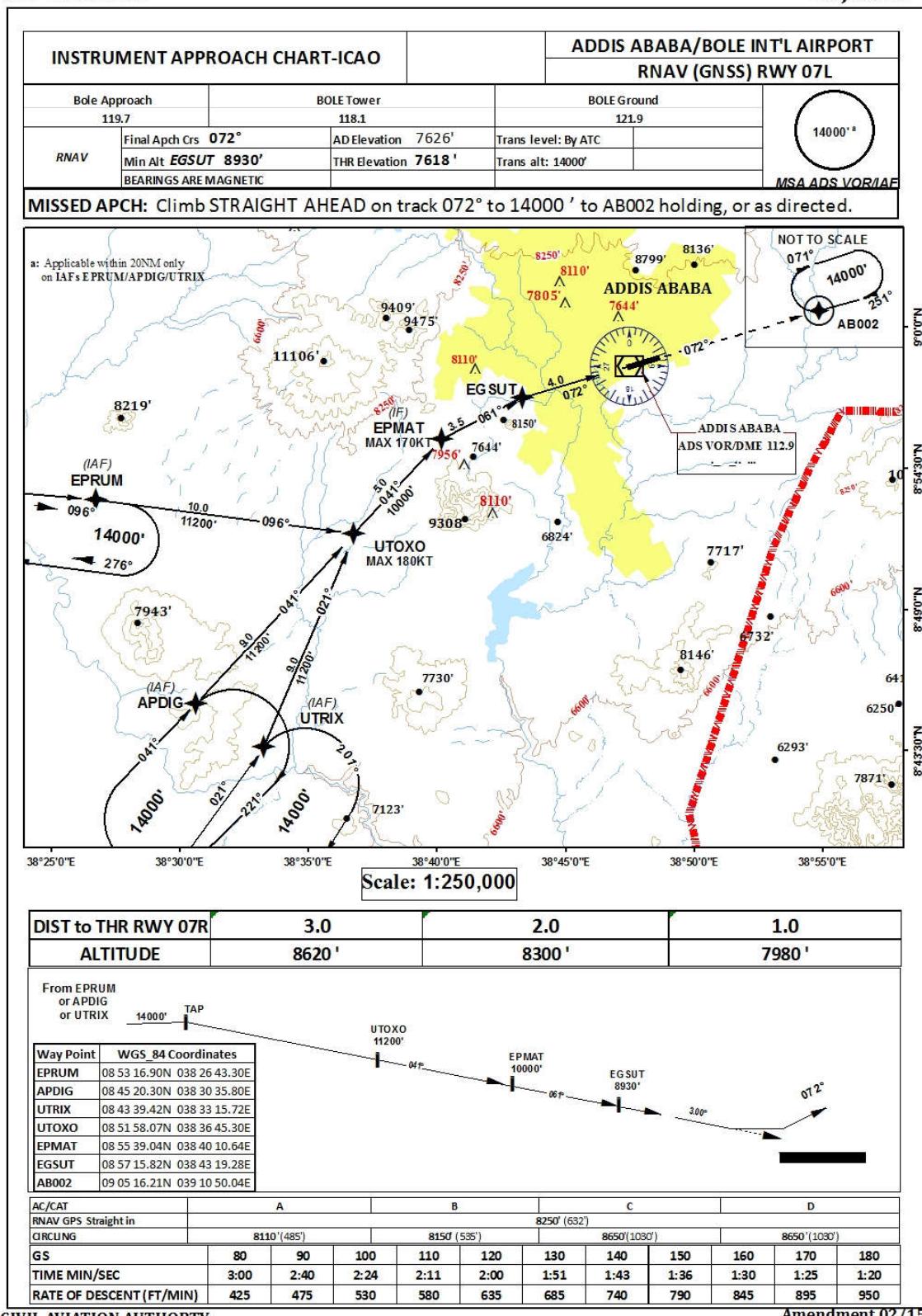


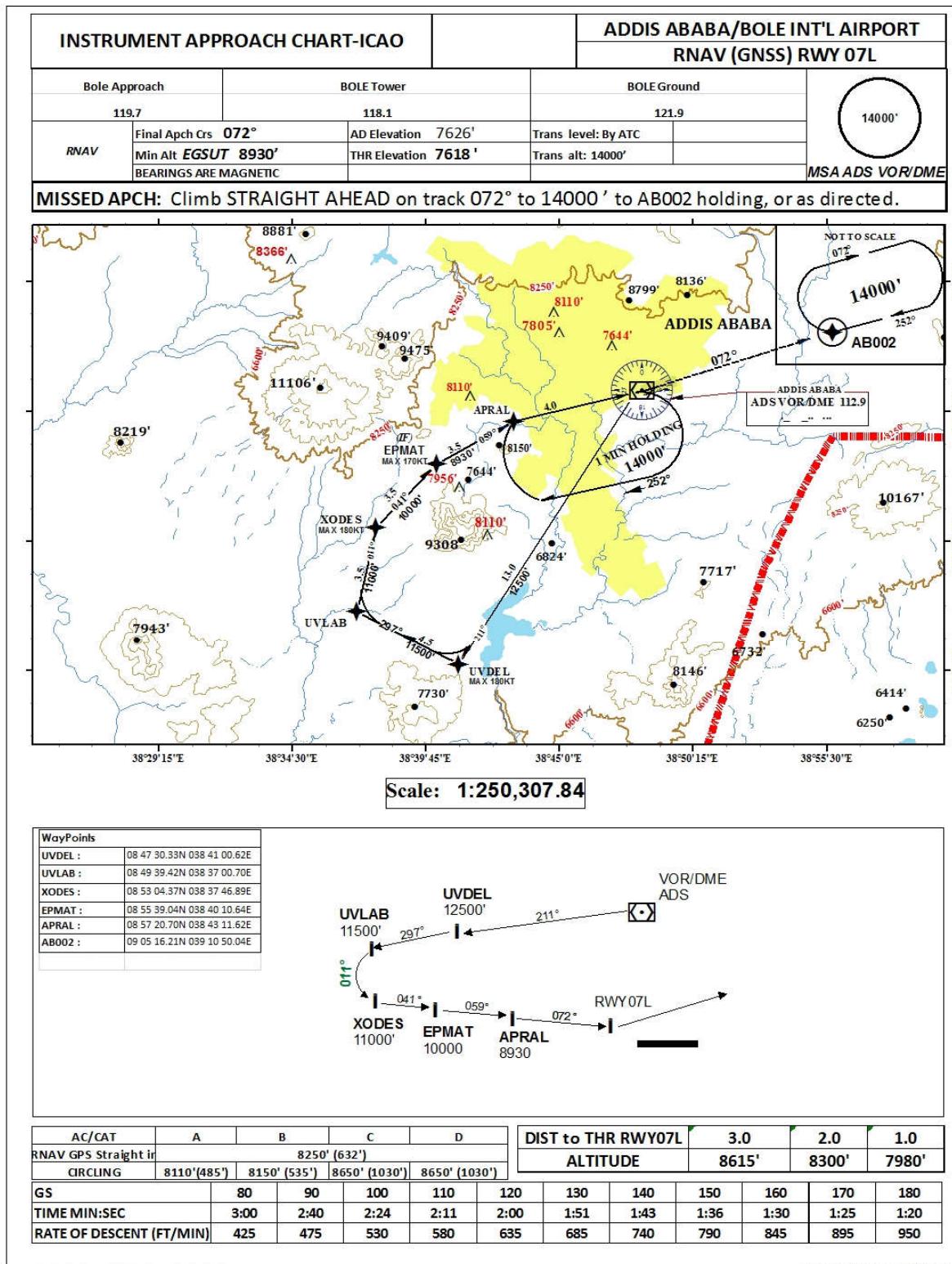
TIME NOT AUTHORIZED FOR DEFINING THE MAPT							
GS	KT	120	140	160	180	200	220
DIST FAWP MAWP 62 NM	MIN:SEC	3:06	2:40	2:19	2:04	1:52	1:42
RATE OF DESCENT (5%)	FT /MIN	620	730	830	930	1040	1140

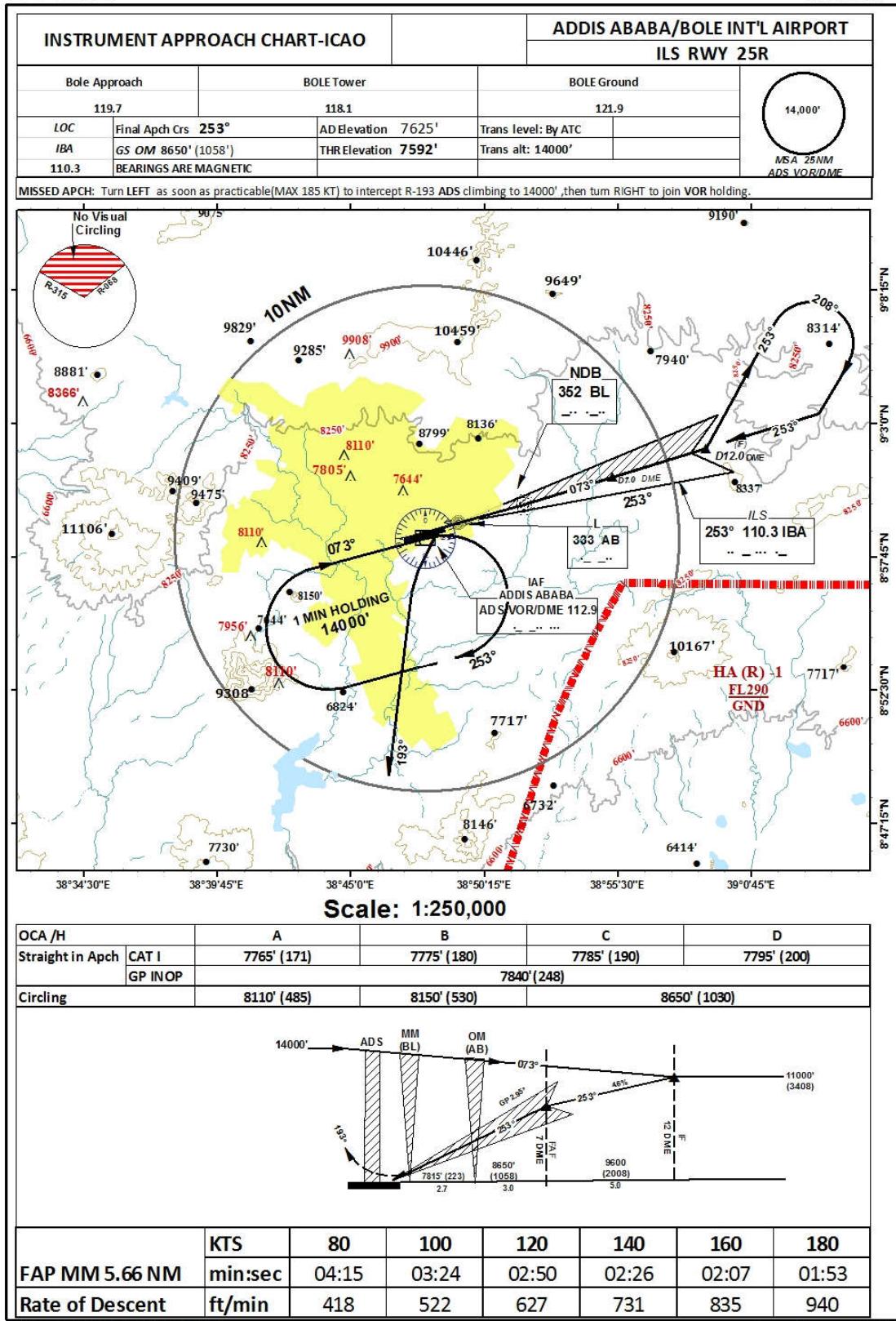


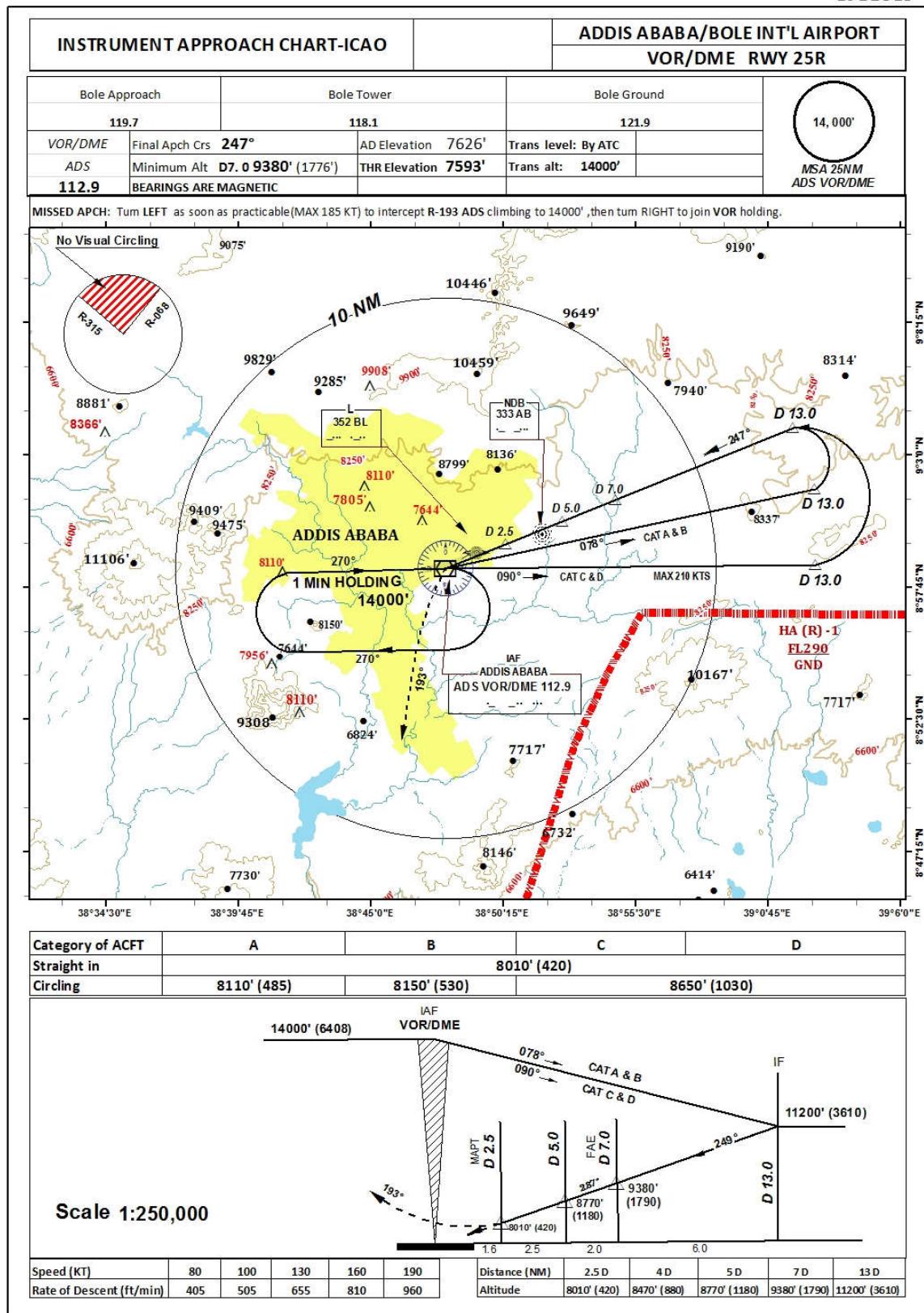
10 JUN 15

AIP ETHIOPIA

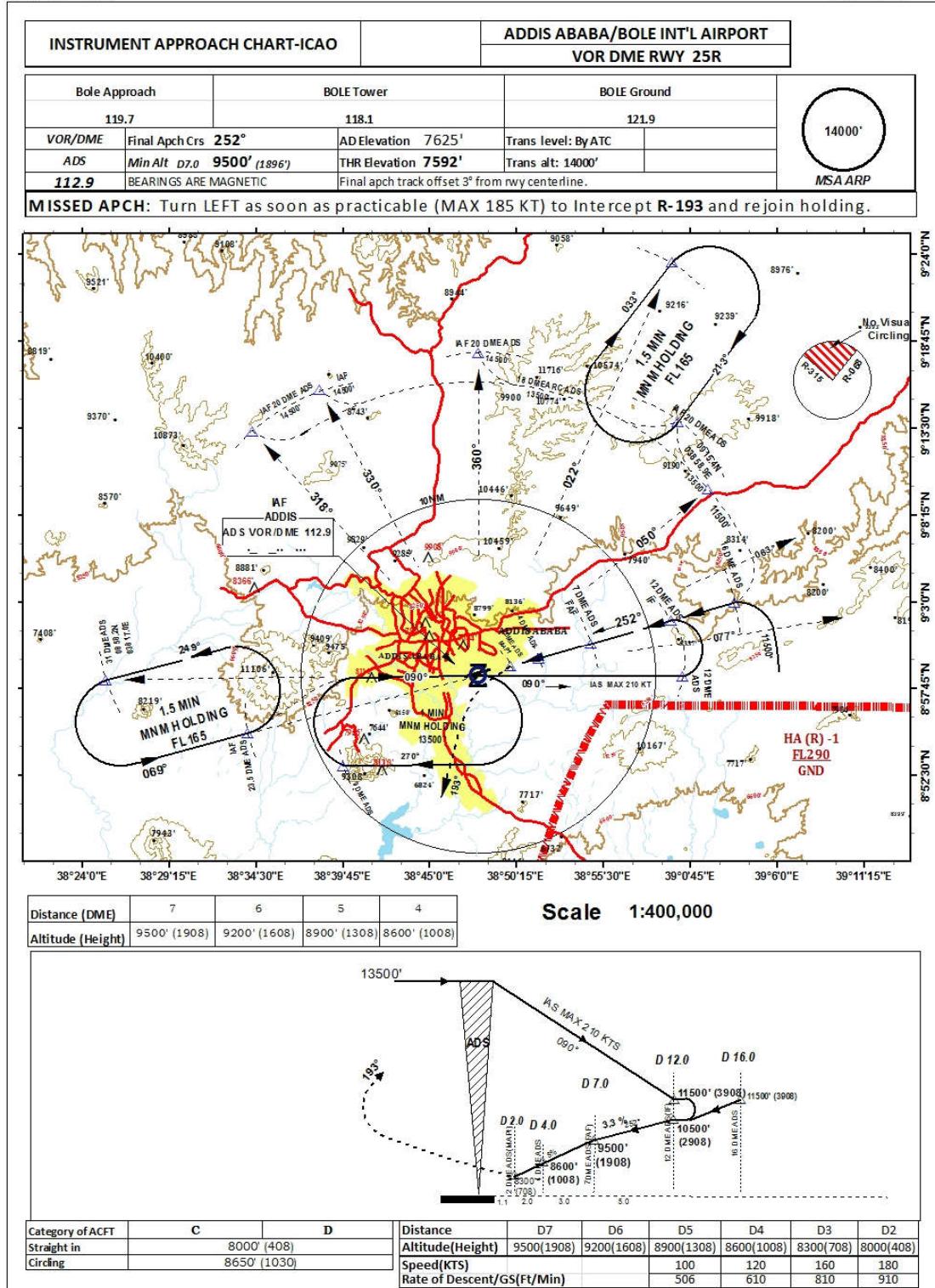








AIP ETHIOPIA

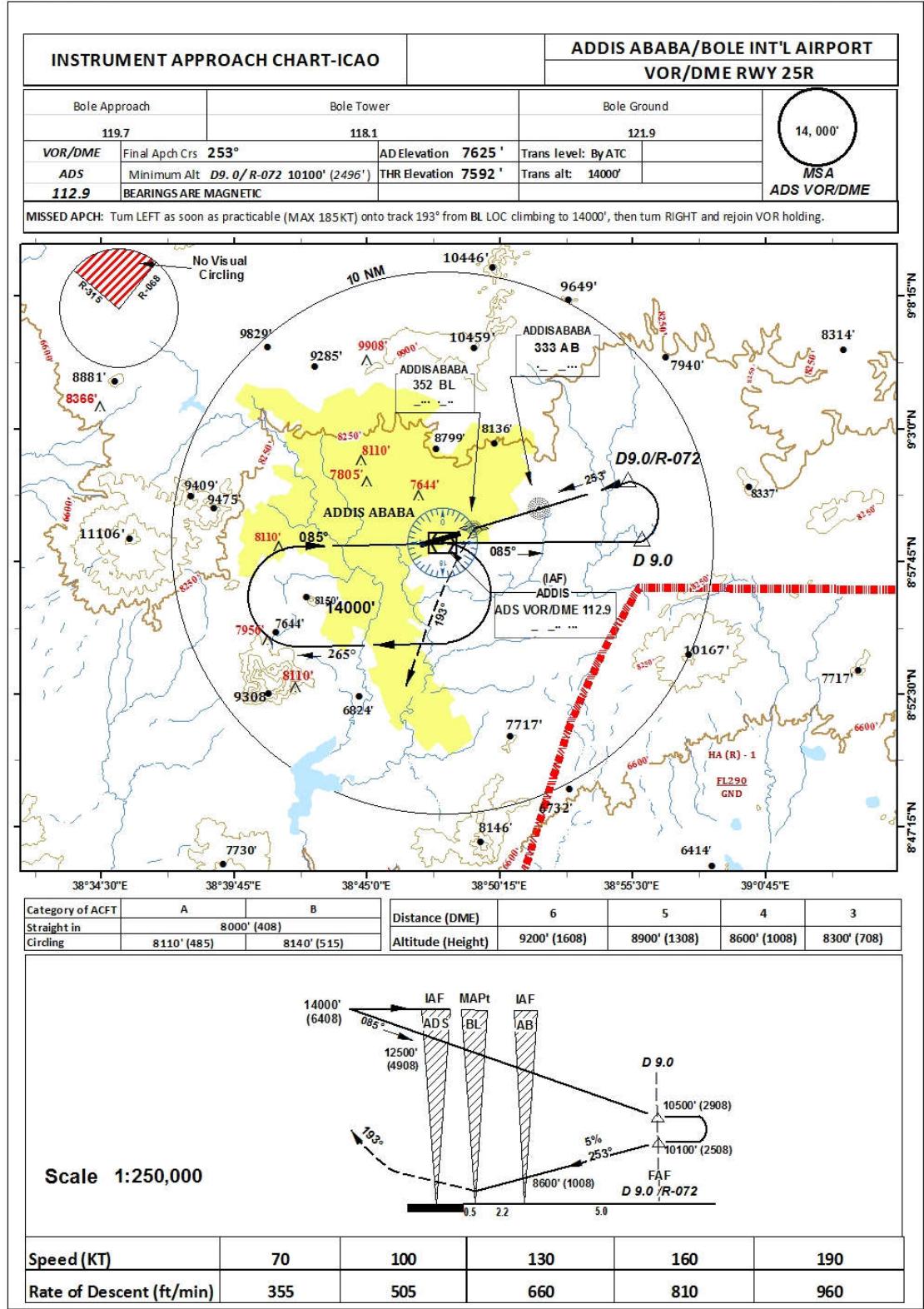


Civil Aviation Authority
Addis Ababa

Amendment 02/15

10 DEC 15

AIP ETHIOPIA



AD2 HAAB-38

13 JUN 02

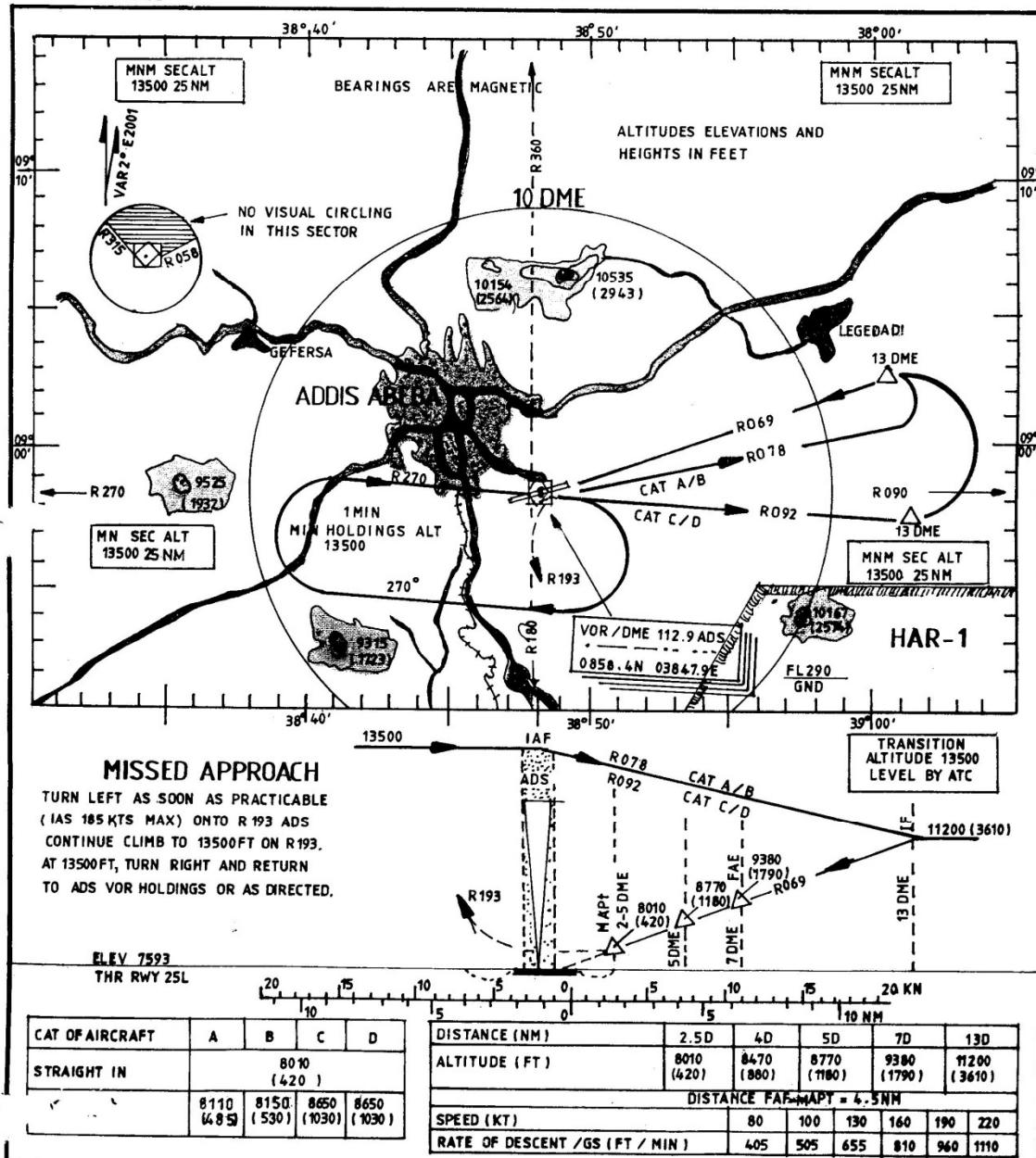
AIP ETHIOPIA

NSTRUMENT
APPROACH
CHART - ICAO

AERODROME ELEV 7625
HEIGHTS RELATED TO
THR RWY 25L ELEV 7593

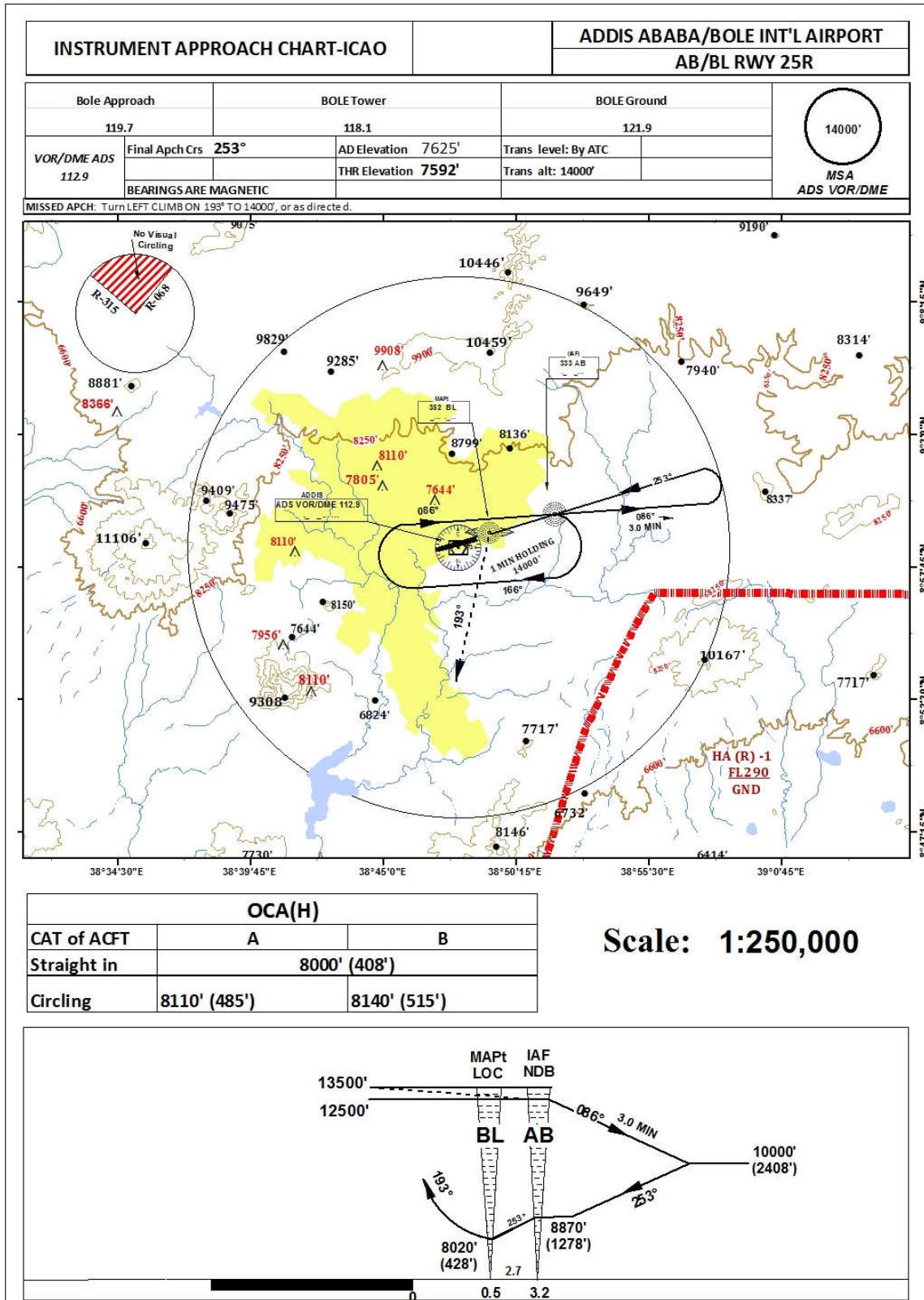
APP 119.7
TWR 118.1

ADDIS ABEBA / BOLE INTL
AIRPORT
ADS VOR/DME RWY 25L

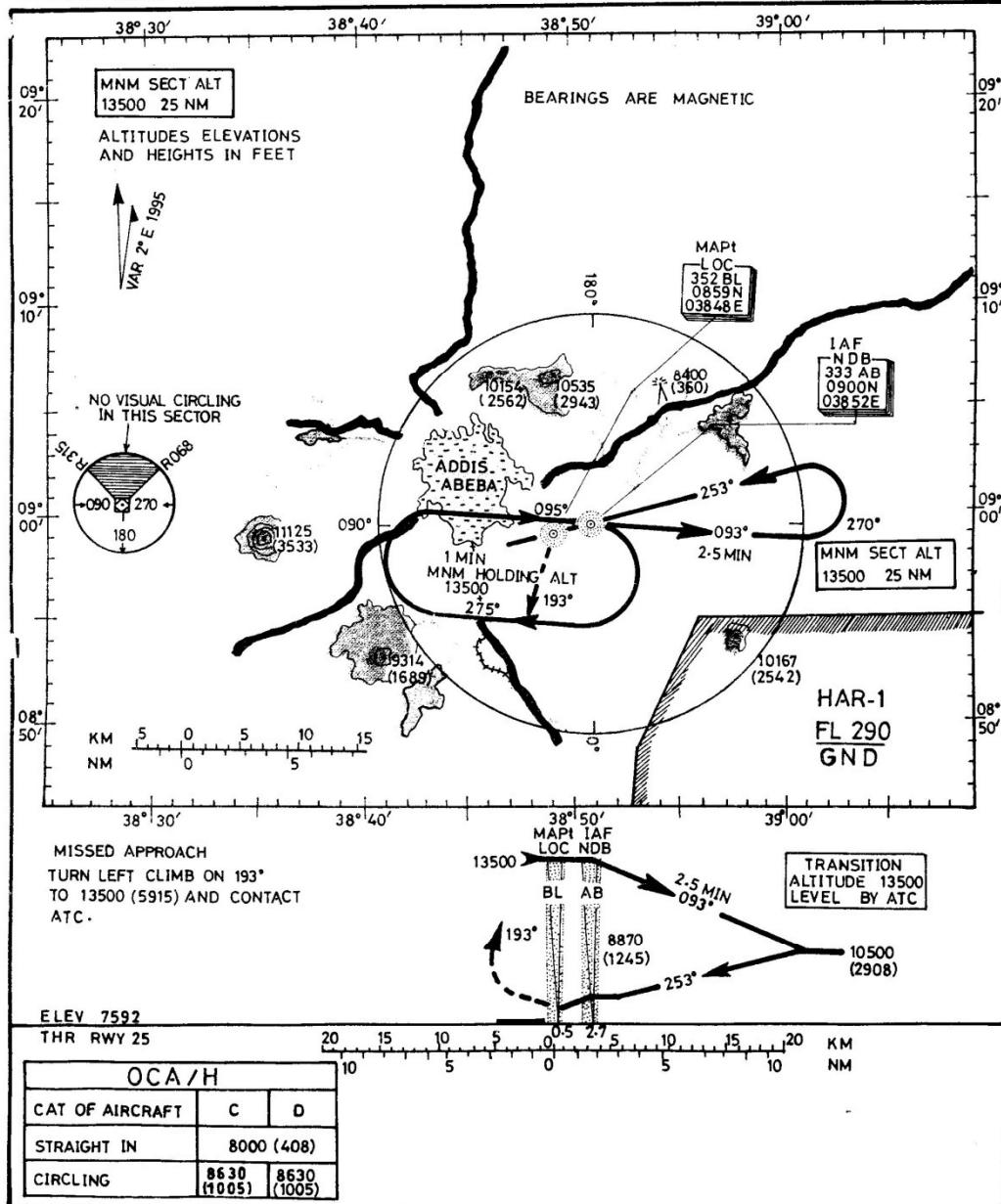


Civil Aviation Authority
Addis Ababa

Amendment 01/02

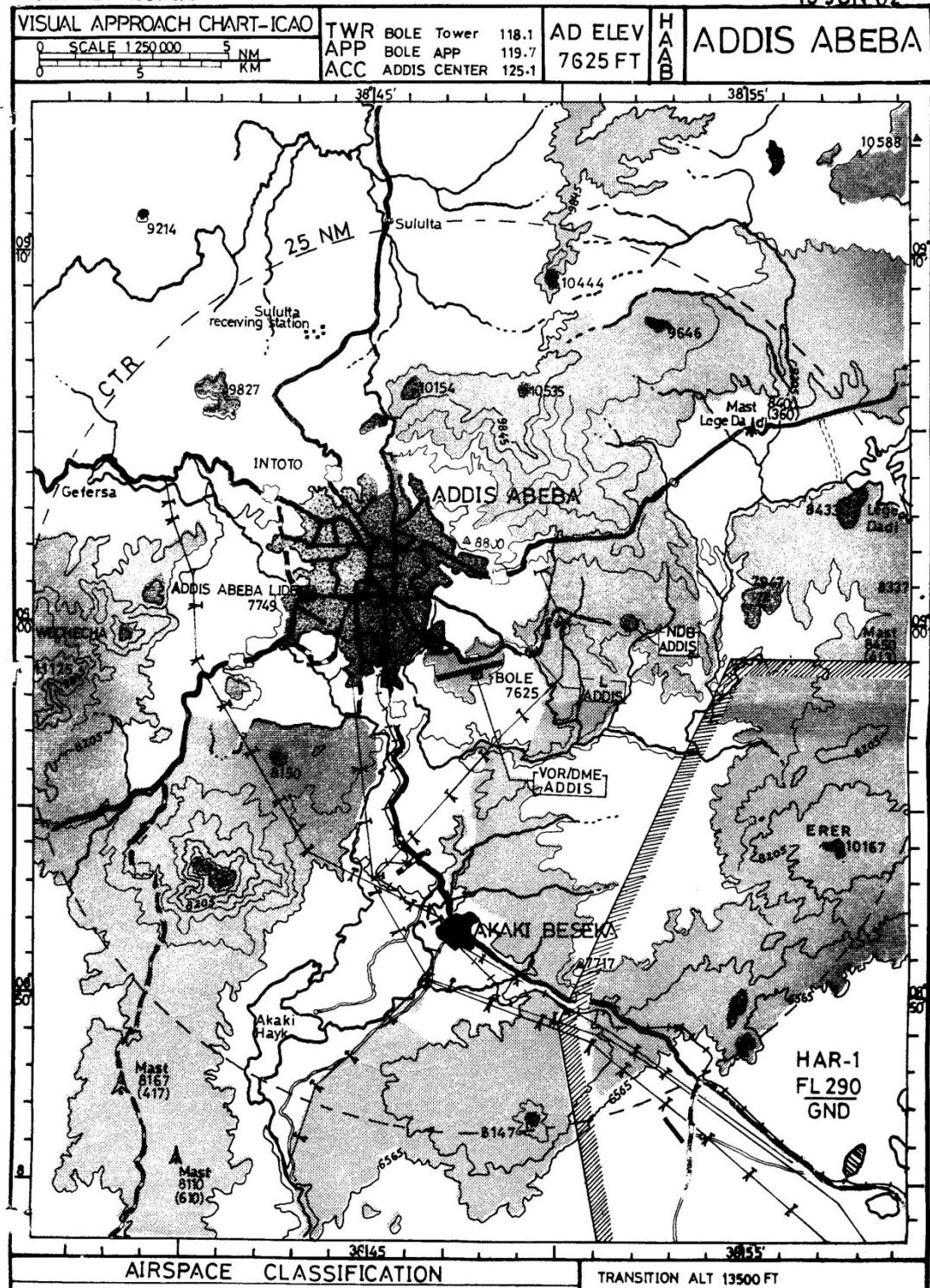


AIP ETHIOPIA

INSTRUMENT
APPROACH
CHART - ICAOAERODROME ELEV 7625
HEIGHTS RELATED TO DISPLACED
THR RWY 25 ELEV 7592 FTAPP 119.7
TWR 118.1ADDIS ABEBA/BOLE
INTL AIRPORT
AB/BL NDBs RWY 25

AIP ETHIOPIA

AD 2-HAAB-41
13 JUN 02



**CIVIL AVIATION AUTHORITY
ADDIS ABEBA**

TRANSITION ALT 13500 FT
Bearings are magnetic
Elev and alt in Ft M-S-L
HGT in FT above AD elev

AMENDMENT 1102

AD2 HAAB 42

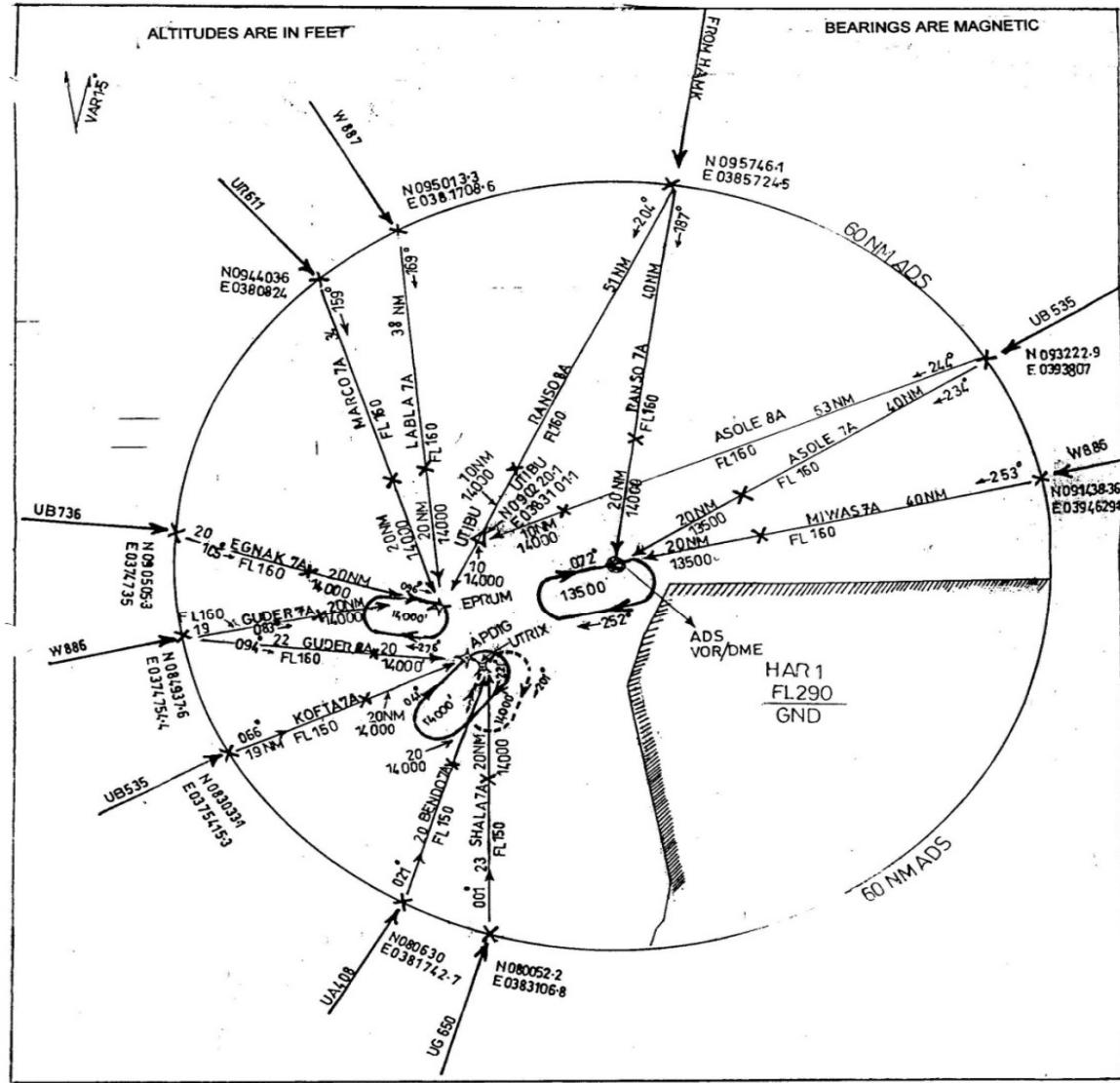
25 JUN 15

AIP ETHIOPIA

STANDARD ARRIVAL CHART
INSTRUMENT ICAO

APP119.7
TWR118.1

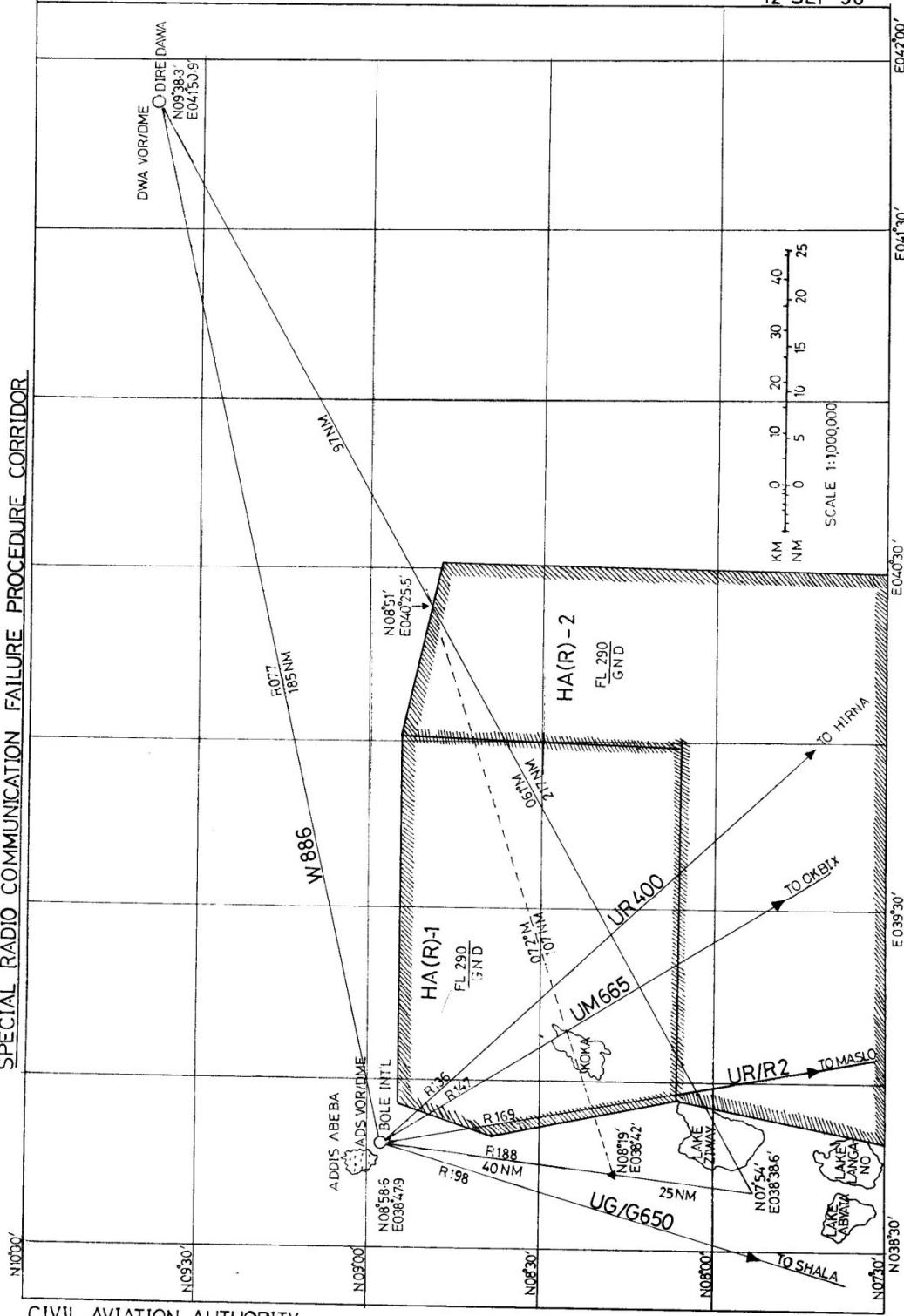
HAAB-RNAV(GNSS)
RWY 07R/L



AIP ETHIOPIA

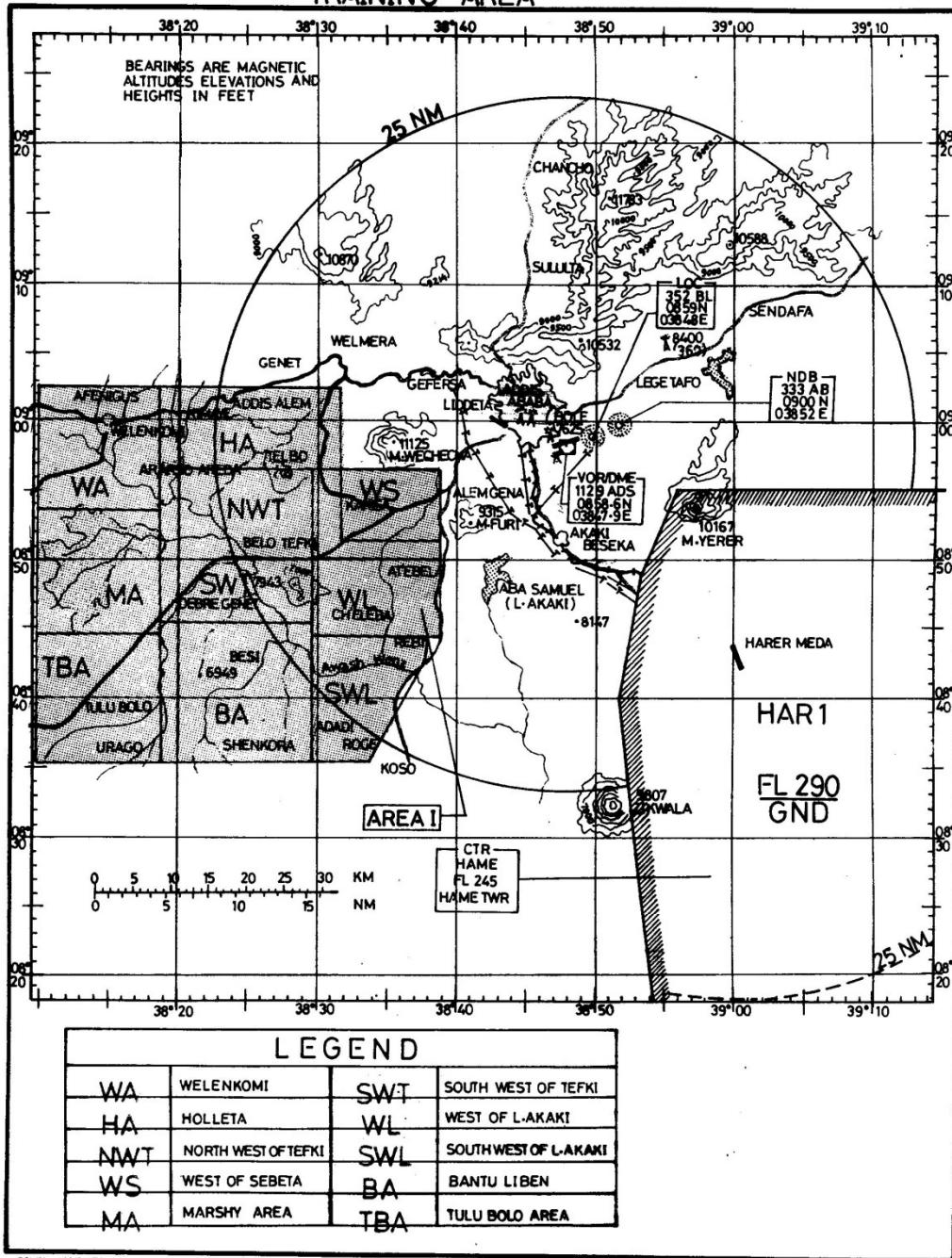
AD 2-HAAB-43
12 SEP 96

SPECIAL RADIO COMMUNICATION FAILURE PROCEDURE CORRIDOR



CIVIL AVIATION AUTHORITY
ADDIS ABEBA

TRAINING AREA



AIP ETHIOPIA

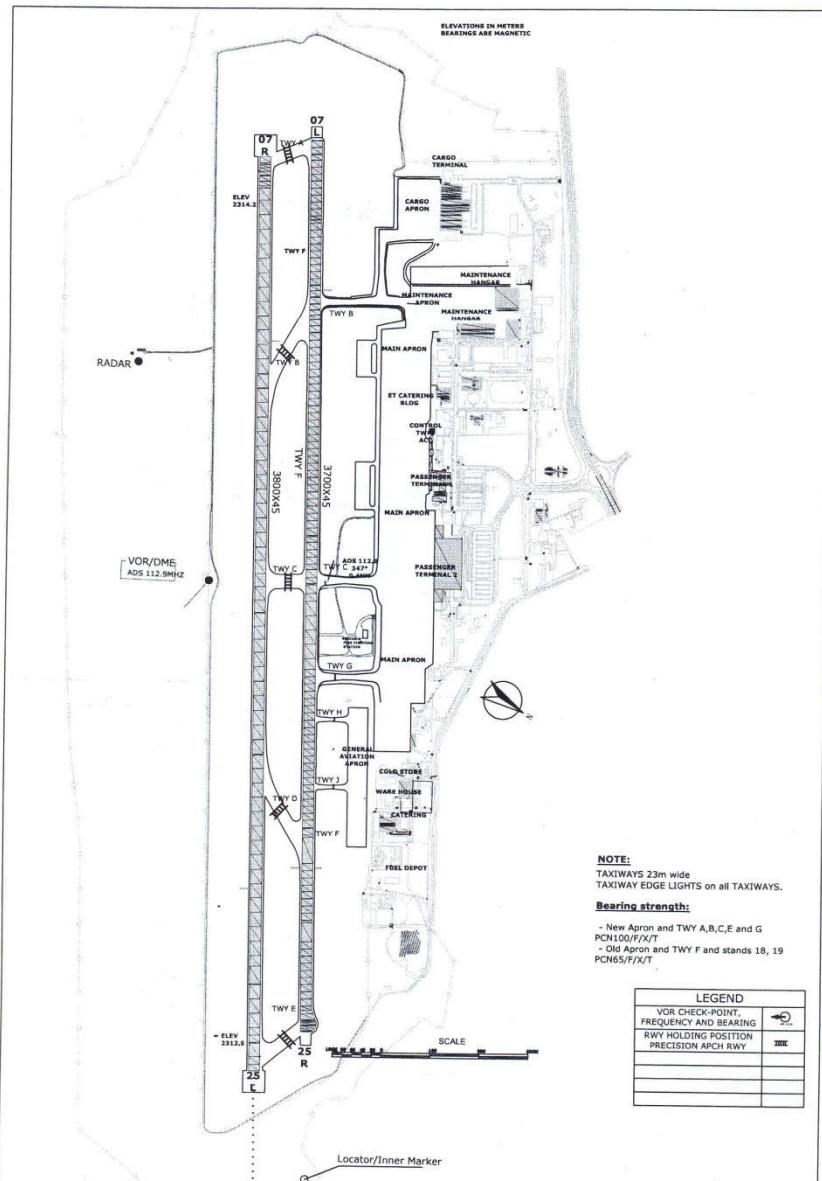
AD2 HAAB-46
11 DEC 14

AERODROME GROUND
MOVEMENT CHART - ICAO

APRON ELEV 2326.02m TWR 118.1

GND 121.9

ADDIS ABABA
BOLE INT'L AIRPORT



AD2 HAAB 47

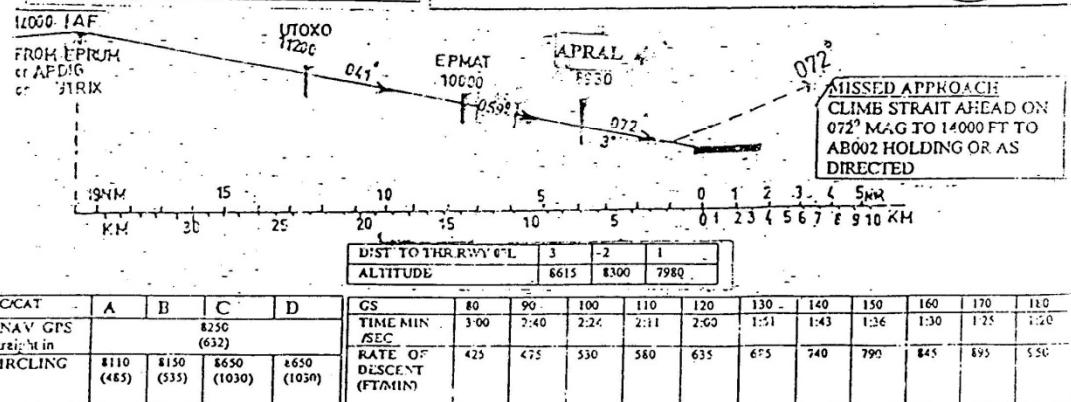
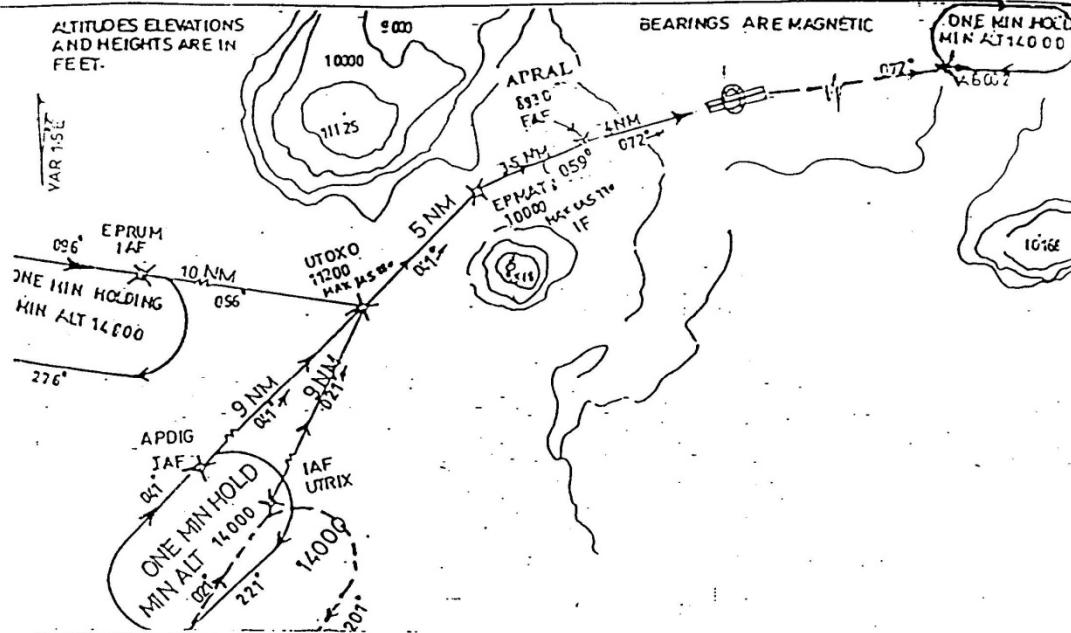
25 JUN 15

AIP ETHIOPIA

INSTRUMENT APPROACH
CHART-ICAO

AERODROME ELEV 7626 FT APPR 119.7
THR RWY 07R ELEV 7618 FT TWR 118.1
GND 121.9

ADDIS ABEBA/BOLE
INT'L AIRPORT
RNAV(GNSS) RWY 07L



AIP ETHIOPIA

AD2 - AERODROMES
HAAM- ARBA MINCH

AD2-1. AERODROME LOCATION INDICATOR AND NAME

1	<i>Location name</i>	Arba Minch
2	<i>Airport name</i>	Arba Minch Airport
3	<i>ICAO Location indicator</i>	HAAM

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP coordinates and site at AD</i>	06 01 43.512524N 037 35 02.4302E at THR RWY 03
2	<i>Directional and distance from city</i>	NE of the town 5km.
3	<i>Elevation/reference temperature</i>	1187.141m/27°C
4	<i>MAG VAR/Annual change</i>	1.7° E (1995) /.6' increase
5	<i>AD Administration, Address Telephone, Telex, AFS</i>	Postal Address: ARBAMINCH AIRPORT P.O.BOX 2119 Telephone:- 251 046 88115 95 Manager Office E-mail: jimma.ap@ethionet.et Arbaminch, Ethiopia
6	<i>Types of traffic permitted</i>	VFR
7	<i>Remarks</i>	Nil

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	0500-1400 UTC TUE,WED, SAT& SUN
2	<i>Customs and immigration</i>	Nil
3	<i>Health and sanitation</i>	Nil
4	<i>AIS Briefing office</i>	Nil
5	<i>ATS Reporting office</i>	Nil
6	<i>Met Briefing office</i>	Nil
7	<i>ATS</i>	Available during operational hours.
8	<i>Fueling</i>	Available during operational hours.
9	<i>Handling</i>	Nil
10	<i>Security</i>	0500-1400 UTC TUE,WED, SAT& SUN
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	(*) see NOTAM for latest Ethiopian Airlines flight SKED. For non-SKED flights prior arrangement is required.

AD2- 4. HANDLING SERVICES AND FACILITIES Nil

AD2- 5. PASSENGER FACILITIES

5.1 Hotels, restaurants and medical facilities: In town

5.2 Transportation available: - Taxi

AD2-6. RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT6
2	<i>Rescue Equipment</i>	1 foam tender
3	<i>Capability for removal of disabled aircraft</i>	Available, Crane, Excavator, Dozer
<i>Remarks</i>		Debube roads Authority Tel: 251 468810335 Arbaminch.
4	<i>Remarks</i>	9 trained personnel

Additional companies are available in Addis Ababa, which have necessary equipments for the recovery of disable aircrafts: Addis Mechanical enterprise Mobile crane 35 tone. Tel: 0114160303.

Lalibella enterprise and construction Mobile crane 40 tone. Tel: 0114653000.

Awash construction enterprise. Mobile cato crane 45 tone. Tel: 0114164460.

AD2-7. SEASONAL AVAILABILITY- CLEARING: - AD available at all seasons.

AD2-8. APRONS, TAXIWAYS AND CHECK LOCATION DATA..... Nil

RWY markings: THR & Centerline

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS:-

AD2-10. AERODROME OBSTACLES Nil

AD2-11. METEOROLOGICAL INFORMATION PROVIDED Nil

AD2-12. RUNWAY PHYSICAL CHARACTERISTICS

<i>Designations RWY NR</i>	<i>True & magnetic bearing</i>	<i>Dimensions Of RWY (M)</i>	<i>Strength and surface of RWY and SWY</i>	<i>THR coordinates</i>	<i>THR elevation and Highest elevation of TDZ of Precision APP RWY</i>
1	2	3	4	5	6
03	31.7° T 30° M			060143.5125N 0373502.4302E	1187.141M
21	211.7°T 210° M	2800x45	Asphalt concrete PCN 50/F/C/X/T	060259.8242N 0373550.8163E	1183.477M
<i>Slope of RWY/SWY</i>	<i>SWY dimension (M)</i>	<i>CWY Dimension (M)</i>	<i>Strip Dimension (M)</i>	<i>Obstacle free zone</i>	<i>Remark</i>
7	8	9	10	11	12
-2%	60	Nil	3500X150	Nil	
+2%	60	Nil			

AD2.13 DECLARED DISTANCES

<i>RWY Designator</i>	<i>TORA(M)</i>	<i>TODA(M)</i>	<i>ASDA(M)</i>	<i>LDA(M)</i>	<i>Remarks</i>
1	2	3	4	5	6
03	2800	2860	2860	2800	Nil
21	2800	2860	2860	2800	Nil

AD 2.14 APPROACH AND RUNWAY LIGHTING

<i>RWY</i>	<i>Approach Lights</i>	<i>Threshold Lights</i>	<i>VASIS PAPI</i>	<i>TDZ Lights</i>	<i>RWY CL Lights</i>	<i>RWY Edge Lights</i>	<i>RWY end LGT</i>	<i>SWY Length, Colour</i>	<i>REMA RKS</i>
1	2	3	4	5	6	7	8	9	10
03	Simple App white 300m high	Green	PAPI left/3° Unidirectional	Nil	Nil	2800m, 60m, 600m yellow the rest white	Red	Nil	
21	Simple App white 420m high	Green	PAPI left/3° Uni directional	Nil	Nil	2800m, 60m, 600m yellow the rest white	Red	Nil	Nil

AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY ----- Nil

AD2-16. HELICOPTER LANDING AREA ----- available in front of terminal

AD2-17. ATS AIRSPACE ----- Nil

AD 2.18 ATS COMMUNICATION FACILITIES

<i>Service</i>	<i>Call Sign</i>	<i>Frequency</i>	<i>Co ordinates</i>	<i>Emission</i>	<i>Hours of Operation</i>	<i>Remarks</i>
1	2	3	4	5	6	7
TWR			060224.8859N 0373517.0147E	A3		
	HAAM Tower	118.6 MHZ				
	Arba Minch Ground	121.9 MHZ				

AD2-19. RADIO NAVIGATION AND LANDING AIDS

<i>Type</i>	<i>Ident</i>	<i>Frequency (CH)</i>	<i>Coordinates</i>	<i>Emission</i>	<i>Hours of operation</i>	<i>Remarks</i>
1	2	3	4	5	6	7
L	AM	275KHZ	060327.6930N 0373608.4610E	A2	H24	Power 100 watts Coverage 150NM
ADS-B						

AD2-20. LOCAL TRAFFIC REGULATIONS ----- NIL

AD2-21. NOISE ABATEMENT PROCEDURES ----- NIL

AD2-22. FLIGHT PROCEDURES**1. Instrument approach procedures for Arba Minch Airport****1.1 Holding procedures**

<i>Holding point</i>	<i>Inbound Track Mag</i>	<i>MNM Holding ALT/LEVEL</i>	<i>Turn</i>	<i>Outboun d time</i>	<i>Remarks</i>
AM NDB	039°M	11000FT	Right	1 MIN*	CAT A / B
AM NDB		11000FT	Right	1 MIN*	CAT C / D

*1.5 MIN above 14000ft

1.2 AM NDB RWY 21(CAT A / B and C / D Aircraft)**Initial approach**

MNM SEC ALT

NW	14000ft
SW	14000ft
SE	13000ft
NE	13000ft

Maintain the relevant MNM sector ALT overhead the AM NDB. Descend in the hold to 11,000ft. then proceed outbound on 039°MAG for 4.5MIN to ALT 7400ft MSL. Execute base turn right on level flight to establish the final approach track of 227°MAG.

1.3 Final approach

Continue descent from 7400ft on approach track of 227° MAG to OCA /H of 5400 MDA/H (1595)

1.4 Missed approach

If visual contact is not established on reaching OCA /H or MDA/H climb straight ahead to 11000ft. then turn left to join the AM holding.

AD2-23. ADDITIONAL INFORMATIONNil**AD2-24. CHARTS RELATED TO AN AERODROME**

Instrument Approach Chart - ICAO-NDB

RWY 11R(CAT A/B ACFT)

AD2 HAAM-4

Aerodrome chart ICAO

AD2 HAAM-5

Aerodrome obstacle chart ICAO.....

AD2 HAAM-6

AIP ETHIOPIA

AD2 HAAM-4
24 JUN 04

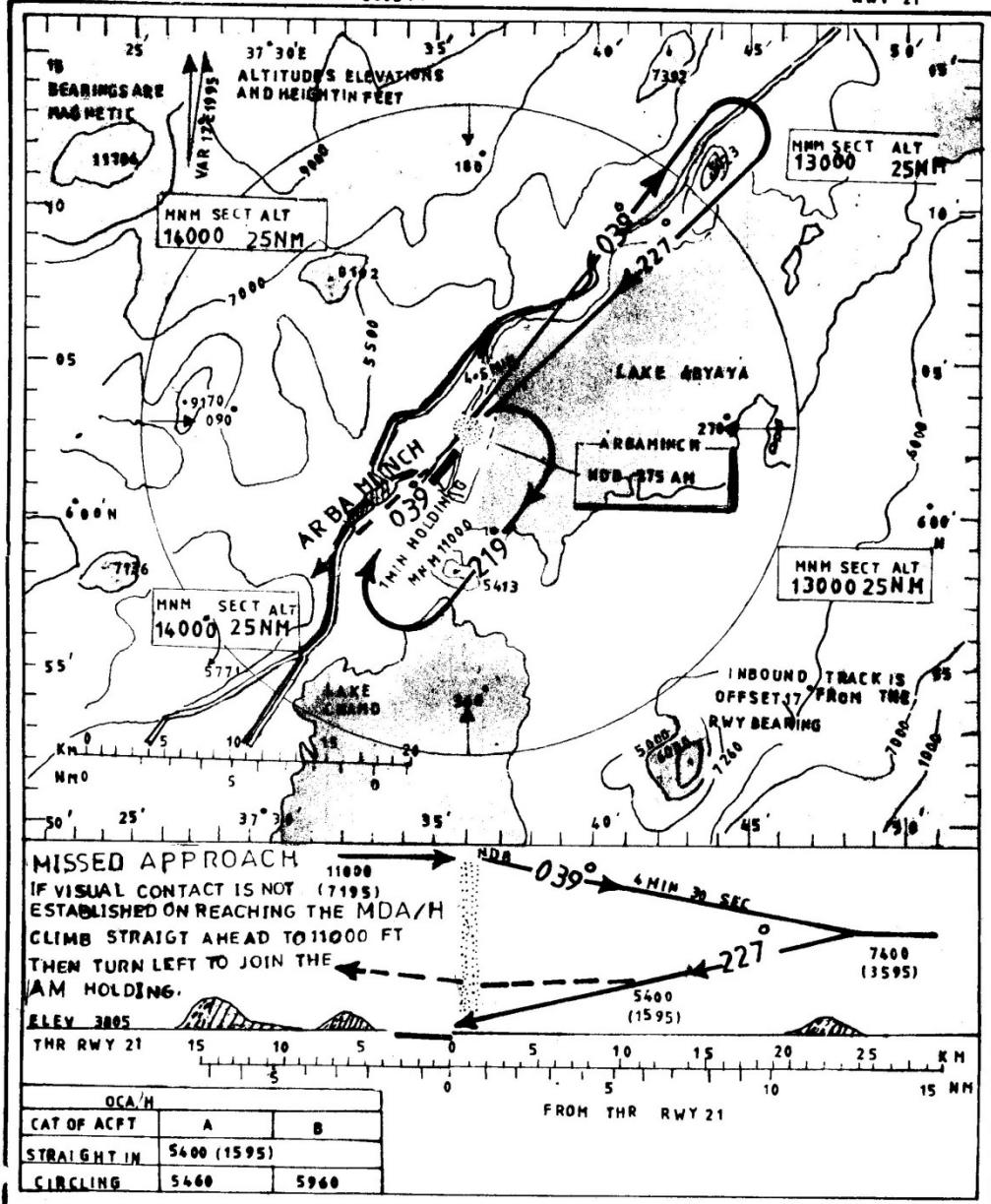
**INSTRUMENT
APPROACH
CHART-ICAO**

AERODROME ELEV 3805FT

HEIGHTS RELATED TO
THR RWY 21
ELEVATION 3805 FT

TOWER —

ARBAMINCH
NDB
RWT 21



CIVIL AVIATION AUTHORITY
ADDIS ABEBA

IP ETHIOPIA

AD2 HAAM-6
13 JUN 02

AERODROME OBSTACLE CHART - ICAO
TYPE A (OPERATING LIMITATION)

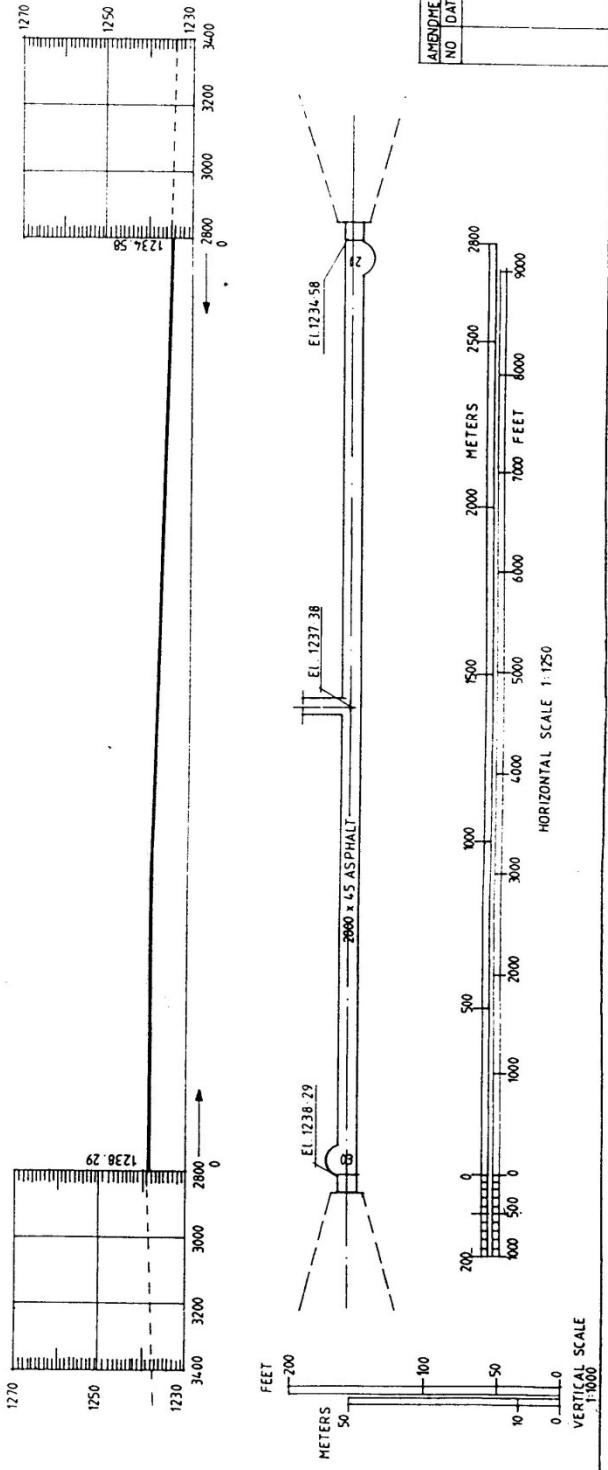
ELEVATIONS AND DIMENSIONS IN METRES
BEARINGS ARE MAGNETIC
VAR 17° E - 1995

ARBA MINCH

ETHIOPIA

RWY 03 / 21

DECLARED DISTANCE	
RWY 03	RWY 21
2800	TAKE-OFF RUN AVAILABLE
2860	TAKE-OFF DISTANCE AVAILABLE
2860	ACCELERATE-SLOW DISTANCE AVAILABLE
2860	LANDING DISTANCE AVAILABLE



iii Aviation Authority
Addis Ababa

Amendment 1/02

CIVIL AVIATION AUTHORITY
AERONAUTICAL INFORMATION SERVICE
P.O.BOX 978
ADDIS ABEBA

Phone: 251 116650200 Ext 153, 155
AFTN: HAAAYGYX
FAX: (251) -11 - 6650281
E-mail: caa.airnav@ethionet.et

AIRAC AIP SUP C

c05/18
03 JUL 2018

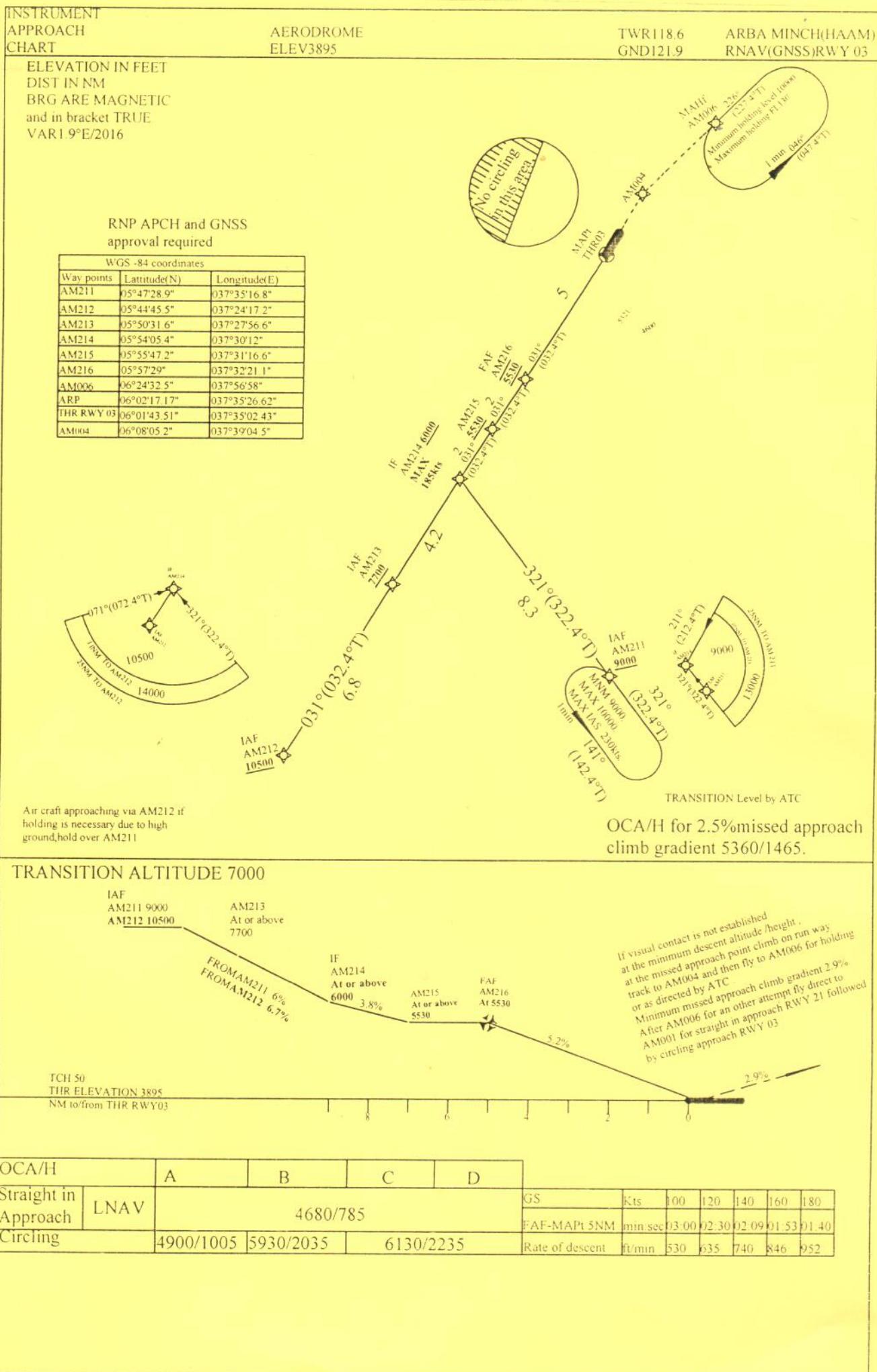
Arbaminch Airport RNAV (GNSS) Approach Procedure for Runway 03.

Effective from 19 JUL 2018 RNAV GNSS Approach Procedure is established for Runway 03 at Arbaminch (HAAM) Airport and will be applicable as shown in attachment 1.

Fantaye Yakob

Director, Aeronautical Information Services.

Attachment 1 to AIRAC AIP SUP05/18



AD2- AERODROMES

HAAX – AXUM

AD2-1. AERODROME LOCATION INDICATOR AND NAME

1	Location name	Axum
2	<i>Airport name</i>	Axum ATSE YOHANNES 4 th Air port
3	<i>ICAO Location indicator</i>	HAAX

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	ARP Coordinates and site at AD	14 08 13.44887N 038 46 33.79914E at THR 34
2	<i>Direction and distance from city</i>	East of the town 5.5KM
3	<i>Elevation/reference temperature</i>	2107.823M THR 34/26°C
4	<i>MAG VAR/Annual change</i>	2.3°E (1995) / .6'
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	Postal Address: AXUM AIRPORT P.O.BOX 190 AXUM, ETHIOPIA Telephone:- 251 348 75 9014 Manager Office 251 348 75 9007 Tower 251 348759003 Fire Brigade E-mail: axumatsey10@gmail.com Axum, Ethiopia
6	<i>Types of traffic permitted</i>	IFR/VFR
7	<i>Remarks</i>	Nil

AD2-3. OPERATIONAL HOURS

1	AD Administration	0400 – 1500 UTC daily
2	<i>Customs and immigration</i>	Nil
3	<i>Health and sanitation</i>	Nil
4	<i>AIS Briefing office</i>	Nil
5	<i>ATS Reporting office</i>	Nil
6	<i>Met Briefing office</i>	0400 – 1500 UTC daily
7	<i>ATS</i>	0400 – 1500 UTC daily
8	<i>Fueling</i>	0400 – 1500 UTC daily
9	<i>Handling</i>	On request 0400-1500 UTC daily
10	<i>Security</i>	0400 – 1500 UTC daily
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	Nil

AD2-4. HANDLING SERVICES AND FACILITIESLIMITED**AD2-5. PASSENGER FACILITIES**

2. 5.1 Hotels, restaurants and medical facilities: In town

2.5.2 Transportation available: Taxis

AD2-6. RESCUE AND FIRE FIGHTING SERVICES:

1	<i>AD Category for fire fighting</i>	CAT5
2	<i>Rescue equipment</i>	TWO foam tender
3	<i>Capability for removal of disabled aircraft</i>	Limited
4	<i>Remarks</i>	16 Trained personnel.

AD2-7. SEASONAL AVAILABILITY- CLEARING: - AD available at all seasons.**AD2-8. APPRONS, TAXIWAYS AND CHECK LOCATION DATA**

1	<i>Apron Surface and Strength</i>	Surface: Asphalt concrete Strength: PCN 50/F/C/X/T
2	<i>Taxiway width, Surface and Strength</i>	Width:23m Surface: Asphalt concrete Strength: PCN 50/F/C/X/T
3	<i>ACL Location and Elevation</i>	Nil
4	<i>VOR/INS Check points</i>	Nil
5	<i>Remarks</i>	Nil

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	<i>Use of aircraft stands ID signs, TWY guide lines and Visual docking/parking guidance system of aircraft stands.</i>	Yellow apron markings guide aircrafts to stands
2	<i>RWY and TWY markings.</i>	<i>RWY markings:</i> Designation, THR, Touchdown, Centreline, edge. <i>RWY LGT:</i> Edge elevated bi-directional and brilliance control of combination of white and amber lights <i>TWY markings:</i> Centreline, Taxi holding position, Edge <i>TWY LGT:</i> Edge elevated omni directional blue lights
3	<i>Stop bar</i>	Nil
4	<i>Remarks</i>	Nil

AD2-10. AERODROME OBSTACLES Nil**AD2-11. METEOROLOGICAL INFORMATION PROVIDED**

1	<i>Associated MET Office</i>	Axum Met Station
2	<i>Hours of Service MET office outside hours</i>	12 Hrs
3	<i>Office responsible for TAF preparation Periods of Validity</i>	Bole Met.Office Aa per local flight schedule
4	<i>Type of landing forecast Interval of issuance</i>	As required
5	<i>Briefing/Consultation Provided</i>	
6	<i>Flight documentation Language(s) used</i>	
7	<i>Charts and other information available for briefing consultation</i>	
8	<i>Supplementary equipment available for providing information</i>	Digital Wind System
9	<i>ATS units provided with information</i>	TWR
10	<i>Additional information</i>	

AIP ETHIOPIA

AD2-12. RUNWAY PHYSICAL CHARACTERISTICS

Designations RWY NR	True & magnetic bearing	Dimensions of RWY (M)	Strength & surface of RWY and SWY	TH R coordinates	THR elevation & Highest elevation of TDZ of Precision APP RWY	
1	2	3	4	5	6	
16	160° T 162.3° M	2400x45	Asphalt concrete PCN 50/F/C/X/T	14 09 24.72236N 038 46 08.75641E 14 08 13.44887N 038 46 33.79914E	2097.626 2107.207	
34	340° T 342.3° M					
Slope of RWY/SWY	SWY dimension (M)	CWY dimension (M)	Strip Dimension (M)	Obstacle free zone	Remark	
7	8	9	10	11	12	
+0.42%	60	Nil	2720X50	Nil	Nil	
-0.42%	60	Nil				
RWY Designator	TORA(M)		TODA(M)	ASDA(M)	LDA(M)	Remarks
1	2	3	4	5	6	
16	2400	2460	2460	2400	2400	Nil
34	2400	2460	2460	2400	2400	

AD2-13. DECLARED DISTANCES

AD2-14. APPROACH AND RUNWAY LIGHTING

RWY	Approach Lights Type, Length, Intensity	Threshol Lights	VASIS PAPI	TDZ Length	RWY CL Lights Spacing, Colour, Intensity	RWY Edge Lights Spacing, Colour, Intensity	RWY end LGT	SWY LGT	RMR KS
1	2	3	4	5	6	7	8	9	10
16	Simple App white 200m high	Green	PAPI left/3° Uni directional	Nil	Nil	2400m, 60m, the rest white	Red	Nil	
34	Simple App white 300m high	Green	PAPI left/3° Uni directional	Nil	Nil	2400m, 60m, 600m yellow the rest white	Red	Nil	Nil

AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY ----- Nil

AD2-16. HELICOPTER LANDING AREA: - In front of the terminal building.

AD2-17. ATS AIRSPACE ----- Nil

AD2-18. ATS COMMUNICATION FACILITIES

Service	Call Sign	Frequency	Coordinates	Emission	Hours of Operation	Remarks
1	2	3	4	5	6	7
TWR	Axum Tower	118.7MHZ 121.9MHZ 7595khz 121.5 MHZ	038 46 36.40650E 14 08 39.70310N	A3	0400-1500	Power 50 Watts Power 50 Watts Domestic Power 50 Watts Emergency
GND						

AD2-19. RADIO NAVIGATION AND LANDING AIDS

Type	Ident	Frequency (CH)	Coordinates	Emission	Hours of operation	Remarks
1	2	3	4	5	6	7
NDB	AX	440KHZ	14 08 45.48360N 038 46 34.79391E	A2	H24	Power 75 Watts Coverage 150NM

AD2-20. LOCAL TRAFFIC REGULATIONS ----- Nil

AD2-21. NOISE ABATEMENT PROCEDURES ----- Nil

AD2-22. FLIGHT PROCEDURES**2. Instrument approach procedures for Axum Airport****1.1 Holding procedures**

Holding point	Inbound Track Mag	Outbound Track Mag	MNM Holding ALT/LEVEL (ft)	Turn	Outbound time	Remarks
AX NDB	342°	162°	12,000 FT	Left	3.5 MIN	CAT A / B

1.2 AX NDB RWY 34 (CAT A/B Aircraft)**Initial approach**

MNM SEC ALT centered on AX NDB:

NE 12,000ft

SE 12,000ft

SW 10,500ft

NW 10,500ft

When cleared for approach, proceed outbound on a MAG track of 162° for 3.5 minutes descending to 11,500 ft; turn left on level flight to establish the final approach track of 342° MAG.

1.3 Final approach

Continue descent from 11,500 ft on final approach track of 342° MAG to the obstacle clearance altitude/height OCA/H 8,350 (1,390) ft.

1.4 Missed approach

If visual contact is not established at OCA /H or MDA/H climb straight ahead to 8,500 (2,575), turn left on to 162°, climb to 12,000 (3,660) and turn left to AX NDB.

Instrument approach procedure for Axum Airport chart is shown in the attachment.

AD2-23. ADDITIONAL INFORMATION ----- Nil

AD2-24. CHARTS RELATED TO AN AERODROME

Instrument Approach Chart - ICAO-NDB (CAT A/B ACFT). AD2 HAAX-5

Aerodrome chart - ICAOAD2 HAAX-6

Aerodrome obstacle chart - ICAO.....AD2HAAX-7

Visual Approach Chart - ICAO.....AD2HAAX-8

24 JUN 04

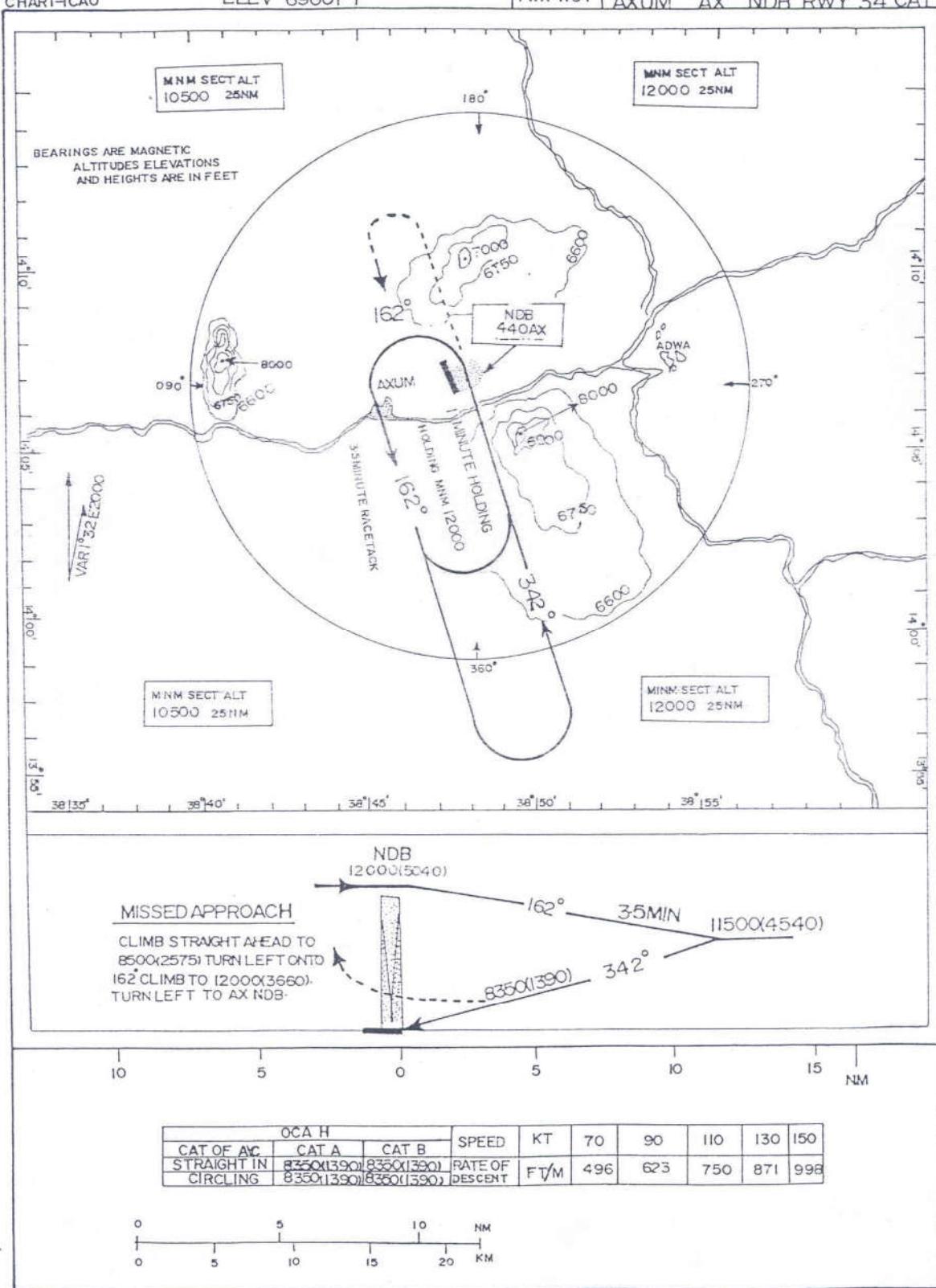
AIP ETHIOPIA

INSTRUMENT
APPROACH
CHART-ICAO

AERODROME
ELEV 6960FT

TWR 11B:7

AXUM AX NDB RWY 34 CAT A



Amendment 1/04

Civil Aviation Authority
Addis Abeba

AIP ETHIOPIA

AERODROME CHART -ICAO

14°08'13.4488"N
038°46'33.7991"E

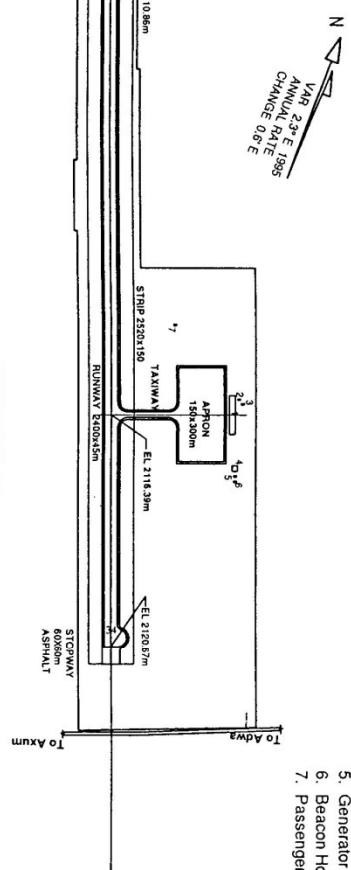
ELEV 2107.823 m
AD2 HAAX-6

13 DEC 12

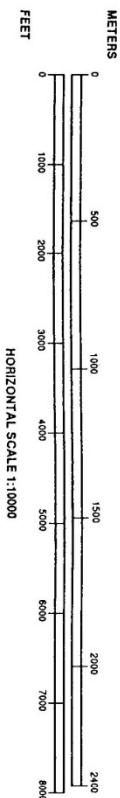
RWY	DIRECTION	THR COORDINATES	BEARING STRENGTH
16	180°(T)	140924 72°235 N 0384608 75°341 E	ASPHALT CONCRETE PCN SOFC/CT (RUNWAY/TAXWAY/ APRON)
34	340 (T)	140813 44°38' N 0384653 75°59'14 E	

LEGEND

1. Terminal Building
2. Police Station
3. Fuel Station
4. Fire Station
5. Generator House
6. Beacon House
7. Passenger Terminal



MARKING AIDS RWY 16/34



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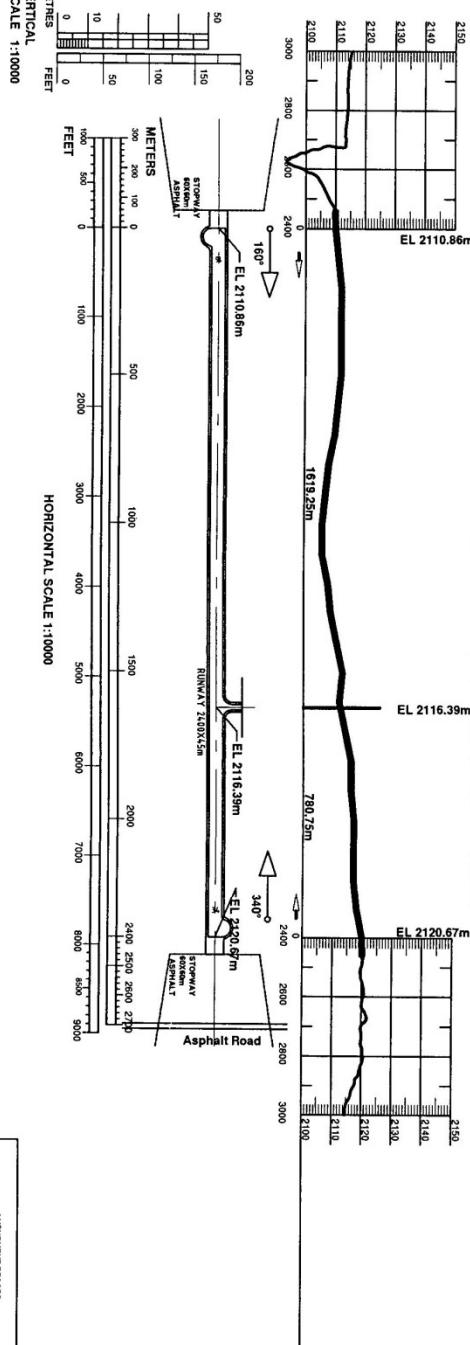
AERODROME OBSTACLE CHART - (CAO TYPE A) (OPERATING LIMITATIONS)
DIMENSIONS AND ELEVATIONS IN METERS

AD2 HAAx-7
13 DEC 12
AXUM Airport

RWY 16/34

DECLARED DISTANCES

RWY 16	RWY 34
TAKE OFF RUN AVAILABLE	
2400	2400
TAKE OFF DISTANCE AVAILABLE	
2460	2460
ACCELERATE STOP DISTANCE	
2450	2450
LANDING DISTANCE AVAILABLE	
2400	2400



ETHIOPIA CIVIL AVIATION AUTHORITY
ADDIS ABABA

AMENDMENT 02/12

AMENDMENT RECORD

No DATE ENTERED BY

AIP ETHIOPIA

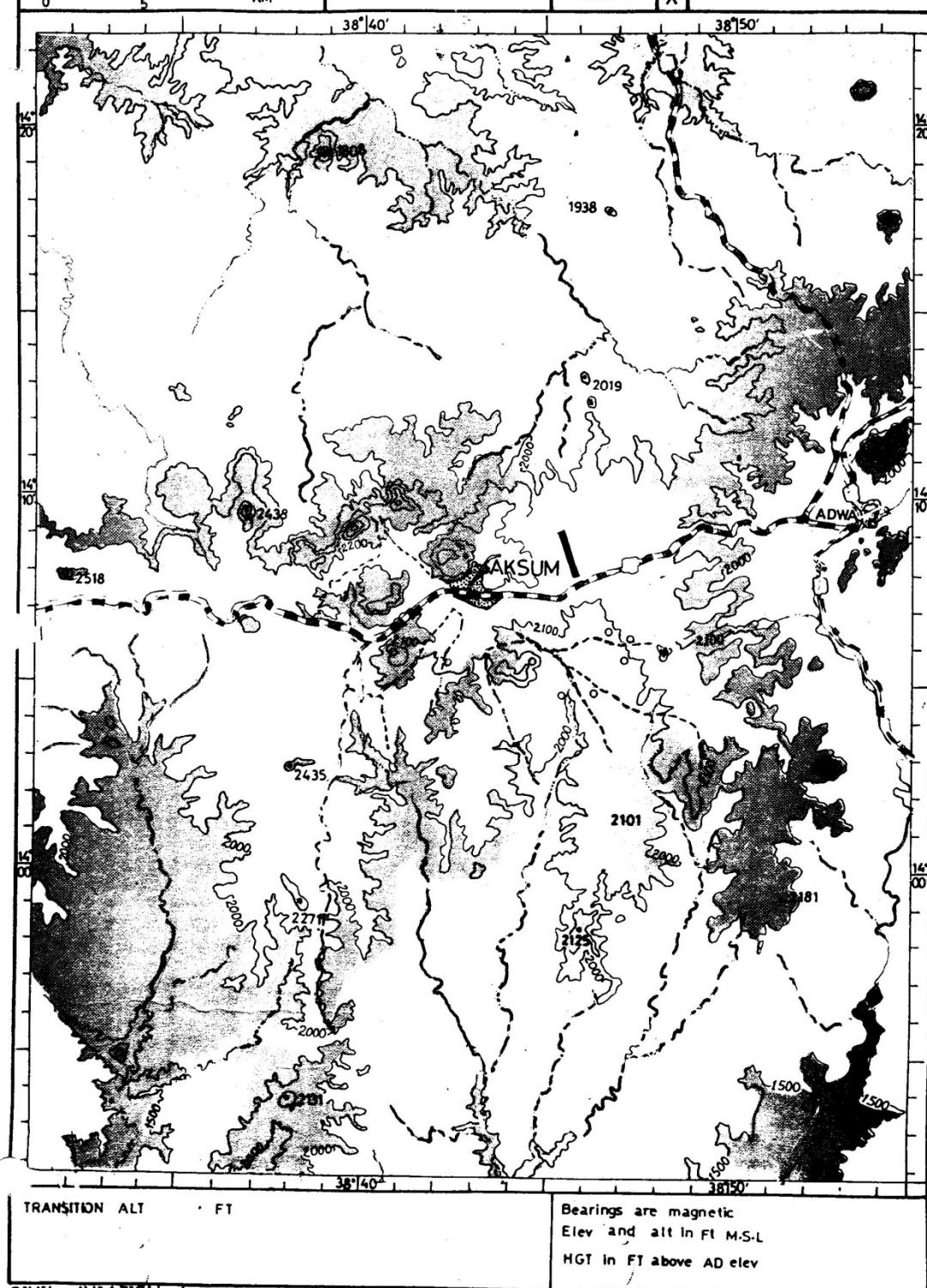
AD2-HAXX-8
24 JUN 06

VISUAL APPROACH CHART-ICAO

TWR 118.7

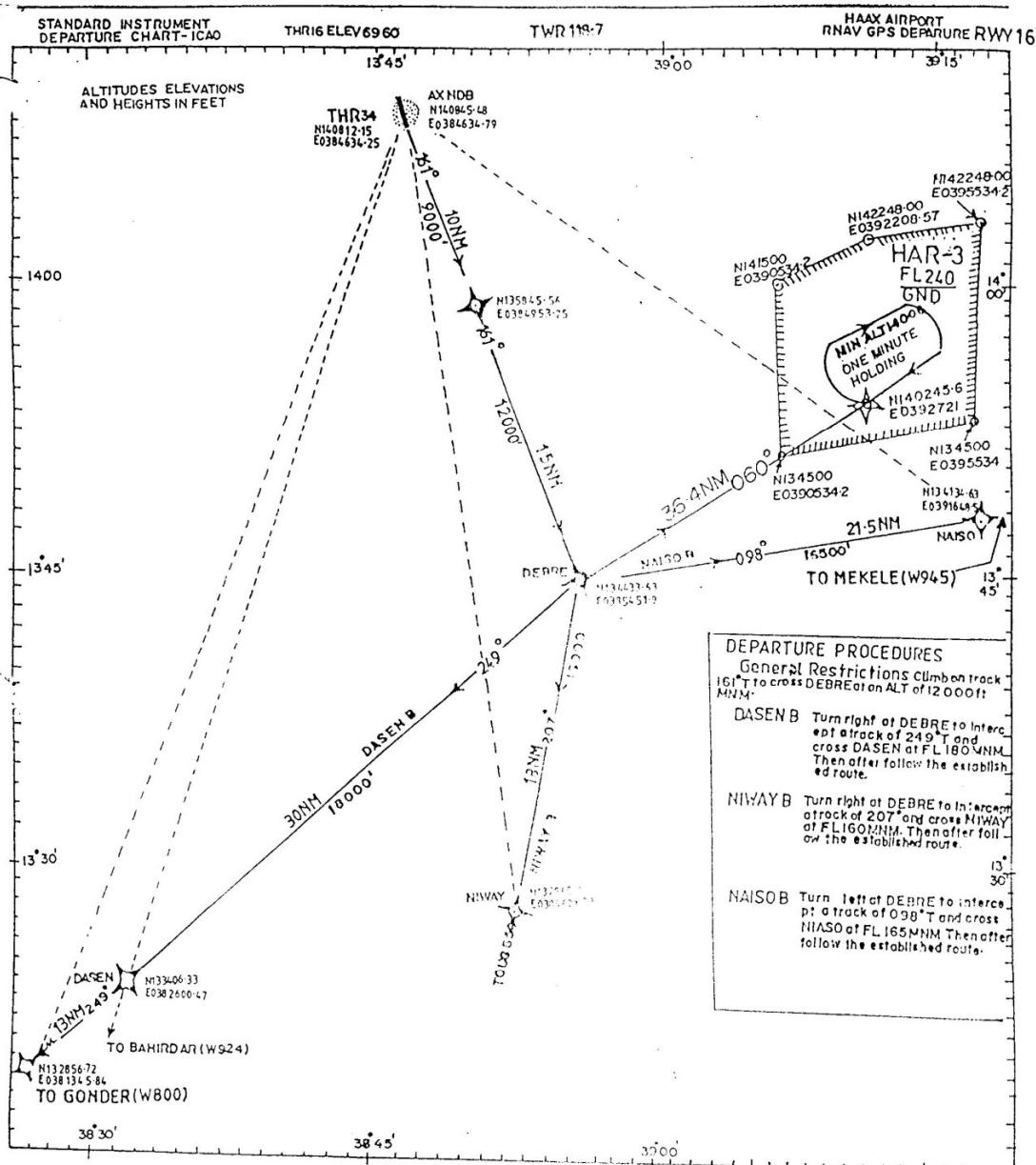
AD ELEV
6960FT

H
A
X
AXUM
AKSUM



CIVIL AVIATION AUTHORITY
ADDIS ABEBA

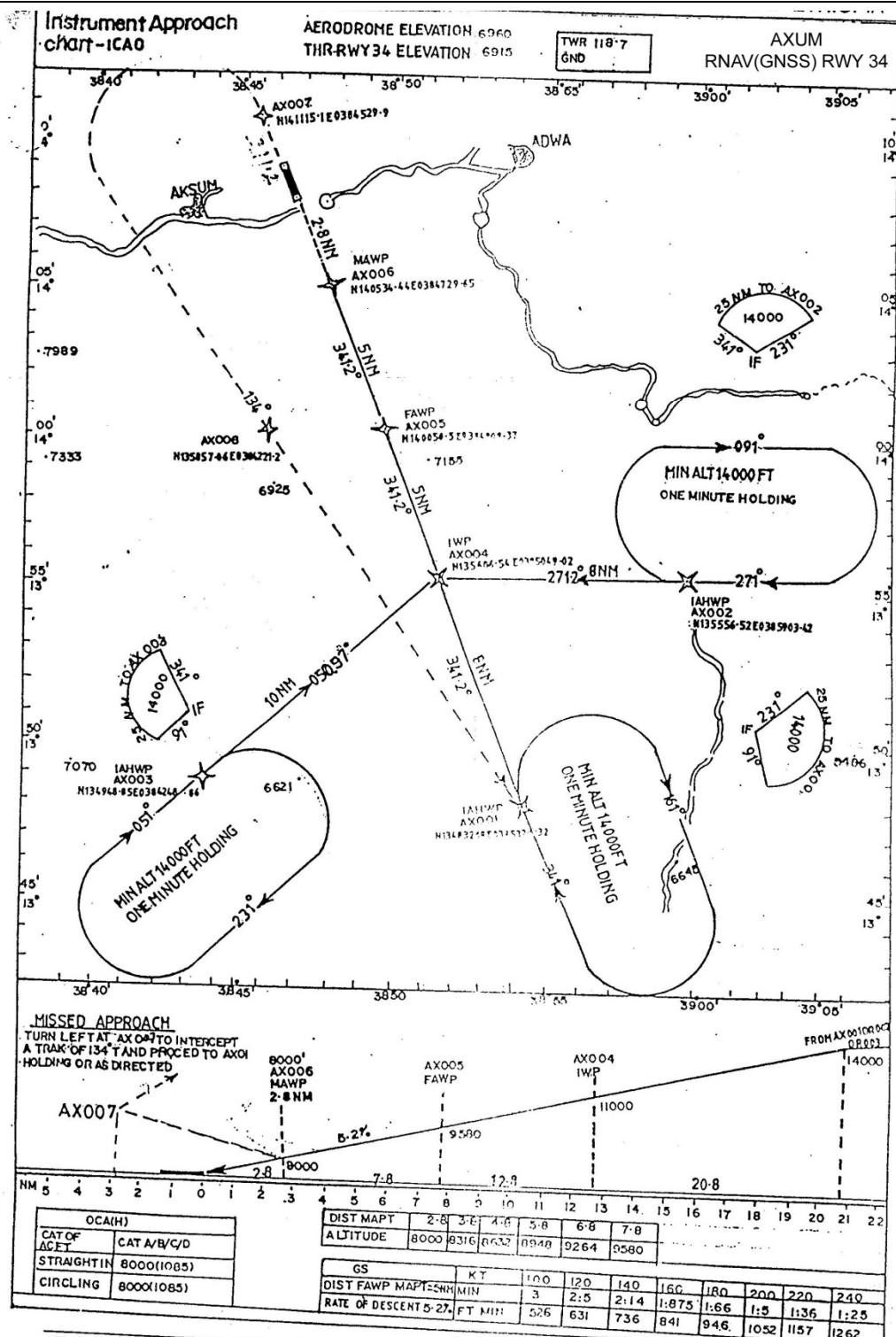
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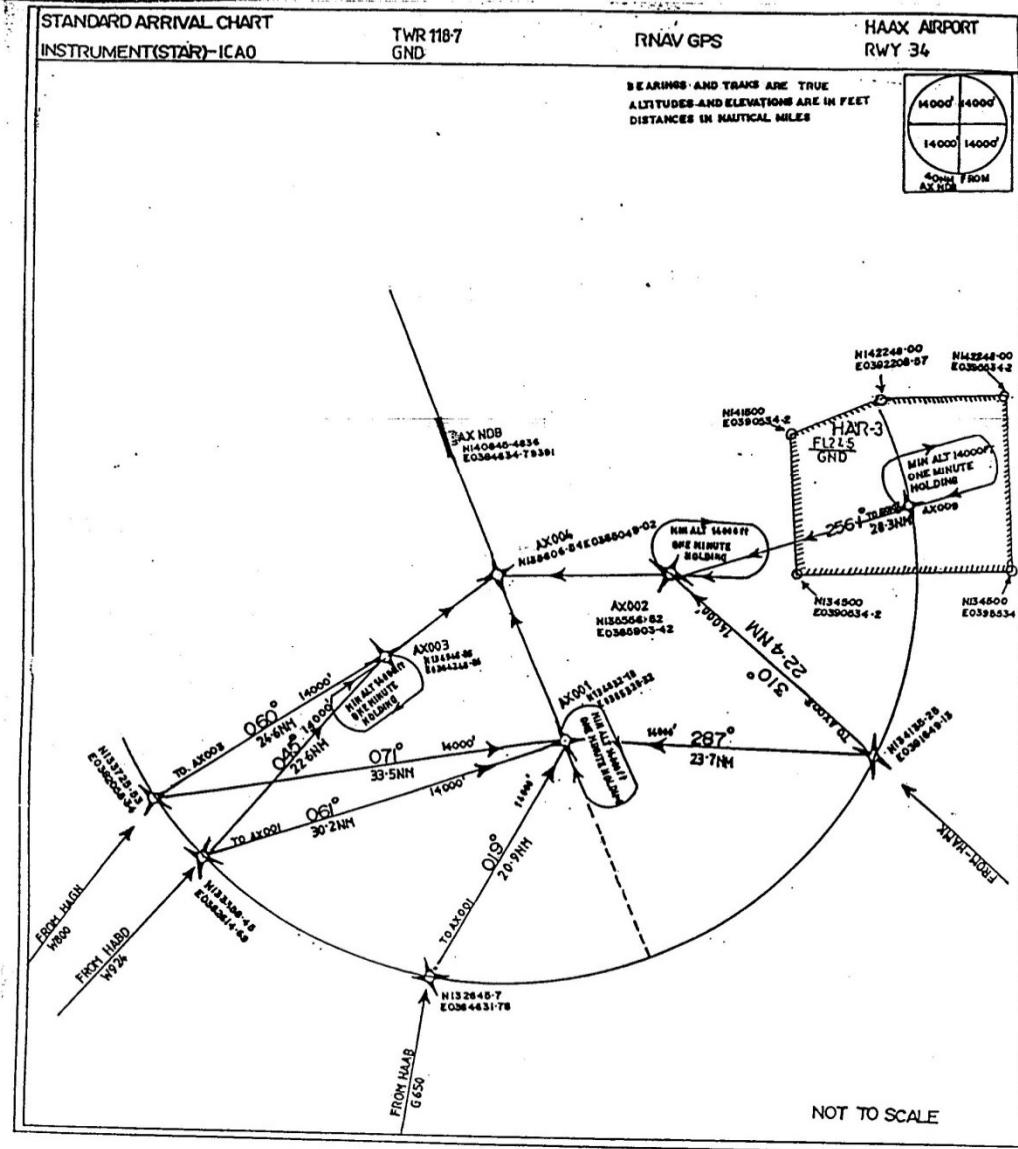


AD 2-HAAX-10

25 JUN 15

AIP ETHIOPIA





AD 2-AERODROMES
HABD-BAHIR DAR

AD2-1. AERODROME LOCATION INDICATOR AND NAME

1	<i>Location name</i>	Bahir Dar
2	<i>Airport name</i>	Bahir Dar Ginbot Haya International Airport
3	<i>ICAO Location indicator</i>	HABD

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP Coordinates and Site at AD</i>	1136 22.66671N 0371911.02557E RWY &TWY INT
2	<i>Direction and distance from city</i>	N. W. of town, 8KM
3	<i>Elevation/Reference temperature</i>	1821.5194m/ 29.5°C
4	<i>MAG VAR/Annual Change</i>	2.12°E (1995) / .6'
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	Postal Address BAHIR DAR AIRPORT Telephone:- 251-251113611 (PBX) Manager 251 582260033 tower 251 582260034 Fire fighting 251 582260055 Telefax: 251 582260156 E-mail: bahirdar.ap@ethionet.et P.O.Box 287 Bahir Dar, Ethiopia
6	<i>Types of traffic permitted</i>	IFR/VFR
7	<i>Remarks</i>	Nil

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	0300 – 2000 UTC daily
2	<i>Customs and immigration</i>	Available
3	<i>Health and Sanitation</i>	Nil
4	<i>AIS Briefing Office</i>	Available
5	<i>ATS reporting Office</i>	Nil
6	<i>Met Briefing Office</i>	0300 – 2000 UTC daily
7	<i>ATS</i>	0300 – 2000 UTC daily
8	<i>Fueling</i>	0300 – 2000 UTC daily
9	<i>Handling</i>	0300 – 2000 UTC daily
10	<i>Security</i>	0300 – 2000 UTC daily
11	<i>De-icing</i>	NIL
12	<i>Remarks</i>	Outside operational Hours on written request is needed. All costs associated with night operation will be covered by airline operators using the airport

AD2-4. HANDLING SERVICES AND FACILITIES

Ground handling equipment available for B737 and B757 A/C.

AD2-5. PASSENGER FACILITIES

1	<i>Hotels</i>	In town
2	<i>Restaurants</i>	In town & airport
3	<i>Transportation</i>	Taxis
4	<i>Medical facilities</i>	In town
5	<i>Bank and Post Office</i>	In town
6	<i>Tourist Office</i>	In town & airport
7	<i>Remarks</i>	NIL

AD2-6. RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT7	
2	<i>Rescue Equipment</i>	Two Foam Tender	
3	<i>Capability for removal of disabled aircraft</i>	Available - 1Mobile crane-45 tone	Weyra transport Enterprise Tel 0114341239 A/A
		2 Mobile crane-90 tone	Midroc Ethiopia Tel 0113341239 A/A
4	<i>Remarks</i>	32 trained personnel	

AD2-7. SEASONAL AVAILABILITY- CLEARING: - AD available at all seasons**AD2-8. APPRONS, TAXIWAYS AND CHECK LOCATION DATA**

1	<i>Apron Surface and Strength</i>	<i>Surface: Cement concrete</i> <i>Strength: PCN 50/R/B/W/U</i>
2	<i>Taxiway width, Surface and Strength</i>	<i>Width:23m</i> <i>Surface: Cement concrete</i> <i>Strength: PCN 50/R/B/W/U</i>
3	<i>ACL Location and Elevation</i>	<i>Nil</i>
4	<i>VOR/INS Check points</i>	<i>Nil</i>
5	<i>Remarks</i>	<i>Nil</i>

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	<i>Use of aircraft stands ID signs, TWY guide lines and Visual docking/parking guidance system of aircraft stands.</i>	Yellow apron markings guide aircrafts to stands
2	<i>RWY and TWY markings and LGT.</i>	<i>RWY markings : Designation, THR, Centreline, Edge RWY LGT: Edge elevated bi-directional and brilliance control of combination of white and amber lights. Threshold lights: Green-light across displaced TWY markings: Yellow centre line and holding position. TWY LGT: Edge elevated omni directional blue lights.</i>
3	<i>Stop bars</i>	<i>Nil</i>
4	<i>Remarks</i>	<i>Nil</i>

Additional companies are available in Addis Ababa, which have necessary equipments for the recovery of disable aircrafts: Addis Mechanical enterprise Mobile crane 35 tone. Tel: 0114160303.

Lalibella enterprise and construction Mobile crane 40 tone. Tel: 0114653000.

Awash construction enterprise. Mobile cato crane 45 tone. Tel: 0114164460

AD2-10.AERODROME OBSTACLES: Radio antenna 5KM SE of THR RWY 22.HGT 137m.FM GND.

AD2-11. METEOROLOGICAL INFORMATION PROVIDED

1	<i>Associated MET Office</i>	Bahir Dar Met Station
2	<i>Hours of Service MET office outside hours</i>	13 Hrs As agreed with the concerned
3	<i>Office responsible for TAF preparation Periods of Validity</i>	Bole International Airport Met. Office As per local flight schedule
4	<i>Type of landing forecast Interval of issuance</i>	METAR,SPECI Hourly Obs.
5	<i>Briefing/Consultation Provided</i>	
6	<i>Flight documentation Language(s) used</i>	
7	<i>Charts and other information available for briefing consultation</i>	
8	<i>Supplementary equipment available for providing information</i>	AWOS Automatic weather observing system
9	<i>ATS units provided with information</i>	TWR
10	<i>Additional information</i>	Recent weather

AD2-12. RUNWAY PHYSICAL CHARACTERISTICS

Designations RWY NR	True & Magnetic	Dimensions of	Strength and Surface of	TH R Coordinates	The elevation and Highest elevation of TDZ
			RWY and SWY		of Precision APP RWY
1	2	3	4	5	6
04	042°T 040°M	3000 x 45	Asphalt concrete the first 300M on both ends P.C.C	N113555.03520 E0371843.07639 N113704.115068	1833.4906M 1803.0587M
22	222°T 220°M		block pavement	E0371952.95375	
Slope of RWY/SWY	SWY Dimension (M)	CWY Dimension (M)	Strip Dimension (M)	Obstacle Free Zone	Remark
7	8	9	10	11	12
1%	60M x45	200M x 45	3520x120	Nil	
1%	60M x 45	200M x 45			

AD2.13 DECLARED DISTANCES

RWY Designator	TORA(M)	TODA(M)	ASDA(M)	LDA(M)	Remarks
1	2	3	4	5	6
04	3000	3260	3060	3000	
22	3000	3260	3060	3000	NIL

AD2-14. APPROACH AND RUNWAY LIGHTING ----- operational.**AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY** ----- stand by**AD2-16. HELICOPTER LANDING AREA** ----- On the apron.**AD2-17. ATS AIRSPACE**

1	<i>Designation and Lateral limits</i>	Bahir Dar CTR Circle with a radius of 20NM Centered on BDR VOR/DME
2	<i>Vertical limits</i>	Lower limit = GND Upper limit = FL 175
3	<i>Airspace classification</i>	E
4	<i>ATS unit, call sign Language (s)</i>	Bahir Dar Tower English
5	<i>Transition altitude</i>	FL 175
6	<i>Remarks</i>	NIL

AD2-18. ATS COMMUNICATION FACILITIES

Service	Call Sign	Frequency	Coordinates	Emission	Hours of Operation	Remarks
1	2	3	4	5	6	7
TWR	Bahir Dar Tower	118.3MHZ	N113611.91399 E0371922.42792	A3	0400-1500	50 Watts
SMC	Bahir Dar Ground	121.9MHZ 7595KHZ	N113644.86963 E0372235.79514	A3	0400-1500	50 Watts

AD2-19. RADIO NAVIGATION AND LANDING AIDS.

Type	Ident	Frequency	Coordinates	Emission	Hours of Operation	Remarks
1	2	3	4	5	6	7
L	TN	420KHZ	N113529.37551 E0371817.11774	A2	H24	POWER 100 Watts Coverage 150NM
VOR/D ME	BDR	114.4	N113623.1 E0371901.98		0300-1700	
LLZ	IBN	109.5	N113544.68 E0371832.6			

AD2-20. LOCAL TRAFFIC REGULATIONS

----- Nil

AD2-21. NOISE ABATEMENT PROCEDURES

----- Nil

AD2-22. FLIGHT PROCEDURES**1. Instrument approach procedures for Bahir Dar****1.1 Holding procedures**

Holding Point	Inbound Track Mag	MNM Holding ALT/LEVEL(FT)	TURN	Outbound final	Remarks
BD008	224.77°	14000ft	Right	1 MIN*	CAT A ,B,C
BD009	294.72°	14000ft	Right	1 MIN*	CAT A,B,C
BD010	154.71°	14000ft	Right		CAT A,B,C

Note: Out bound leg time 1.5 minute above 14000ft.

1.2 BD 008, BD009 and BD010 final approach way point.

1.2.1 Leave BD008, BD009 and BD010 way points at or above 14000ft and fly to BD011 to maintain 10600ft on track 224.27°, 294.77° and 154.71°respectively.

1.2.2 Final approach

Maintain altitude 8570ft at BD012 which is final approach way point and continue descending on true track 224.73° to OCA /H 6830ft.

AD2-23. Additional information

Nil

AD2-24. Charts related to an aerodrome

AERODROME CHART-ICAO.....	AD-2 HABD-6
AERODROME OBSTACLE CHART - ICAO.....	AD-2 HABD-7
INSTRUMENT APPROACH CHART-ICAO-VOR/DME RWY 04(CAT A/B ACFT)	AD-2 HABD-8
INSTRUMENT APPROACH CHART-ICAO-VOR/DME RWY 04 (CAT C/D ACFT)	AD-2 HABD-9
VISUAL APPROACH CHART - ICAO.....	AD-2 HABD-10
INSTRUMENT APPROACH CHART-ICAO-RNAV/GPS RWY 04(CAT A/B C ACFT)	AD-2 HABD-11
INSTRUMENT APPROACH CHART-ICAO-RNAV/GPS RWY 22(CAT A/B C ACFT)	AD-2 HABD-12
STANDARD INSTRUMENT DEPARTURE (SID)-ICAO.....	AD-2 HABD-13
STANDARD INSTRUMENT DEPARTURE (SID)-ICAO.....	AD-2 HABD-14
STANDARD ARRIVAL CHART INSTRUMENT (STAR)-ICAO..	AD-2HABD-15
STANDARD ARRIVAL CHART INSTRUMENT (STAR)-ICAO RWY 22..	AD-2HABD-16
INSTRUMENT APPROACH CHART-ICAO-LLZ/ DME RWY 22	AD-2HABD-17
STANDARD INSTRUMENT DEPARTURE (SID)-ICAO VOR/DME RWY 04/22.....	AD-2 HABD-18
INSTRUMENT APPROACH CHART-ICAO-VOR/DME RWY 22 (CAT C/D ACFT)	AD-2 HABD-19

AIP ETHIOPIA

AIRCRAFT		BEARING STRENGTH	PCN	RUNWAYS - TAXIWAYS AND APRON
ARMY	DIRECTION THR			
04	045° 09	-		
22	225° 09	-		

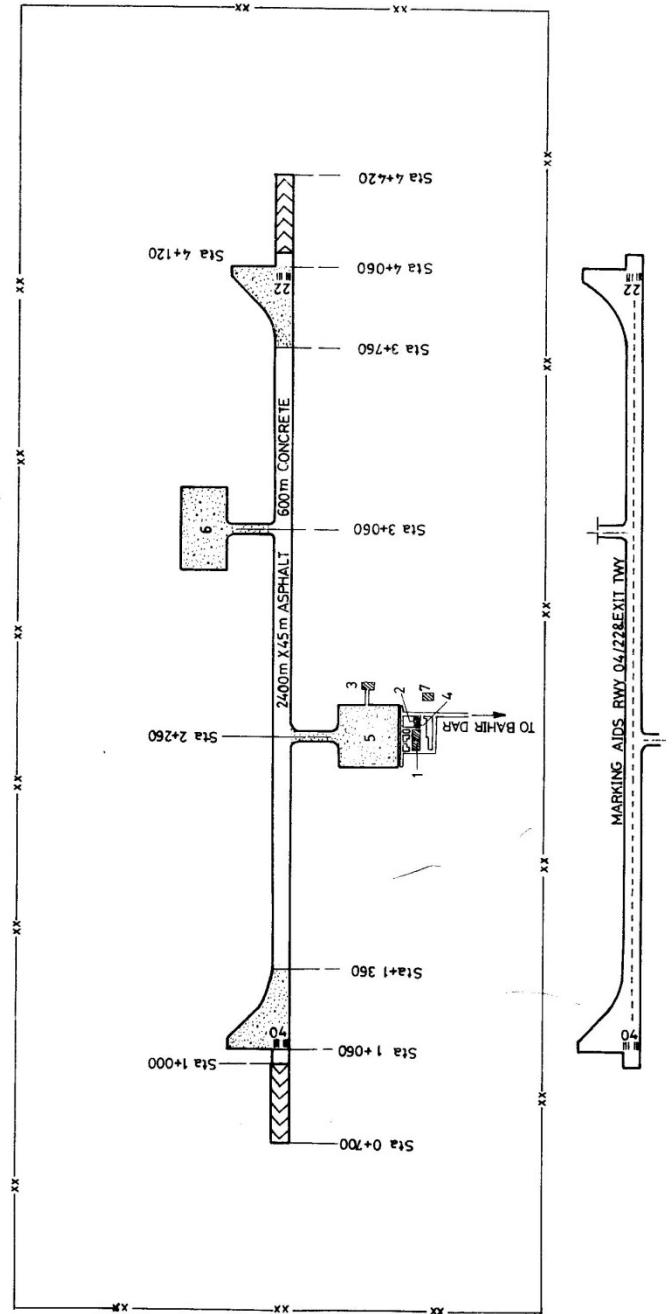
AERODROME CHART-ICAO BAHIR DAR ETHIOPIA

AD 2.HABD-6
12 SEP 96

LEGEND

- ELODEN**

 - 1-TERMINAL BUILDING & CONTROL TOWER
 - 2-GENERATOR ROOM
 - 3-FIRE BRIGADE
 - 4-TRANSFORMER HOUSE
 - 5-APRON
 - 6-REMOTE PARKING
 - 7-NDB



METRES

FFFT

METRES
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
6500
7000
7500
8000
8500
9000
9500
10000

CIVIL AVIATION AUTHORITY
ADDIS ABEBA

AIR ETHIOPIA

REGISTRATION NO. ER-AK-104

AD2-HARD-7
12 SEP 96

AERODROME OBSTACLE CHART - ICAO

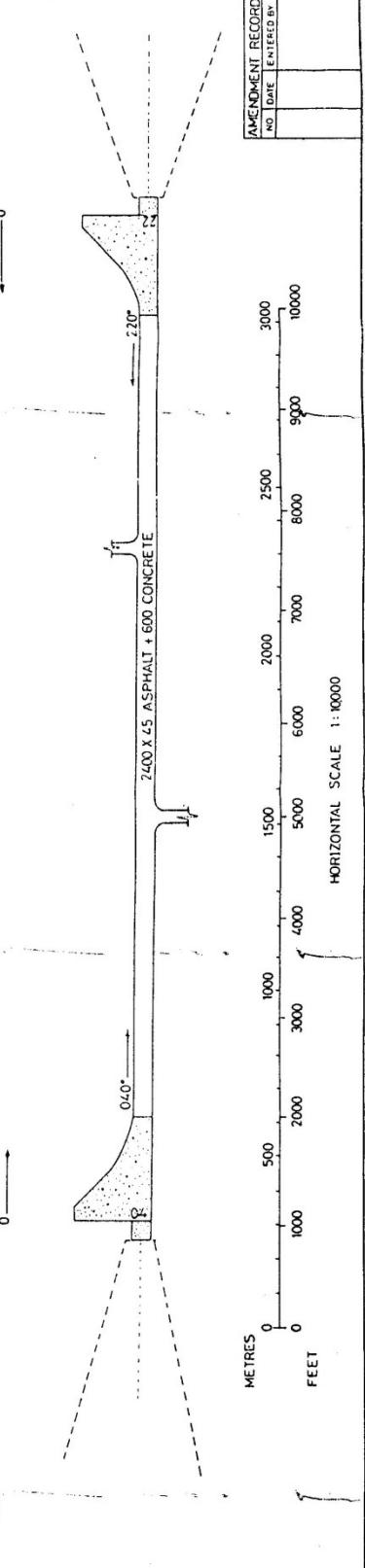
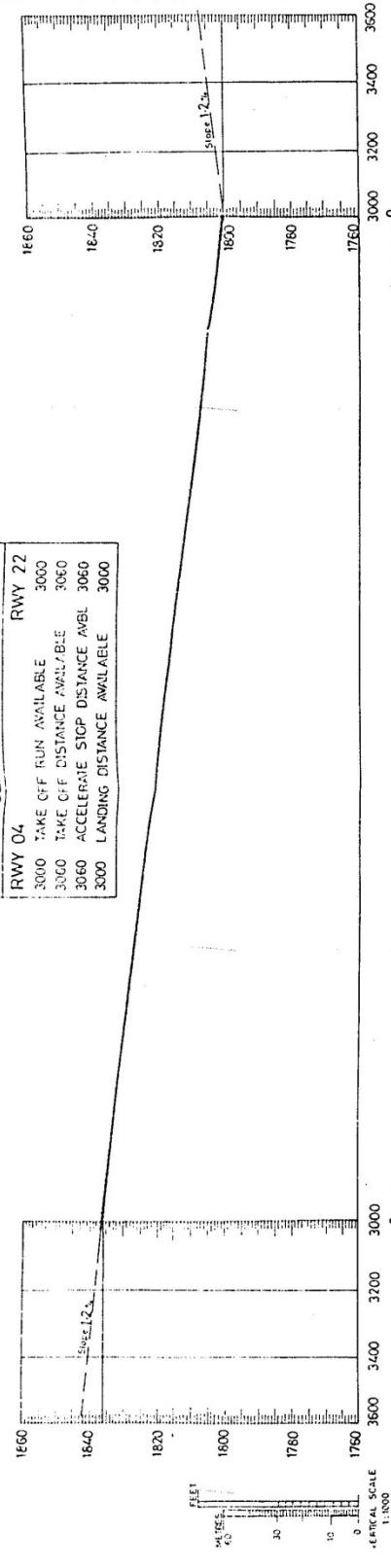
THE 2 INCH FADING LUMINOS

BAHIR DAR / Ethi Dar Airport

RWY 04-22

DECLARED DISTANCE

RWY 04	RWY 22
3000 TAKE OFF RUN AVAILABLE	3000
3000 TAKE OFF DISTANCE AVAILABLE	3060
3060 ACCELERATE STOP DISTANCE AVAILABLE	3060
3000 LANDING DISTANCE AVAILABLE	3000



CIVIL AVIATION AUTHORITY
ADDIS ABABA

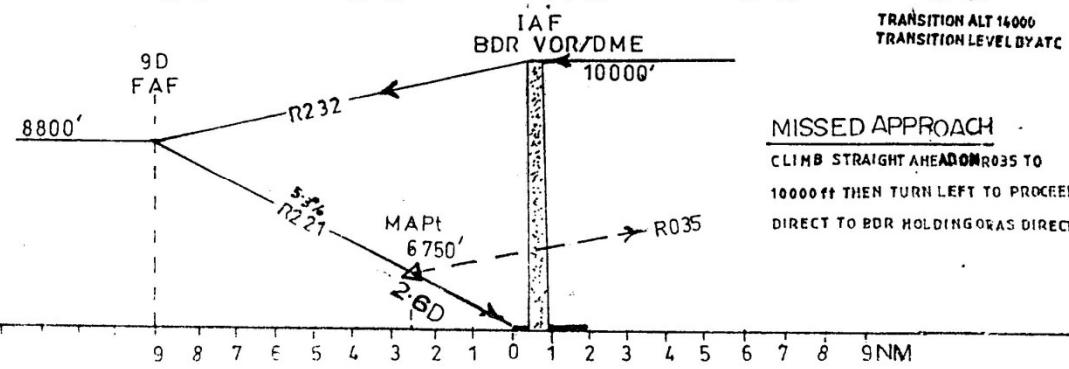
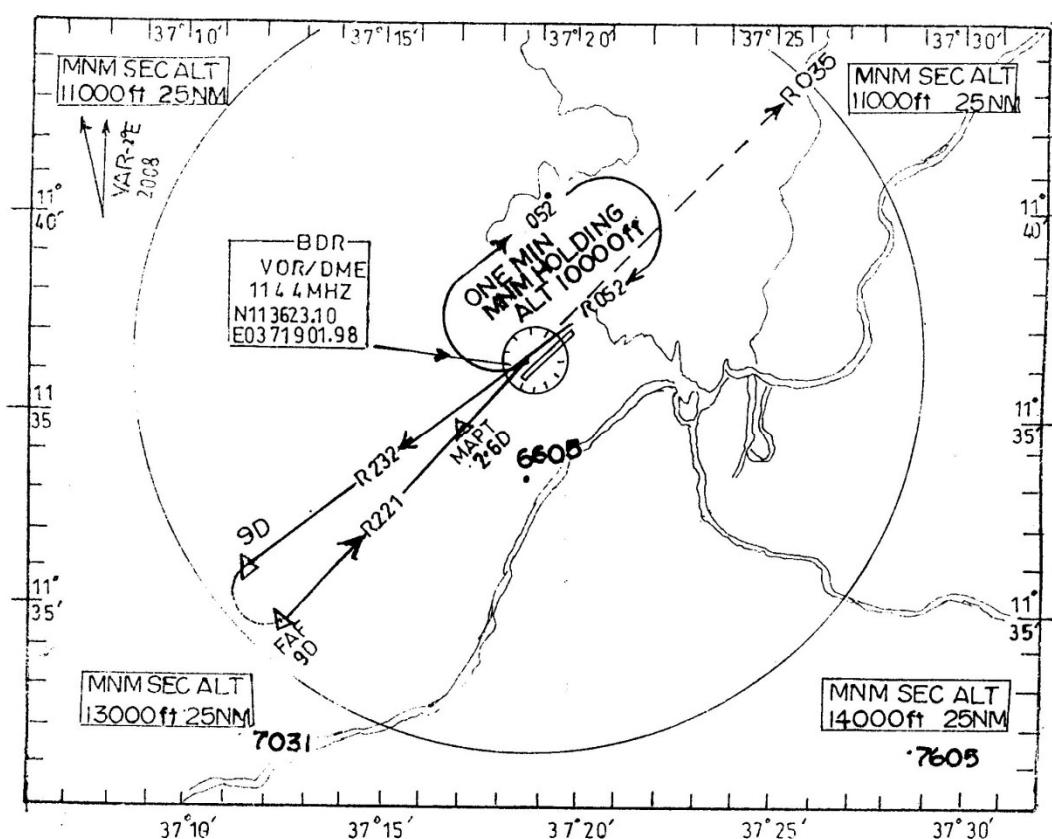
2nd Edition

AMENDMENT RECORD
No date entered by

**Instrument Approach AERODROME ELEVATION 6015FT
chart ICAO THR RWY04 ELEVATION 6015FT**

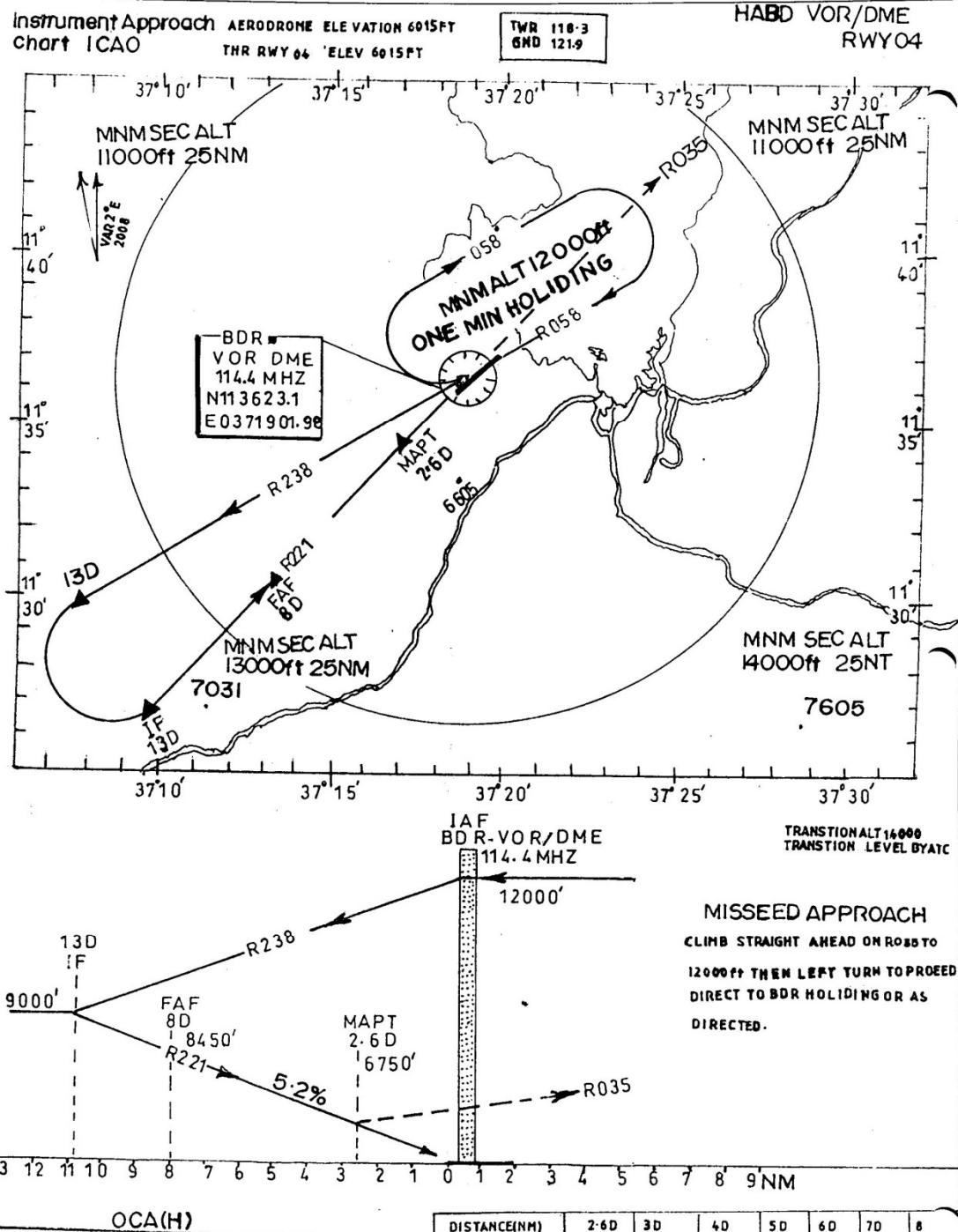
THR 110.3
GND 121.9

**HABD VOR DME
RWY04**



OCA/H		
CAT OF ACFT	A	B
STRAIGHT IN	6750'(735')	
CIRCLING	7030'(1115')	

DISTANCE(NM)	2.6D	3D	4D	5D	6D	7D	8D	9D
ALTITUDE(ft)	6750	6880	7200	7520	7840	8160	8480	8800
DISTANCE = FAF-MAPT = 6.4 NM								
SPEED(IKT)	70	80	90	100	110	120	130	
TIME:MIN : SEC	5 : 29	4 : 48	4 : 16	3 : 50	3 : 29	3 : 12	2 : 57	
RATE OF DESCENT ft/min	375	430	485	535	590	645	700	



CAT OF ACFT	C	D
Straight in	6750'(735)	
circling	7120'(1105)	

DISTANCE(NM)	2-6D	3D	4D	5D	6D	7D	8
ALTITUDE (ft)	6750	6875	7190	7505	7820	8135	8450
DISTANCE FAF-MAPT= 5-6 NM							
SPEED(MT)	120	130	140	150	160	170	180
TIME/MIN:SEC	2:42	2:29	2:18	2:09	2:01	1:54	1:48
FT MIN RATE OF DESCENT	635	605	740	790	845	895	950

Amendment 1/08

Civil Aviation Authority
Addis Ababa

AIP ETHIOPIA

AD2-HABD-10

12 SEP 96

VISUAL APPROACH CHART-ICAO

TWR: BAHIR DAR Tower 118-3

AD ELEV

5999

www.elsevier.com

BAHIR DAR

CIVIL AVIATION AUTHORITY
ADDIS ABEBA

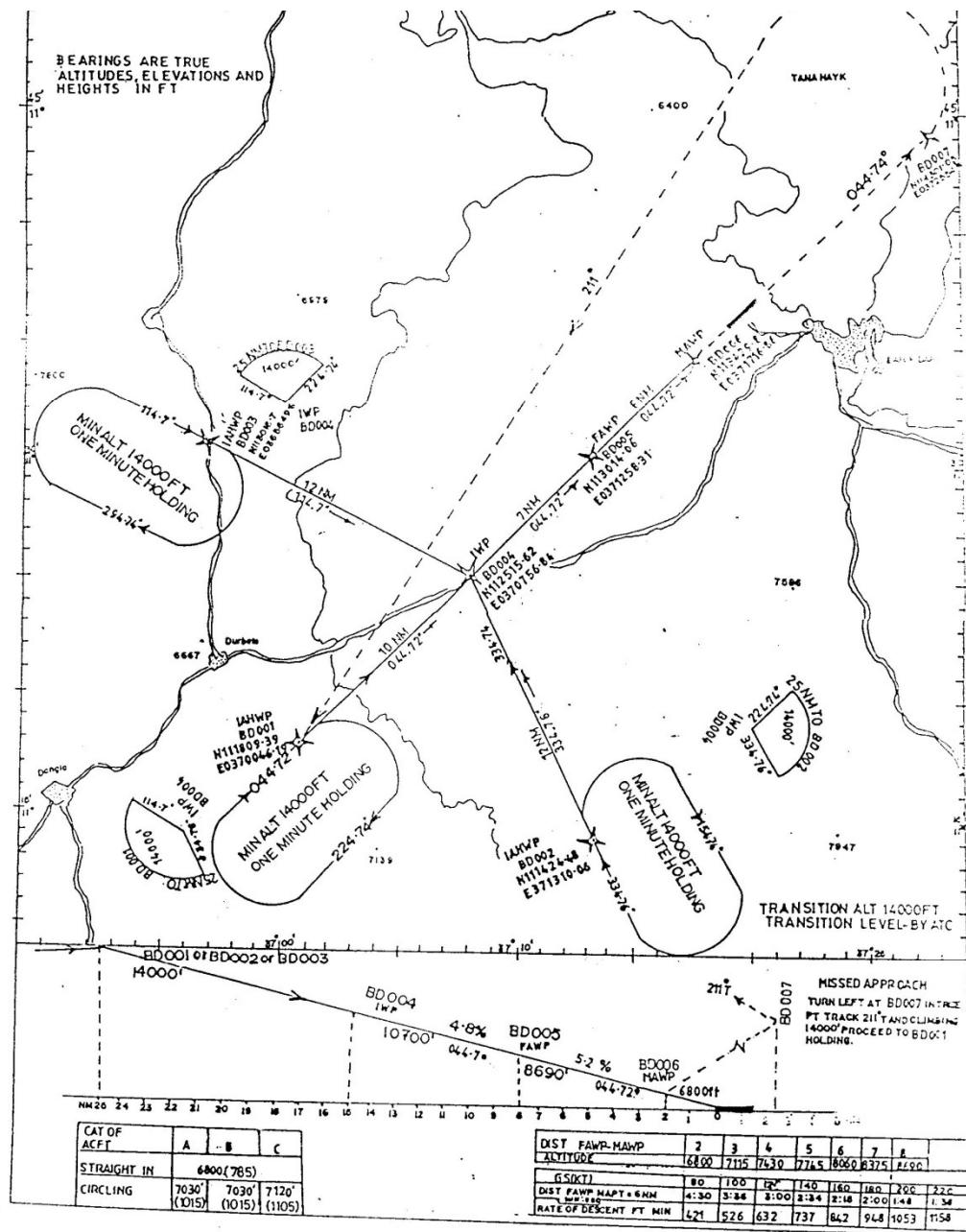
TRANSITION ALT 14000 FT

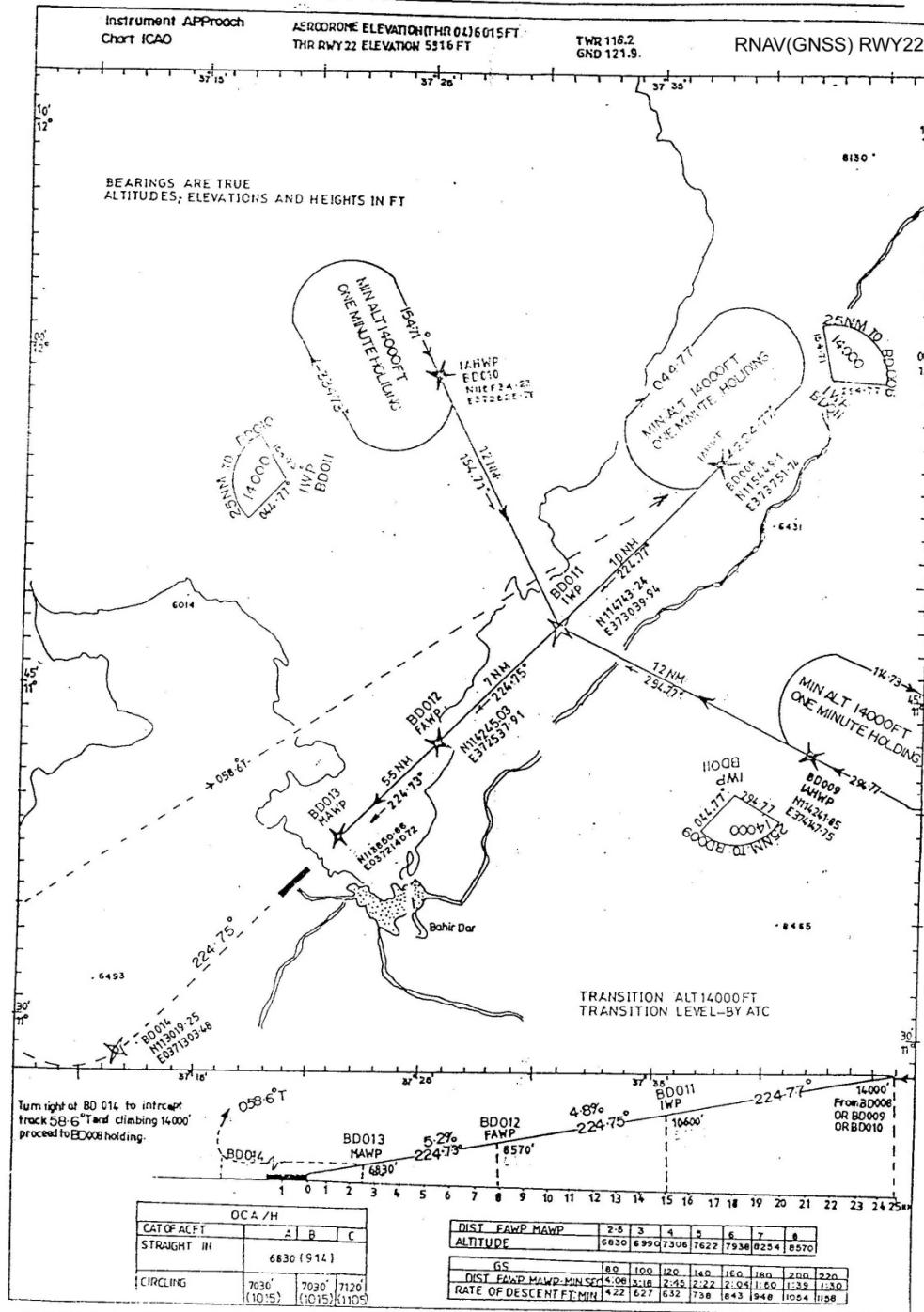
Bearings are magnetic

Elev and alt in Ft MSI

HGT in Ft above AD elev.

2nd Edition

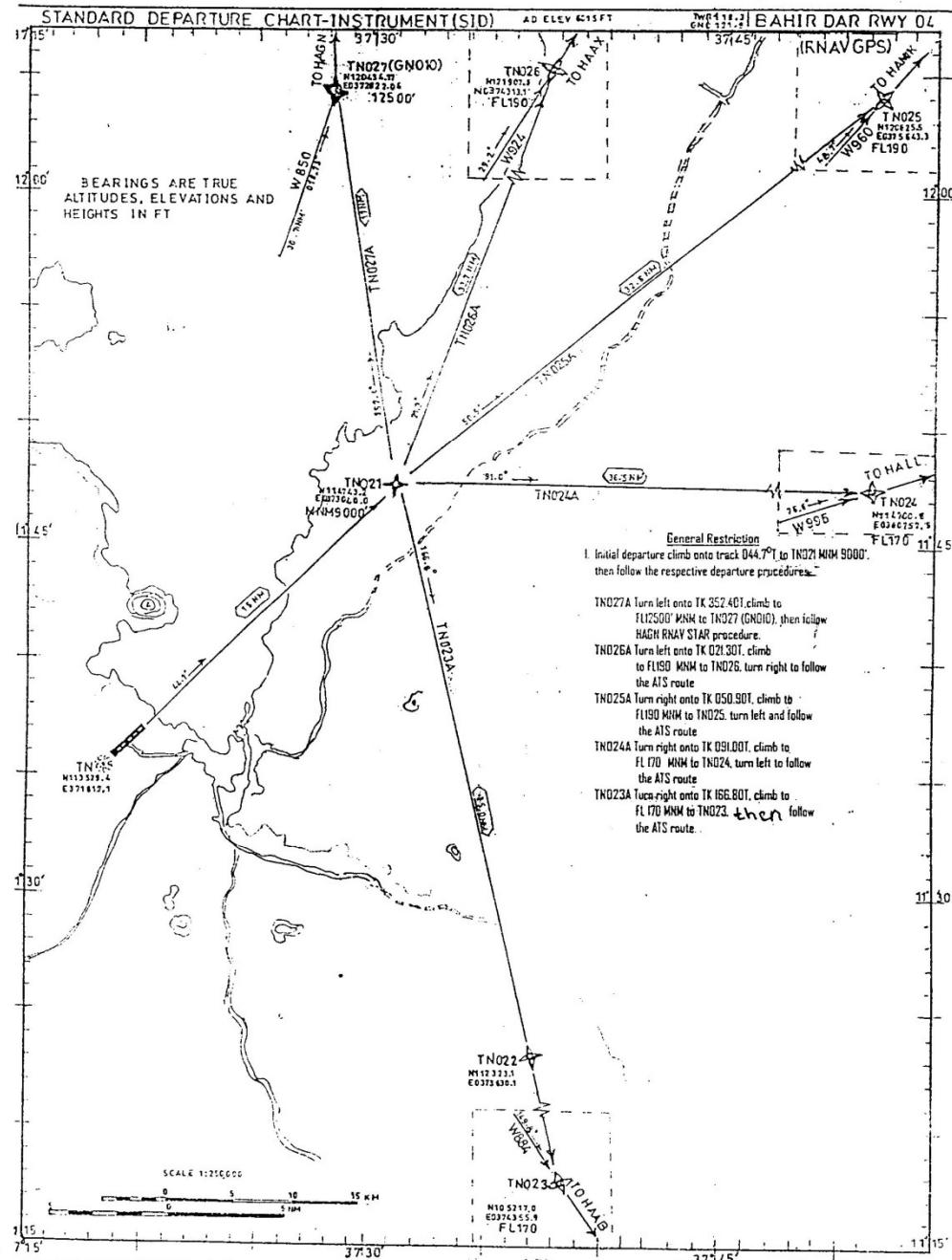




AIP ETHIOPIA

AD 2-HABD-13

20 DEC 07

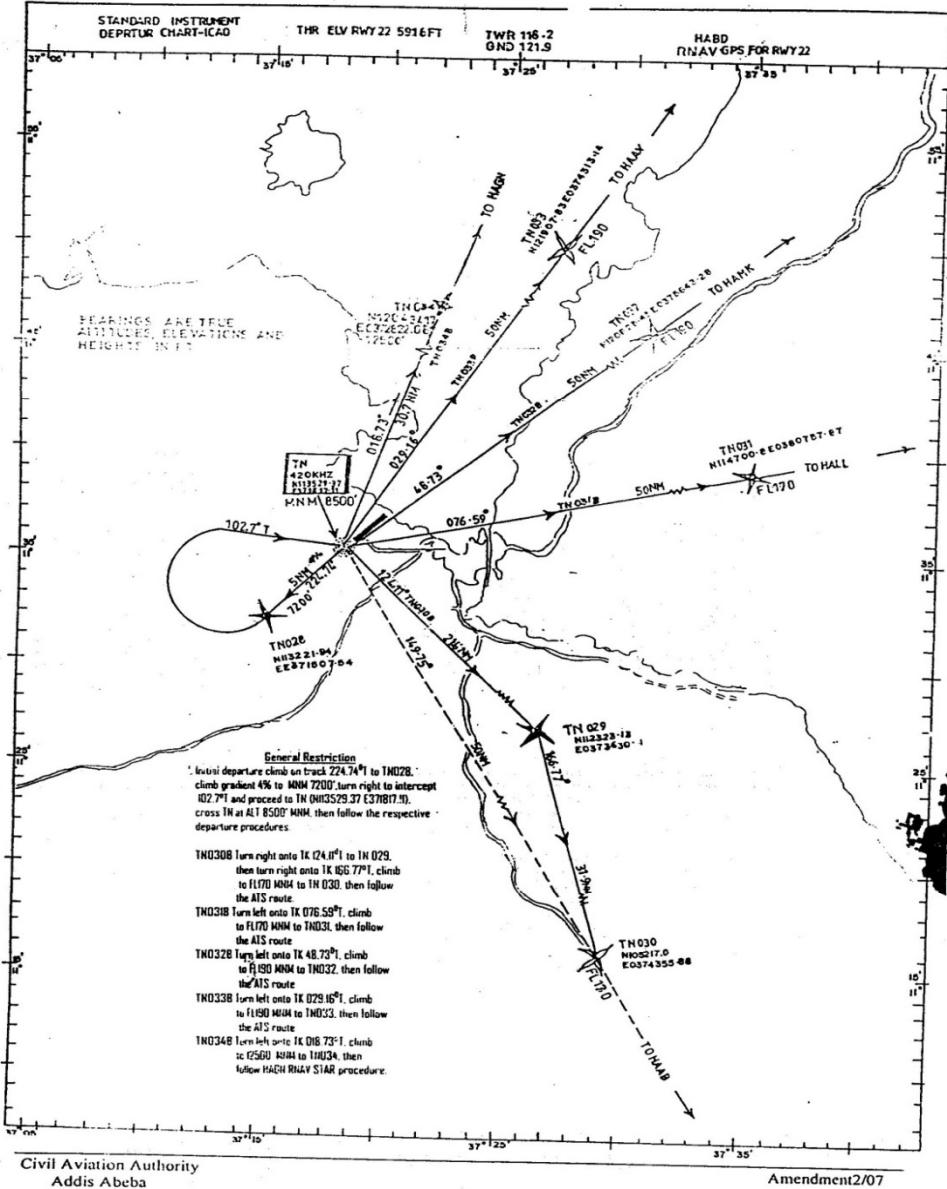


**Civil Aviation Authority
Addis Abeba**

Amendment 2/07

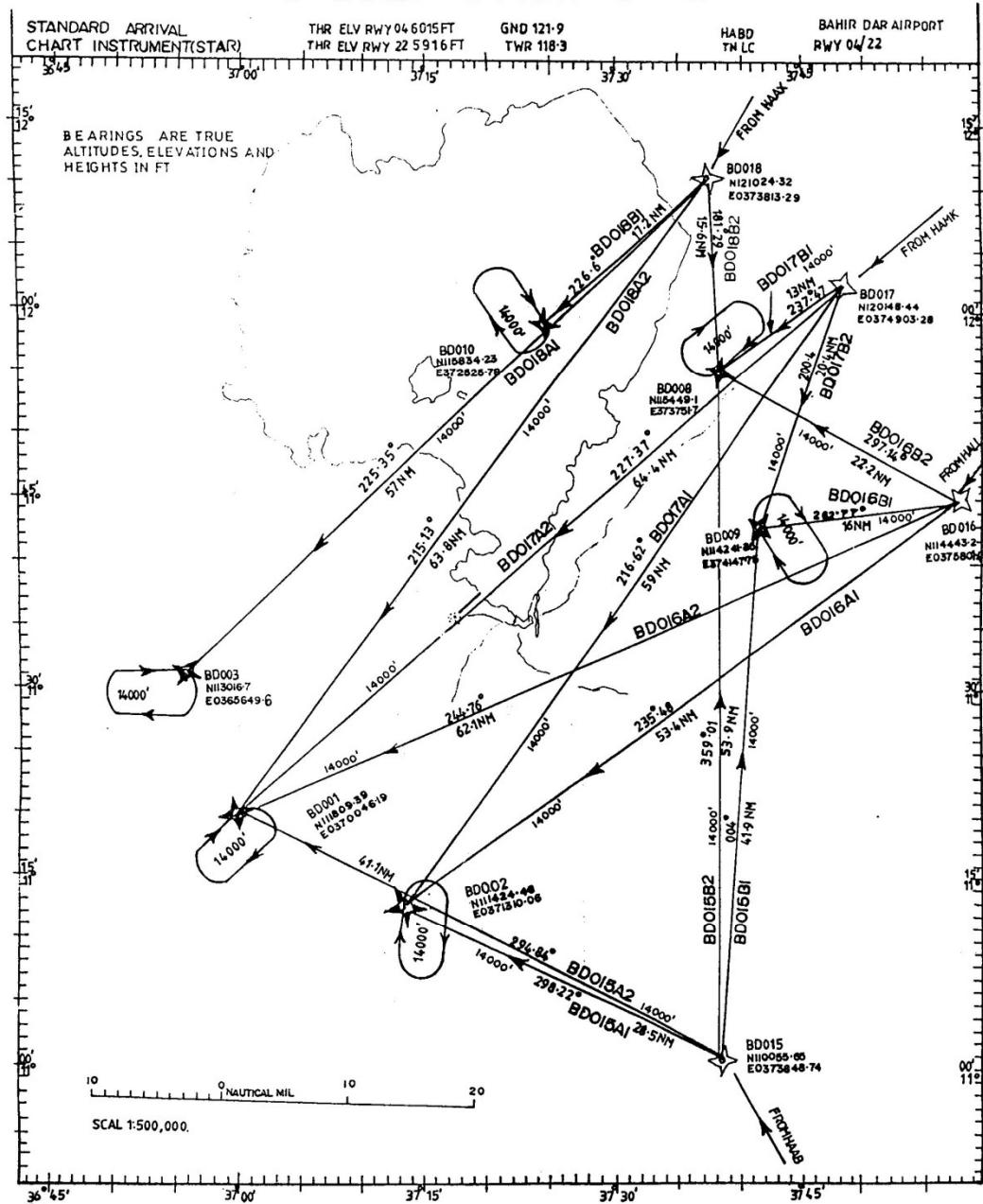
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20 DEC 07

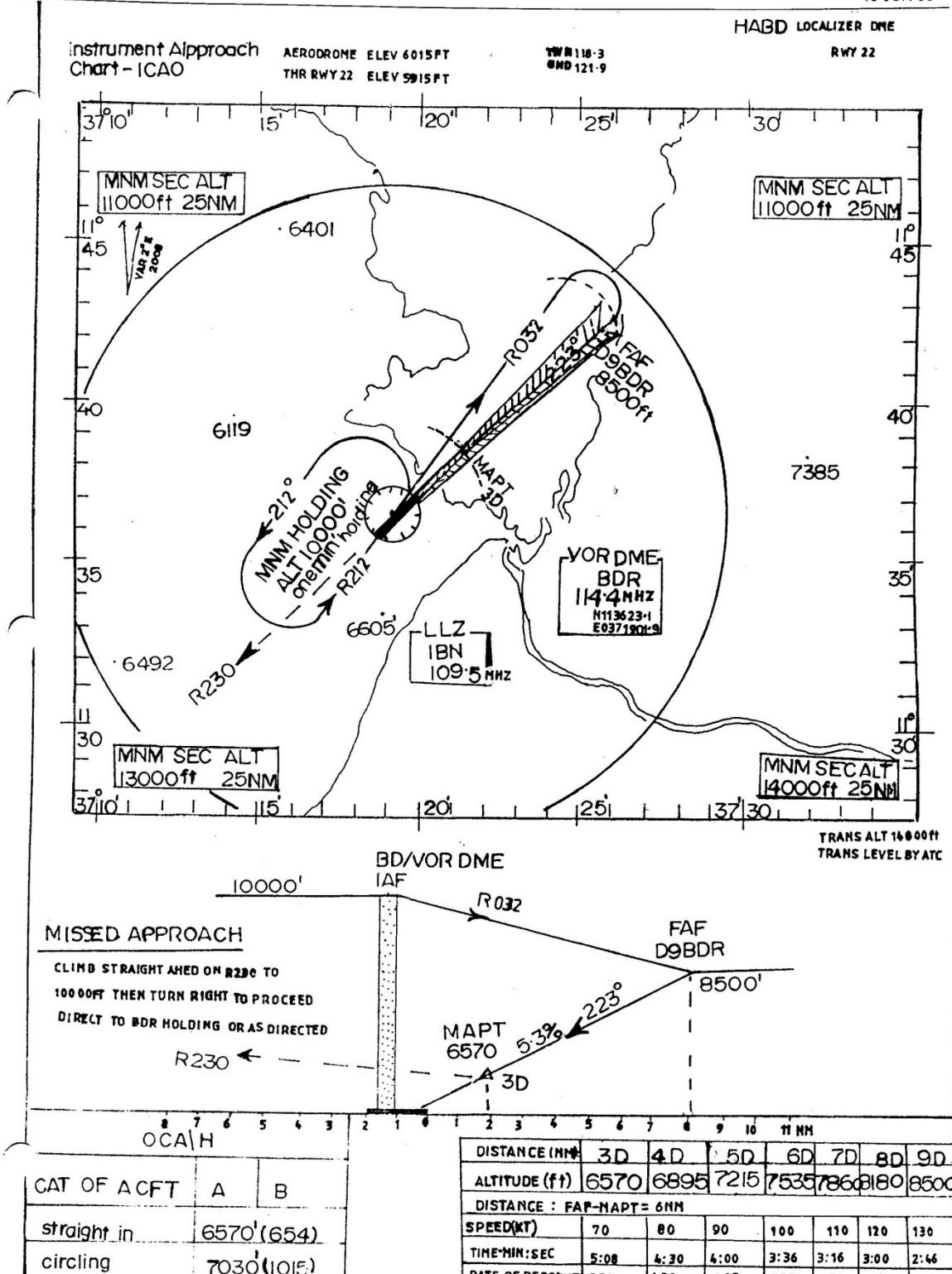
AIP ETHIOPIA



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20 DEC 07

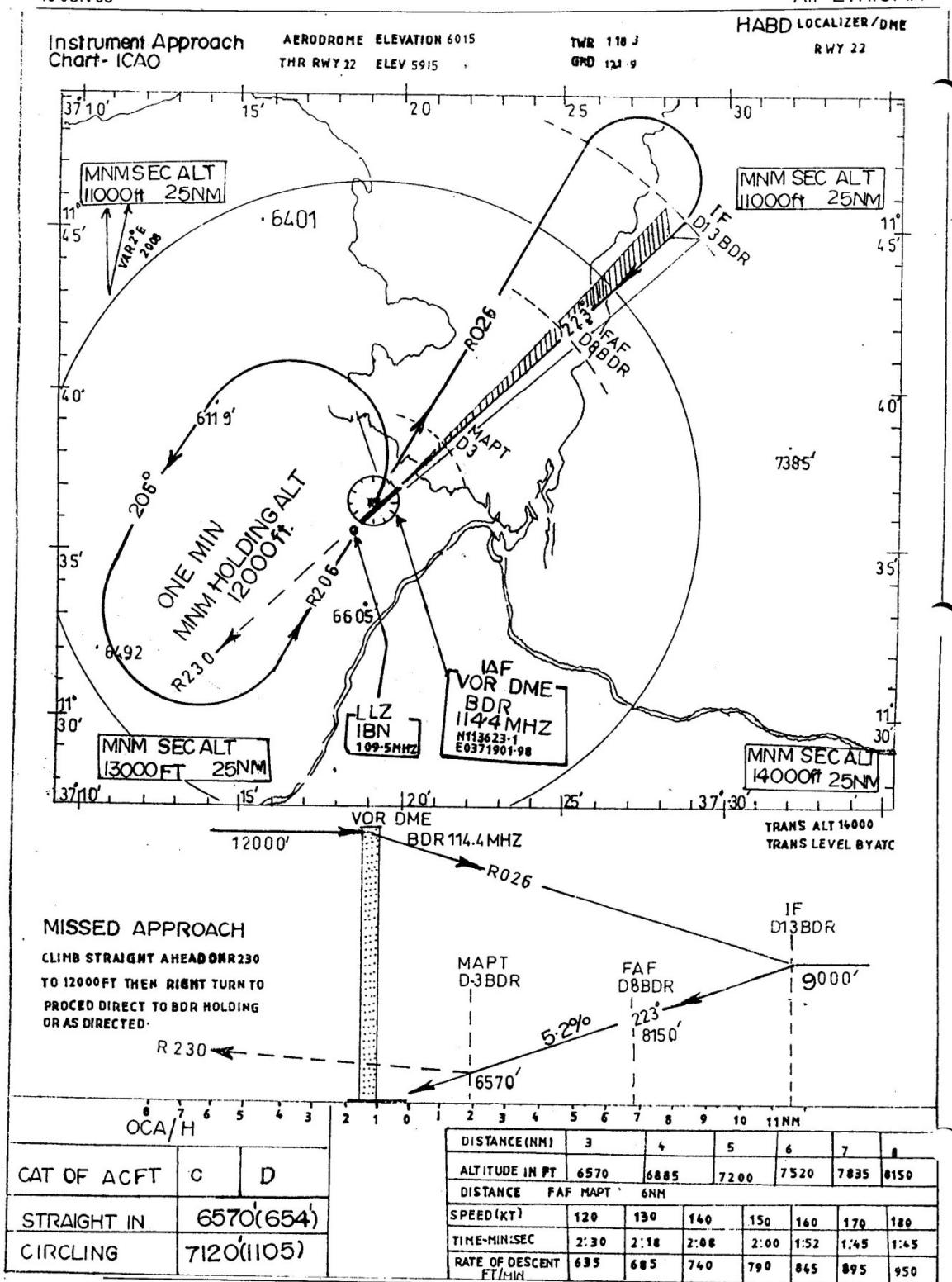


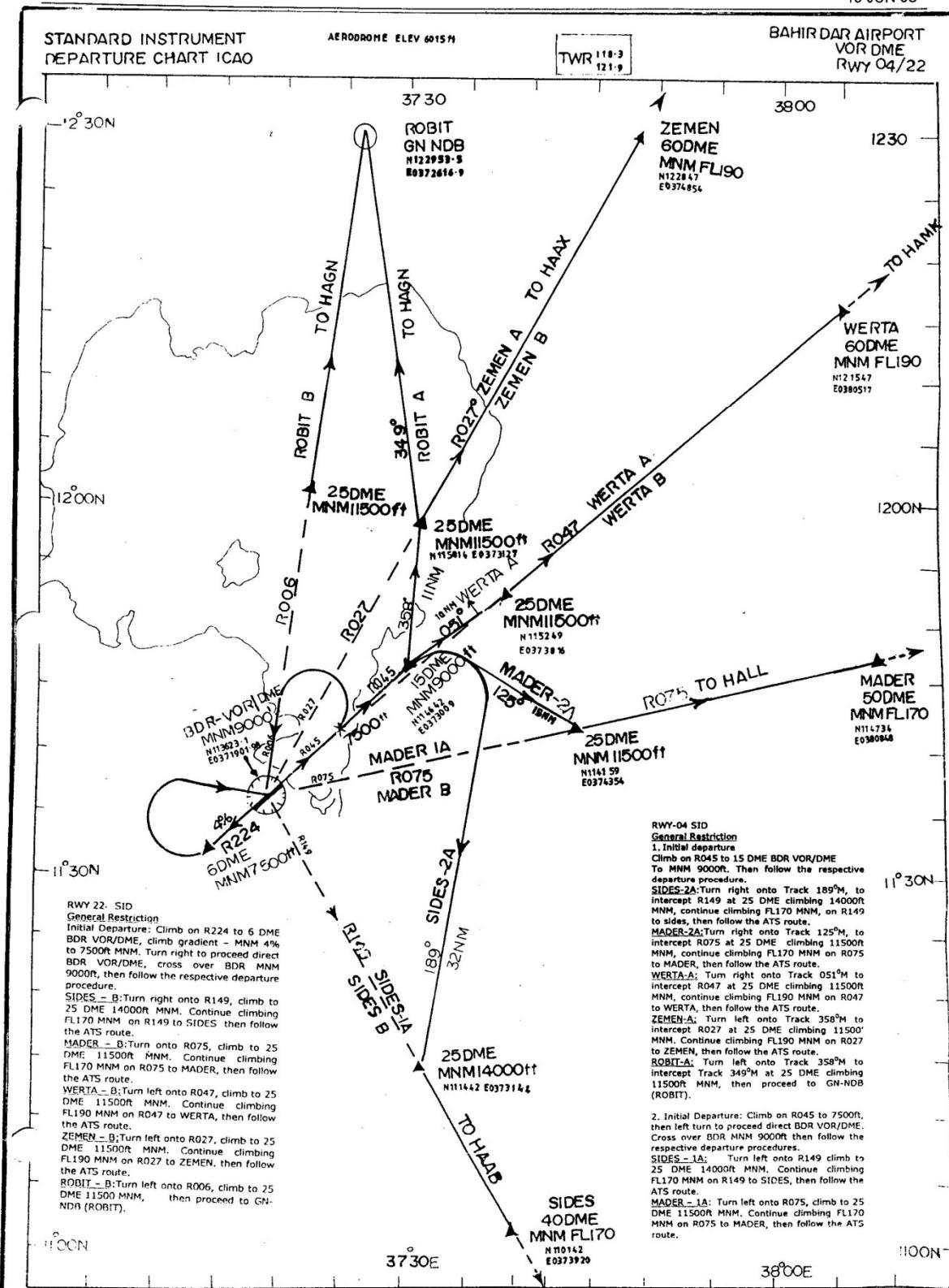


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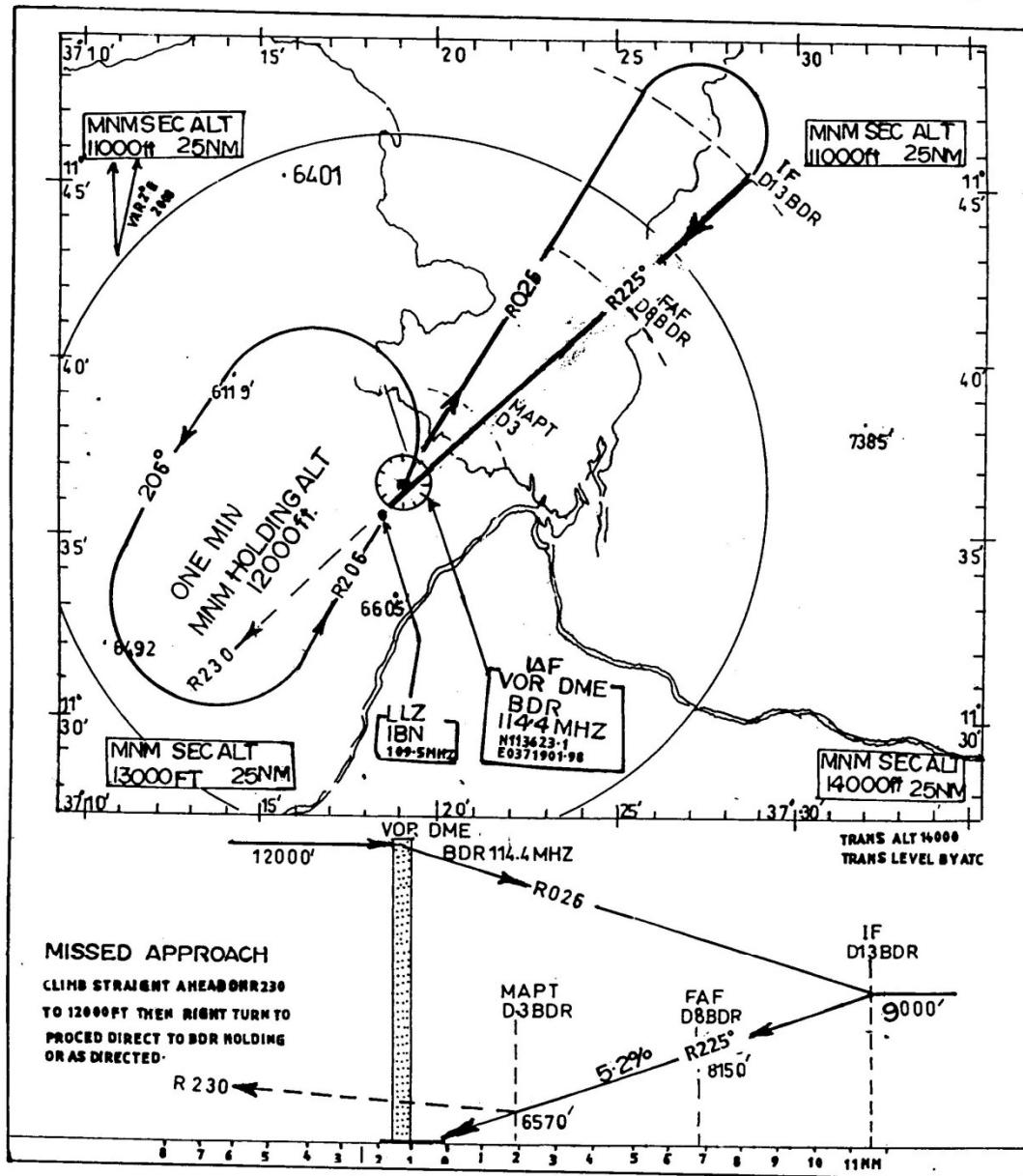
19 JUN 08

AIP ETHIOPIA





AIP ETHIOPIA

AD2 HABD 19
15 DEC 11Instrument Approach
Chart-ICAOAerodrome Elevation 6015
THR RWY 22 Elevation 5915TWR 118.3
GND 121.9HABD VOR/DME
RWY 22

OCA/OCH

CAT OF ACFT	C	D
STRAIGHT IN	6570'(654')	
CIRCLING	7120'(1105')	

DISTANCE(NM)	3	4	5	6	7	8
ALTITUDE IN FEET	6570	6885	7200	7520	7835	8150
DISTANCE FAF MAPT	5NM					
SPEED (KT)	120	130	140	150	160	170
TIME-MIN-SEC	2:30	2:18	2:08	2:00	1:52	1:45
RATE OF DESCENT FT/MIN	635	685	740	790	845	895

AD 2 AERODROMES
HADC- DESSE COMBOLCHA AIRPORT

AD2-1. AERODROME LOCATION INDICATOR AND NAME

1	<i>Location name</i>	Combolcha
2	<i>Airport name</i>	Combolcha Airport
3	<i>ICAO Location indicator</i>	HADC

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	ARP coordinates and site at AD	N110605 E0394338
2	Direction and distance from city	SE of Town/6.8M
3	Elevation/reference temperature	1869.38M/
4	MAG VAR/Annual change	
5	AD Administration address, Telephone telex,AFS	
6	Types of traffic permitted	VFR
7	Remarks	

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	
2	<i>Customs and immigration</i>	Nil
3	<i>Health and sanitation</i>	Nil
4	<i>AIS Briefing office</i>	Nil
5	<i>ATS Reporting office</i>	Nil
6	<i>Met Briefing office</i>	Nil
7	<i>ATS</i>	Nil
8	<i>Fueling</i>	
9	<i>Handling</i>	Nil
10	<i>Security</i>	
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	

AD2-4. HANDLING SERVICES AND FACILITIES Nil**AD2-5. PASSENGER FACILITIES**

5.1 Hotels, restaurants and medical facilities: In town

5.2 Transportation available:

AD2-6. RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT6
2	<i>Rescue Equipment</i>	
3	<i>Capability for removal of disabled aircraft</i>	
4	<i>Remarks</i>	

AD2-7. SEASONAL AVAILABILITY- CLEARING: - AD available at all seasons.

AD2-8. APPRONS, TAXIWAYS AND CHECK LOCATION DATA

1	<i>Apron Surface and Strength</i>	<i>Surface: Asphalt concrete Strength: -</i>
2	<i>Taxiway width, Surface and Strength</i>	<i>Width: 15m</i>
3	<i>ACL Location and Elevation</i>	<i>Nil</i>
4	<i>VOR/INS Check points</i>	<i>Nil</i>
5	<i>Remarks</i>	<i>Nil</i>

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	<i>Use of aircraft stands ID signs, TWY guide lines and Visual docking/parking guidance system of aircraft stands.</i>	
2	<i>RWY and TWY markings and LGT.</i>	
3	<i>Stop bars</i>	<i>Nil</i>
4	<i>Remarks</i>	<i>Nil</i>

AD2-10. AERODROME OBSTACLES High grounds Northeast and West of the airport.

AD2-11. METEOROLOGICAL INFORMATION PROVIDED Nil

AD2-12. RUNWAY PHYSICAL CHARACTERISTICS

Designations	True & magnetic bearing	Dimensions of RWY (M)	Strength & surface of RWY and SWY	THR coordinates	THR elevation & highest elevation of TDZ of precision APP RWY
1	2	3	4	5	6
17		2000X30	Asphalt concrete	110709N 0394329E	1869.38M
35		2000X30	Asphalt concrete	110605N 0394338E	1843.54M
Slope of RWY/SWY	SWY dimension	CWY dimension	Strip dimension	Obstacle free zone	Remark
7	8	9	10	11	12
		Nil	2210X150	Nil	
		Nil			

AD2-13. DECLARED DISTANCES

RWY Designator	TORA(M)	TODA(M)	ASDA(M)	LDA(M)	Remarks
1	2	3	4	5	6
17	2000	2060	2060	2000	
35	2000	2060	2060	2000	

AD 2.14 APPROACH AND RUNWAY LIGHTING

RWY	Approach Lights	THR Lights	VASIS PAPI	TDZ Length	RWY CL Lights Spacing, Colour, Intensity	RWY Edge Lights Spacing, Colour, Intensity	RWY end LGT	SWY LGT	RMRKS Length
1	2	3	4	5	6	7	8	9	10
17	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
35	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL

AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY Nil**AD2-16. HELICOPTER LANDING AREA:.....****AD2-17. ATS AIRSPACE**

1	Designation and lateral limits	NIL
2	Vertical limits	NIL
3	Airspace classification	NIL
4	ATS unit, call sign Language (s)	NIL
5	Transition altitude	NIL
6	Remarks	NIL

AD2-18. ATS COMMUNICATION FACILITIES

Service	Call Sign	Frequency	Coordinates	Emission	Hours of operation	Remarks
1	2	3	4	5	6	7
TWR	NIL	NIL	NIL	NIL	NIL	NIL
SMC	NIL	NIL	NIL	NIL	NIL	NIL

AD2-19. RADIO NAVIGATION AND LANDINGS AIDS

Type	Ident	Frequency	Coordinates	Emission	Hours of Operation	Remarks
1	2	3	4	5	6	7
NIL	NIL	NIL	NIL	NIL	NIL	NIL
NIL	NIL	NIL	NIL	NIL	NIL	NIL

AD2-20. LOCAL TRAFFIC REGULATIONS:- Nil**AD2-21. NOISE ABATEMENT PROCEDURES:-** Nil**AD2-22. FLIGHT PROCEDURES:-** Nil**AD2-23. Additional information:-** Nil**AD2-24. CHARTS RELATED TO AN AERODROME.....** Nil

COMBOLCHA (IIADC)RNP
RWY 35
HAMUS 1A, HAMUS 1B
KETEM 1, DELBA 1
KOLBO 1

STANDARD ARRIVAL CHART -
INSTRUMENT (STAR)

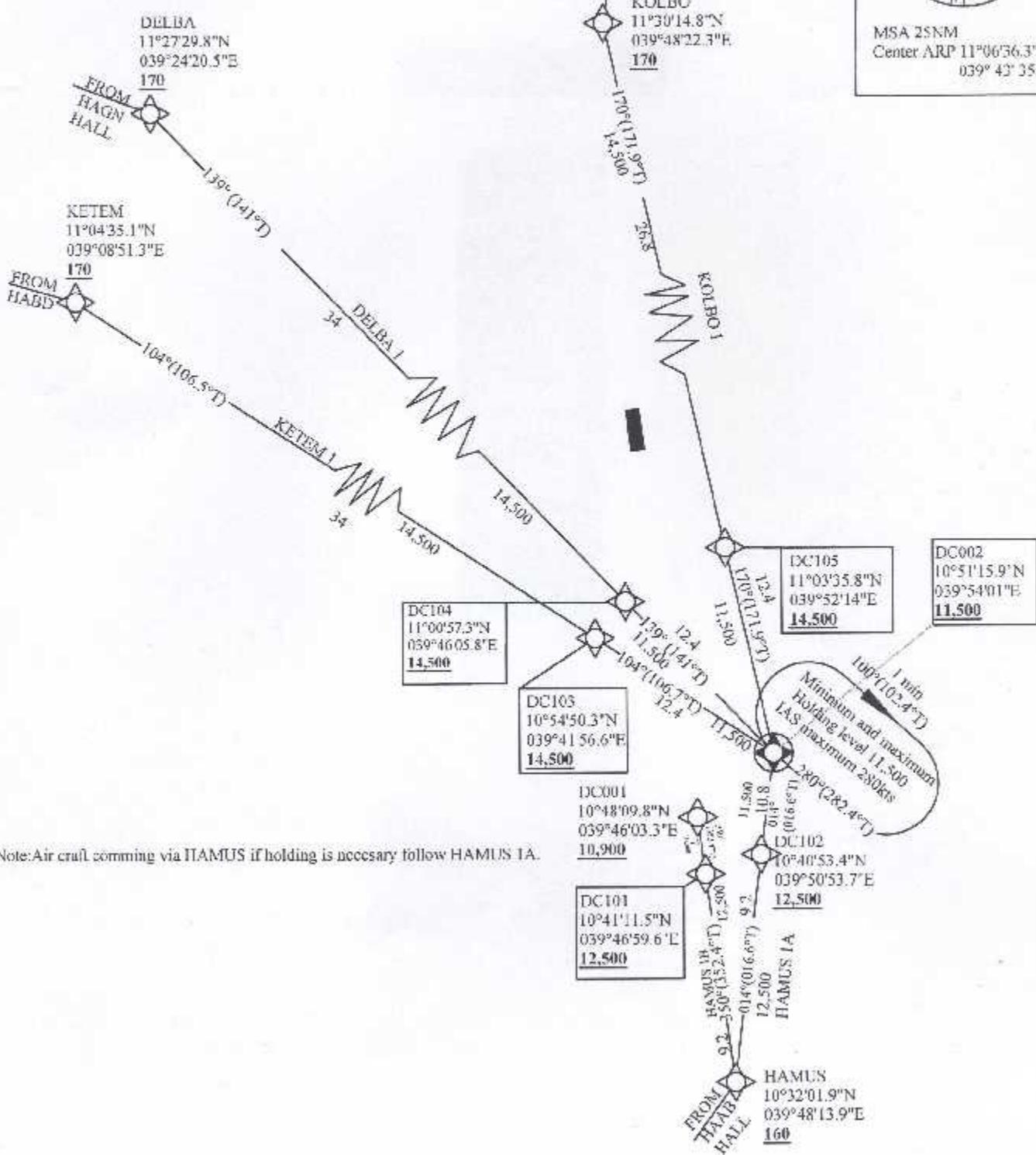
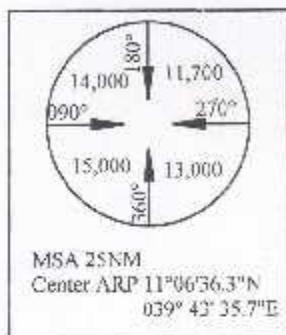
TRANSITION ALTITUDE 14,000

TWR NILL
GND NILL

RNP I approval and GNSS required

ELEV. ALT IN FEET
DIST IN NM
BRG ARE MAGNETIC in bracket TRUE
VAR 2.4°E/2016

NOT TO SCALE



**AD 2-AERODROMES
HADR-DIRE DAWA**

AD2-1. AERODROME LOCATION INDICATOR AND NAME

1	<i>LOCATION NAME</i>	<i>DIRE DAWA</i>
2	<i>AIRPORT NAME</i>	<i>DIRE DAWA INT'L</i>
3	<i>ICAO LOCATION INDICATOR</i>	<i>HADR</i>

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP Coordinates and Site at AD</i>	<i>09 38 16.03056N 041 50 55.99315E at DWA VOR/DME</i>
2	<i>Directional and distance from city</i>	<i>N. East of Town, 3KM</i>
3	<i>Elevation/Reference temperature</i>	<i>1101.447M DWA VOR/DME)/35°C</i>
4	<i>MAG VAR/Annual Change</i>	<i>1.42°E (1995) /.6'</i>
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	<i>Postal Address: Dire Dawa AIRPORT Tel 251251113611 (PBX) Airport Manager 251251113260 Airport fire fighting 251251113613 Control Tower 251251111120 E-mail: eaeddia@ethionet.et P.O. Box 136 Dire Dawa Ethiopia</i>
6	<i>Types of traffic permitted</i>	<i>IFR/VFR</i>
7	<i>Remarks</i>	<i>Possible presence of monkeys on RWY.</i>

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	<i>0300-1700UTC daily</i>
2	<i>Customs and immigration</i>	<i>0300-1700</i>
3	<i>Health and Sanitation</i>	<i>0300-1700</i>
4	<i>AIS Briefing Office</i>	<i>0300-1700</i>
5	<i>ATS reporting Office</i>	<i>NIL</i>
6	<i>Met Briefing Office</i>	<i>H24</i>
7	<i>ATS</i>	<i>0300-1700</i>
8	<i>Fueling</i>	<i>0300-1700</i>
9	<i>Handling</i>	<i>0300-1700</i>
10	<i>Security</i>	<i>0300-1700</i>
11	<i>De-icing</i>	<i>NIL</i>
12	<i>Remarks</i>	<i>Outside operational Hours written request is needed. All costs associated with night operation will be covered by airline operators using the airport</i>

AD2-4. HANDLING SERVICES AND FACILITIES

1	<i>Cargo-handling facilities</i>	<i>Limited</i>
2	<i>Fuel/Oil types</i>	<i>Jet A1</i>
3	<i>Fueling facilities/capacity</i>	<i>1 refueller, capacity 10,000</i>
4	<i>De-icing facilities</i>	<i>NIL</i>
5	<i>Hangar space for visiting aircraft</i>	<i>NIL</i>
6	<i>Repair facilities for visiting aircraft</i>	<i>Limited</i>
7	<i>Remarks</i>	<i>NIL</i>

AD2-5. PASSENGER FACILITIES

1	<i>Hotels</i>	In City
2	<i>Restaurants</i>	Available at the Airport during operational hrs of the Aerodrome
3	<i>Transportation</i>	Taxis, Airline cars
4	<i>Medical facilities</i>	In City
5	<i>Bank and Post Office</i>	Post office in city, bank in city and airport
6	<i>Tourist Office</i>	In City
7	<i>Remarks</i>	NIL

AD2-6 RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT 7	
2	<i>Rescue Equipment</i>	2 FOAM TENDER WITH 1 RIV	
3	<i>Capability for removal of disabled aircraft</i>	available, 1Mobile crane-45 tone	Commet transport Tel: 0113341239 A/A
		2 Mobile crane -25 tone	Bekelcha transport Tel: 0113341239 A/A
4	<i>Remarks</i>	35 trained personnel	

AD2-7. SEASONAL AVAILABILITY-CLEARING: - AD available all seasons.

AD2-8. APRONS, TAXIWAYS AND CHECK LOCATIONS DATA

1	<i>Apron Surface and Strength</i>	<i>Surface:</i> Asphalt concrete <i>Strength:</i>
2	<i>Taxiway width, Surface and Strength</i>	<i>Width:</i> 20M <i>Surface:</i> Asphalt concrete <i>Strength:</i>
3	<i>ACL Location and Elevation</i>	Nil
4	<i>VOR/INS Check points</i>	Nil
5	<i>Remarks</i>	Nil

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	<i>Use of aircraft stand ID signs, TWY guide lines and Visual docking/parking guidance system of aircraft stands</i>	Yellow apron markings guide aircraft to stands
2	<i>RWY and TWY markings and LGT.</i>	<i>RWY Markings:-</i> THR, Touchdown, Centerline, Edge <i>RWY LGT:</i> Elevated directional high intensity brilliance controlled of white & yellow <i>TWY Markings:</i> Centerline, Taxi holding position <i>TWY LGT:</i> elevated omni directional blue lights Brilliance controlled.
3	<i>Stop bars</i>	Nil
4	<i>Remarks</i>	Nil

Additional companies are available in Addis Ababa, which have necessary equipments for the recovery of disable aircrafts: Addis Mechanical enterprise Mobile crane 35 tone. Tel: 0114160303.

Lalibella enterprise and construction Mobile crane 40 tone. Tel: 0114653000.

Awash construction enterprise. Mobile cato crane 45 tone. Tel: 0114164460

AD2-10. AERODROME OBSTACLES: - Due to high terrain and other obstacles in the take-off climb out area of RWY 15 IFR flights are not permitted to take-off from RWY 15 or approach and land on RWY 33.IFR flights are therefore restricted to approach and land on RWY 33 at all times. Pilots are also required to strictly follow ATC instructions.

AD2-11. METEOROLOGICAL INFORMATION PROVIDED

1	<i>Associated MET office</i>	Dire Dawa Met.Station
2	<i>Hours of service Met Office outside hours</i>	H 24 -
3	<i>Office responsible for TAF preparation Periods of validity</i>	BOLE Aeronautical Met. Office H 24
4	<i>Type of landing forecast Interval of issuance</i>	METAR, SPECI, Half hourly Obs.
5	<i>Briefing/consultation provided</i>	Nil
6	<i>Flight documentation Language(s) used</i>	PL EN
7	<i>Charts and other information available for briefing consultation</i>	Nil
8	<i>Supplementary equipment available for providing information</i>	AWOS, Automatic weather observing system
9	<i>ATS units provided with information</i>	APP/TWR
10	<i>Additional Information</i>	Recent weather

AD2-12. RUNWAY PHYSICAL CHARACTERISTICS

Designations RWY NR	True & Magnetic Bearing	Dimensions of RWY (m)	Strength and Surface of RWY and SWY	T H R Coordinates	The elevation and Highest elevation of TDZ of Precision APP RWY		
					1	2	3
15	151.4°T		PCN41/R/B/W/T	09 38 08.72541N	1105.403m		4
	150°M	2700x45	2200m Asphalt 200M	041 5054.43373E			5
33	331.4°T		THR RWY 33 & 300M	09 36 51.58932N	1156.053m		6
	330°M		THR RWY15 Concrete	041 51 35.42864E			
Slope of RWY/SWY	SWY Dimensio n (M)	Cwy Dimension (M)	Strip Dimension (M)	Obstacle Free Zone	Remark		
					7	8	9
+2% -2%	60M x45	Nil	3520x120	Nil	11	12	*
	60M x 45	Nil					

- IFR flights are not permitted to take-off from RWY 15 or approach and land on RWY 33
See **AD2.10** above.

AD2-13. DECLARED DISTANCES

RWY designator	TORA(M)	TODA(M)	ASDA(M)	LDA(M)	Remarks
1	2	3	4	5	6
15	2700	2760	2700	2700	Nil
33	2700	2760	2700	2700	

AD 2-HADR-4

21 JUN 07

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AD2-14 APPROACH AND RWY LIGHTS

RWY	APCH	THR	PAPI	TDZ	RWY	RWY	RWY	SWY
Desig nator	LGT type	LGHT colour		LGT LEN	Center Line LGT	edge LGT LEN spacing	end LGT	LGT LEN
	LEN INTST	WBAR			Length, spacing,	colour INTST	colour WBAR	(M) Colour Remarks
1	2	3	4	5	6	7	8	9 10
15	Simple approach	Red Unidirectional unidirectional high intensity, brilliance controlled	PAPI RWY Path angle 2.8°	Nil	Nil	2700M, 60M Elevated directional white & Yellow LIH	Red Unidirectional	Nil Nil
33	Nil	Red Unidirectional	Nil	Nil	Nil	2700M, 60M Elevated bi-directional	Red Unidirectional	Nil Nil

AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY

1	ABN/IBN location, characteristics and hours of operation	Nil information
2	LDI Location and LGT anemometer location and LGT	Nil information
3	TWY edge and centreline lighting	Edge: Elevated omni directional blue lights Centreline: NIL
4	Secondary power supply/ switch-over time	Conforms with the requirements of Annex 14, chapter 8 ,standby generator
5	Remarks	Nil

AD2-16. HELICOPTER LANDING AREA - On the apron in front of the terminal building.

AD2-17. ATS AIRSPACE

1	Designation and lateral limits	DIRE DAWA CTR : Circle with a radius of 15NM centered on DWA VOR/DME
2	Vertical limits	Lower limit: GND Upper limit : FL 150
3	Airspace classification	D
4	ATS unit, call sign Language (s)	DIRE DAWA Tower English
5	Transition altitude	15500FT
6	Remarks	0300-1700UTC or later according to requirement

AIP ETHIOPIA

AD 2.18 ATS COMMUNICATION FACILITIES

Servic	Call Sign	Frequency	Co ordinates	Emissio	Hours of Operation	Remarks
1	2	3	4	5	6	7
APP	Dire Dawa Approach	120.3 MHz 7595 kHz	09 36 59.32615N 041 51 21.31887E	A3	0300-1700	50Watts Domestic use
TWR	Dire Dawa Tower	118.3 MHz	09 36 59.32615N 041 51 21.31887E	A3	0300-1700	50 Watts
SMC	Dire Dawa Ground	121.9 MHz	09 36 59.32615N 041 51 21.31887E	A3	0300-1700	50 Watts
		121.5 MHz				50 Watts emergency

AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type	Iden	Frequency (CH)	Co-ordinates	Emission	Hours of Operations	Remarks
1	2	3	4	5	6	7
VOR/DME	DWA	117.7MHZ 1211(TR) 1148(RC)	09 38 37.030N 041 50 39.56E	A2	H24	Location:1km from RWY 15 THR centreline.
Locator	AY	241KHZ	0938 50.09N 041 50 32.5E	A2	H24	Location :330 DEG MAG, 2KM from THR RWY 15 Power:100 Watts Coverage: 50NM

AD2-20 Local traffic regulations: - Not developed.

AD2-21 Noise abatement procedures: - Nil

AD2-22. FLIGHT PROCEDURES

1. Instrument Approach Procedures for Dire Dawa Airport

1.1 Holding Procedures

Holding point	Inbound track MAG	MNM holding ALT/LEVEL	Turn	Outbound	Remark
DWA	RDL 346	10500	-	1MIN*	CAT A/B ACFT
VOR/DME					
DWA	RDL 346	10500	-	1MIN*	CAT C/D ACFT
VOR/DME					
AY LCTR	342°	10500	Right	1MIN*	CAT A/B ACFT
AY LCTR	345°	10500	Right	1MIN*	CAT C/D ACFT

* 1.5 min above 14000FT.

1.2 DWA VOR/DME RWY 15 (CAT A & B Aircraft)

1.2.1 Initial Approach

MSA centered on DWA VOR/DME 12500ft in the SE & 12000ft within the rest of sectors. When cleared for approach descend in the holding pattern overhead DWA VOR/DME (IAF) to 9000ft, from DWA VOR/DME at 9000FT, descend outbound on RDL 346° DWA to 6770ft, execute a level turn left onto intermediate segment.

1.2.2 Intermediate Approach

At RDL 328/D10 DWA (IF) and 6770 ft commence descent (descent gradient 5.0%) on RDL 326 to cross RDL 328/D6 DWA(FAF) at 5560ft .

1.2.3 Final Approach

At RDL 322° /D6 (FAF) and 5560 ft descent (descent gradient 5.0%) on the final approach track RDL 328° to the obstacle clearance altitude (Height) OCA (H) 4340ft (679ft)

1.2.4 Missed approach

If visual contact is not established at D2 DWA (MAPt) turn right immediately (MAX 130 KT) IAS during turn) to intercept RDL 310° DWA climbing to & on reaching 9000ft ALT rejoins the holding

1.3 DWA VOR/DME RWY 15 (CAT C & D Aircraft)**1.3.1 Initial approach**

MSA centered on DWA VOR/DME 12500FT in the SE & 12500FT within the rest of sectors.

When cleared for approach from overhead DWA VOR/DME (IAF) at 10500FT descend outbound on RDL 351 DWA to 6500FT, execute a level base turn left onto intermediate segment.

1.3.2 Intermediate approach

At RDL 328/D12 DWA (IF) and 6500FT commence descent (descent gradient 4.0%) on RDL 328 to cross RDL 328/D7 DWA (FAF) at 5300FT.

1.3.3 Final approach

At RDL 328/D7 DWA (FAF) and 5300FT descend (descent gradient 4.0%) on the final approach track RDL 328 to the obstacle clearance altitude (Height) OCA (H) 4300 (679)FT.

1.3.4 Missed approach

If visual contact is not established at D3 DWA (MAPt) turn right immediately (MAX 185 KT IAS during turn) to intercept RDL 310 DWA

climbing to & on reaching 10500FT ALT rejoin the holding.

1.4 AY LCTR RWY 15 (CAT A/B)**Initial approach**

MSA centered on AY NDB 12000FT to the North West & 12500FT within the rest of the sectors.

When cleared for approach descend in the holding pattern overhead AY LCTR (IAF) to 9000FT from overhead AY LCTR at 9000FT descend outbound for 3 minutes on track 342° to 6600FT, execute a base turn left onto final approach segment.

1.4.2 Final approach

On completing base turn at 6600FT descend on the final approach track 150° to the minimum descent altitude for visual circling approach OCA (H) 5130 (1491)FT.

1.4.3 Missed approach

If visual contact is not established at AY LCTR Beacon (MAPt) turn right as soon as practicable onto track 342° from AY climbing to 9000FT, upon reaching 9000FT return to AY & contact ATC.

1.5 AY LCTR RWY 15 (CAT C/D)**1.5.1 Initial approach**

MSA centered on AY NDB 12000FT to the North West and 12500FT within the rest of the sectors.

When cleared for approach from overhead AY LCTR (IAF) at 10500FT descend outbound for 3 minutes on track 345° to 7200FT, execute a base turn left onto final approach segment.

1.5.2 Final approach

On completing base turn at 7200FT descend on the final approach track 150° to the minimum descent altitude for visual circling approach OCA (H) (1491)FT.

1.5.3 Missed approach

If visual contact is not established at AY LCTR beacon (MAP), turn right as soon as practicable onto track 345° from AY climbing to 10500FT, upon reaching 10500FT return to AY & contact ATC.

1.6 Special procedures for Dire Dawa

Pilots should establish VHF Contact on the appropriate frequency for aerodrome MET and traffic information at least 15 NM out of the respective airfields.

AD2-23. Additional information Nil

AD2-24. Charts related to an aerodrome
Aerodrome Obstacle Chart-ICAO AD-2
HADR-9

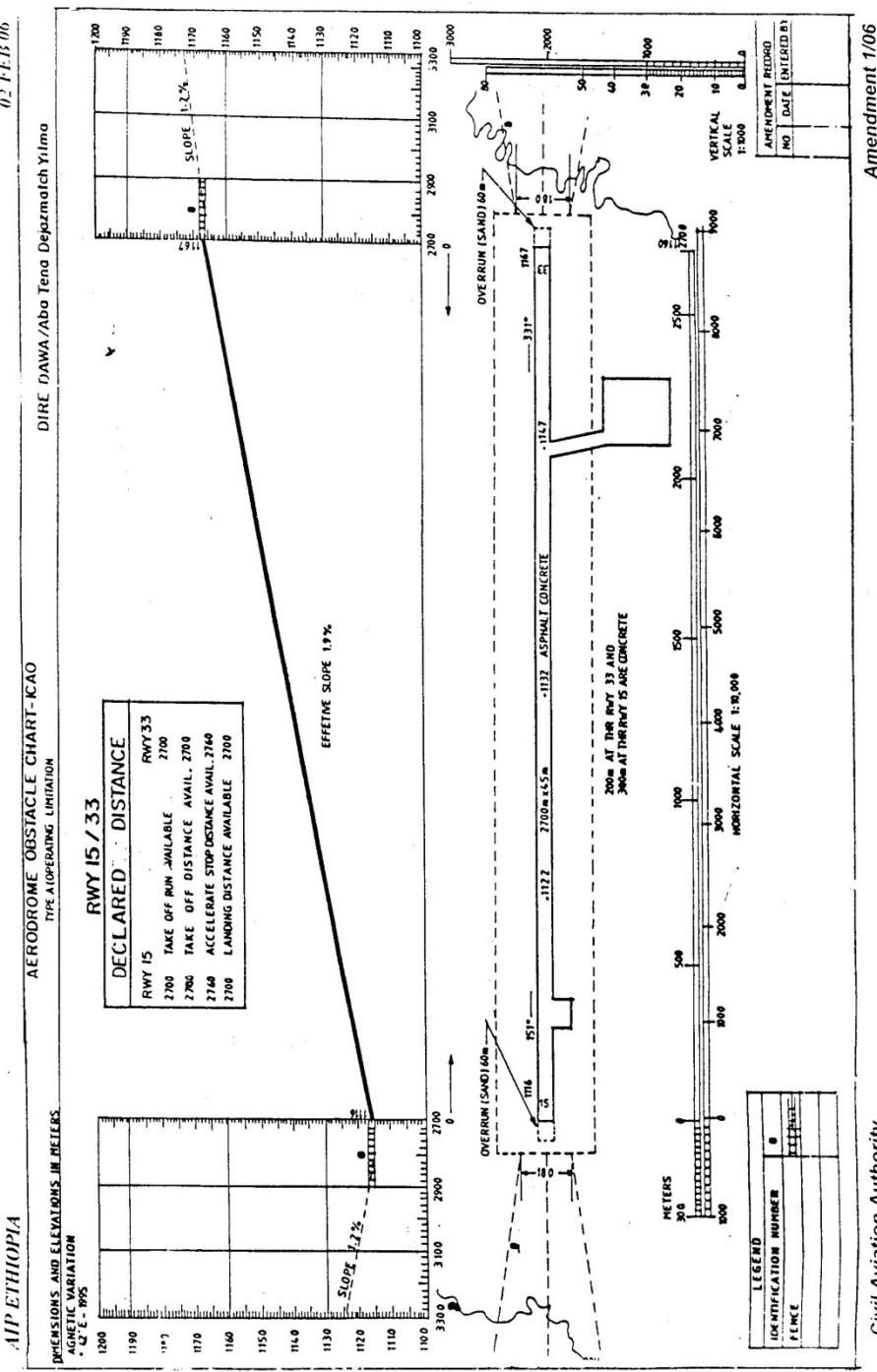
Instrument Approach Chart ICAO VOR/DME
RWY15 (CATA/BACFT) AD-2 HADR-10

Instrument Approach Chart-ICAO-VOR/DME
RWY 15 (CAT C/D ACFT) AD-2 HADR-11

Instrument Approach Chart-ICAO-L RWY 15
(CAT A/B ACFT).... AD-2 HADR..12

Instrument Approach Chart-ICAO-L RWY
15 (CAT C/D ACFT) AD-2HADR..13

ADD 2 ILS DIR-9
02 FEB 06



Civil Aviation Authority
Addis Ababa

Amendment 1/06

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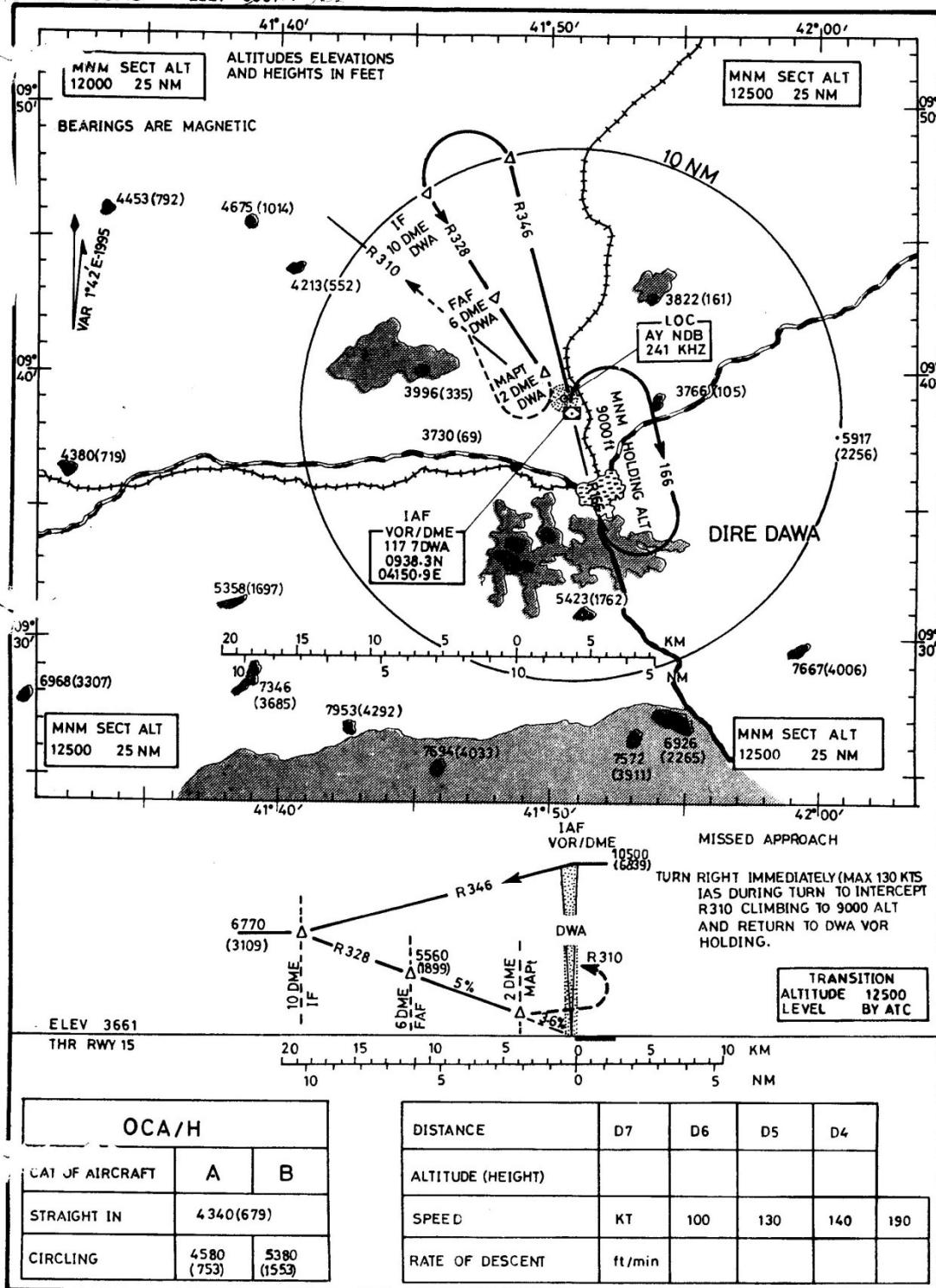
AD2.HADR-10
13 JUN 02

**INSTRUMENT
APPROACH
CHART-ICAO**

AERODROME ELEV 3827FT
HEIGHTS RELATED TO
THR RWY 15
ELEV 3661FT

APP 120-3
TWR 118-3

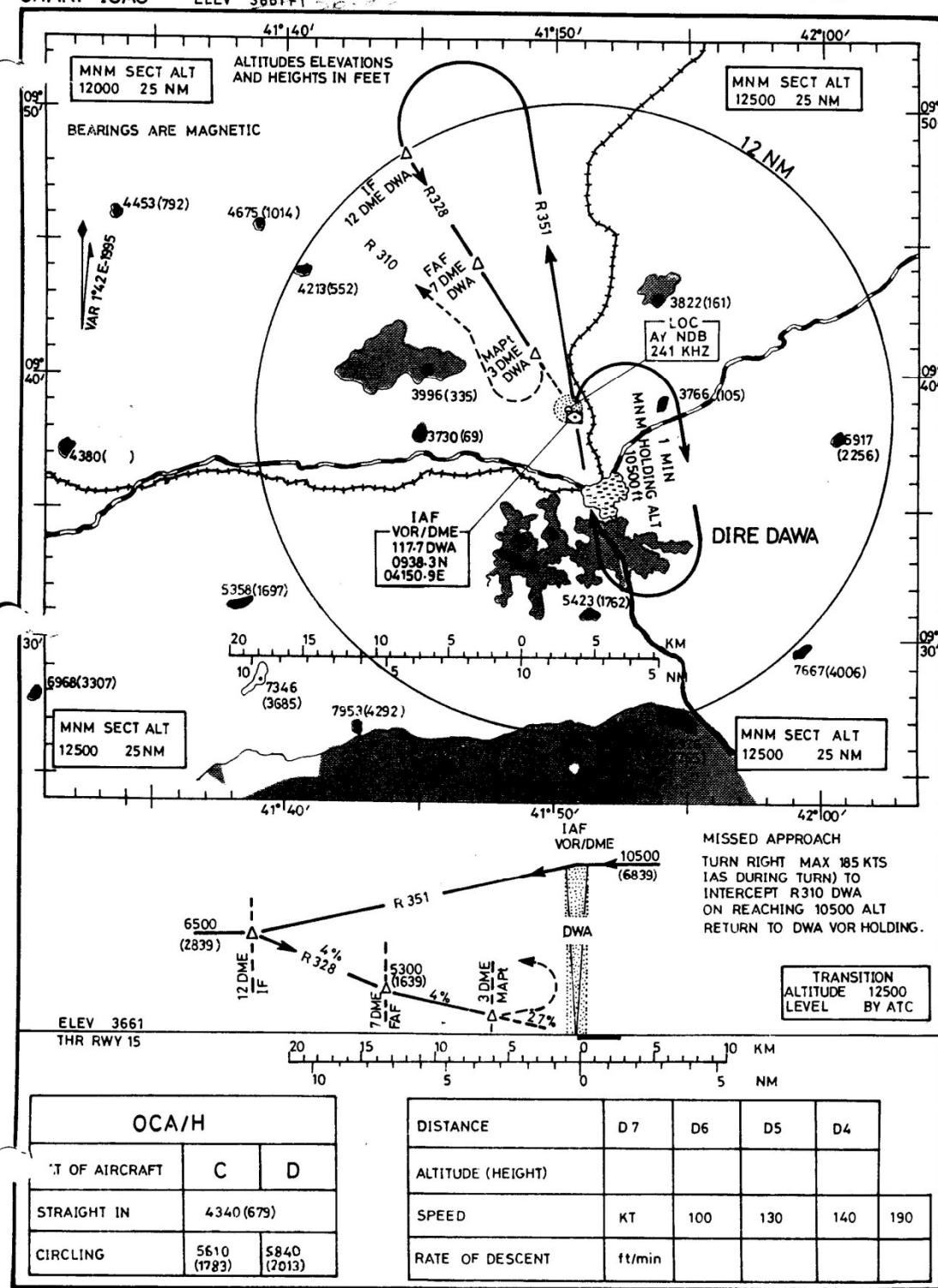
DIRE DAWA INTL AIRPORT
VOR/DME
RWY 15



CIVIL AVIATION AUTHORITY
ADDIS ABEBA

AMENDMENT 1/02

AIP ETHIOPIA

AD 2-HADR-11
13 JUN 02INSTRUMENT
APPROACH
CHART-ICAOAERODROME ELEV 3827 FT
HEIGHTS RELATED TO
THR RWY 15
ELEV 3661 FTAPP 120.3
TWR 118.3DIRE DAWA INTL AIRPORT
VOR/DME
RWY 15CIVIL AVIATION AUTHORITY
ADDIS ABEBA

AMENDMENT 1/02

AIP ETHIOPIA

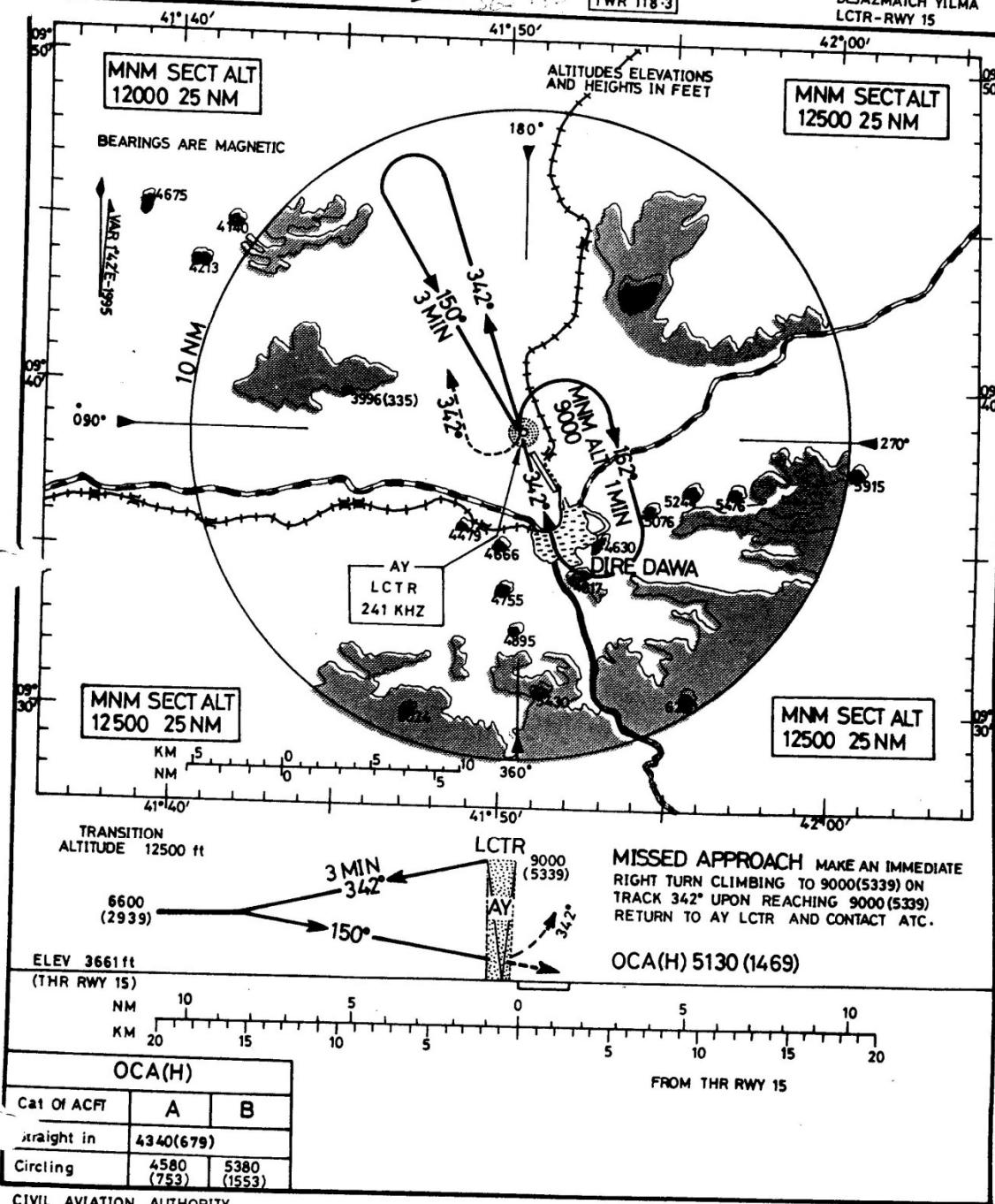
INSTRUMENT
APPROACH
CHART-ICAO

AERODROME ELEV 3827FT
HEIGHTS RELATED TO
THR RWY 15 ELEV 3661FT

APP 120.3
TWR 118.3

AD2.HADR-12
13 JUN 02

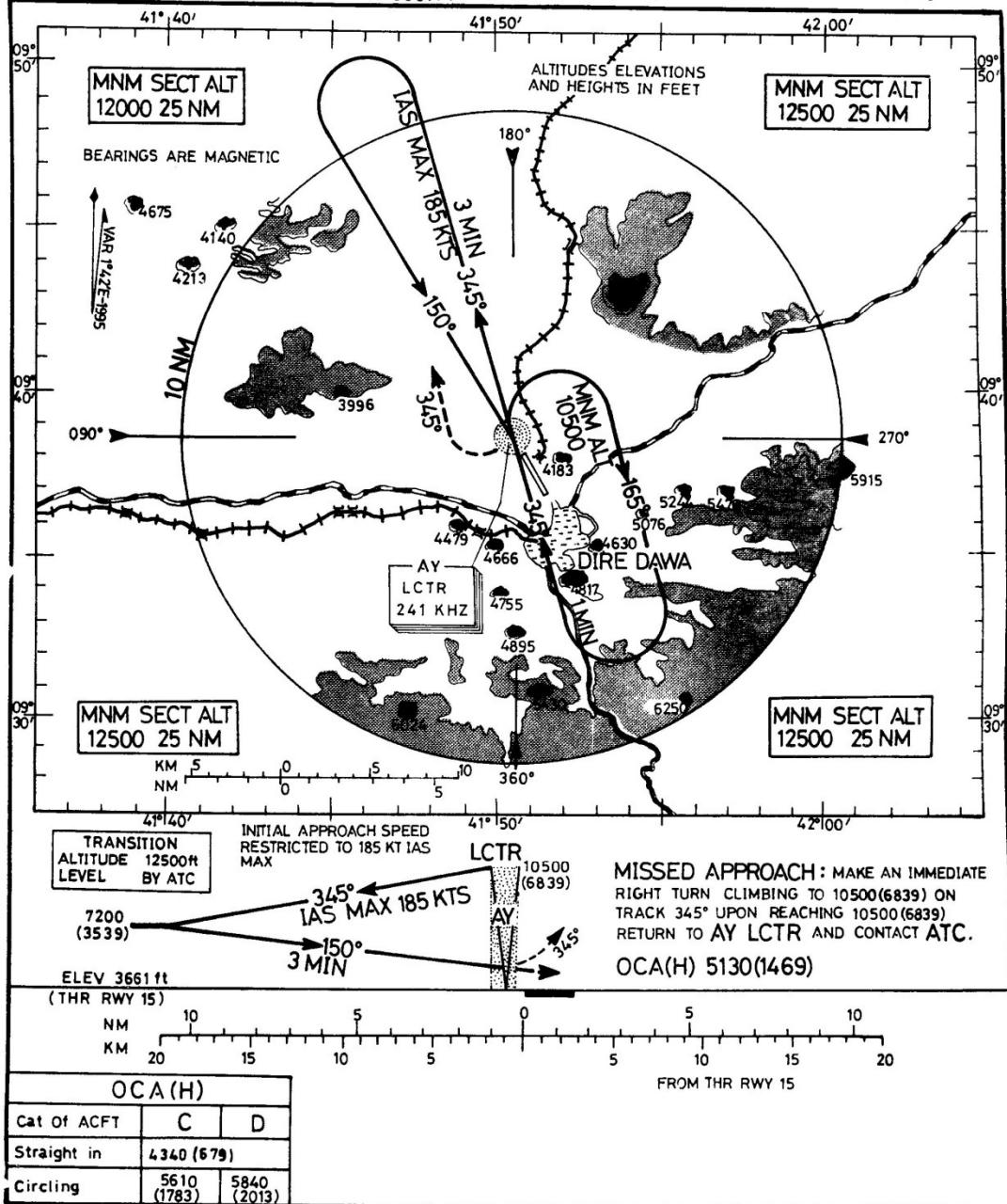
DIRE DAWA
ABA TENA
DEJAZMATCH YILMA
LCTR-RWY 15



CIVIL AVIATION AUTHORITY
ADDIS ABEBA

Amendment 1/02

AIP ETHIOPIA

AD2 HADR-13
13 JUN 02INSTRUMENT
APPROACH
CHART-ICAOAERODROME ELEV 3827 FT
HEIGHTS RELATED TO
THR RWY 15 ELEV 3661 FTAPP 120.3
TWR 118.3DIRE DAWA
ABA TENA
DEJAZMATCH YILMA
LCTR - RWY 15CIVIL AVIATION AUTHORITY
ADDIS ABEBA

Amendment 1/02

AD2-AERODROMES
HAGB – GOBA/ROBE

AD2-1. AERODROME LOCATION INDICATOR AND NAME

1	<i>Location name</i>	Goba/Robe
2	<i>Airport name</i>	Goba/Robe
3	<i>ICAO Location indicator</i>	HAGB

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP coordinates and site at AD</i>	*070700N 0400200E
2	<i>Direction and distance from city</i>	East of Goba town, 8 km
3	<i>Elevation/reference temperature</i>	7892FT/22°C
4	<i>MAG VAR/Annual change</i>	1.8° E (1995).6' increase
5	<i>AD Administration, Address, Telephone, Telex, AFS</i>	Robe Goba Airport Telephone:+ 251-0913 06 2521 Airport Manager Postal Address: <u>Goba Robe Airport Administration</u> P.O. BOX 157 Robe Ethiopia
6	<i>Types of traffic permitted</i>	VFR
7	<i>Remarks</i>	*Coordinates are not in WGS-84 reference

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	0500 -1400 UTC
2	<i>Customs and Immigration</i>	Nil
3	<i>Health and Sanitation</i>	Nil
4	<i>AIS Briefing Office</i>	Nil
5	<i>ATS Reporting Office</i>	Nil
6	<i>Met Briefing Office</i>	Nil
7	<i>ATS</i>	Nil
8	<i>Fueling</i>	Nil
9	<i>Handling</i>	Nil
10	<i>Security</i>	Nil
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	No schedule Flight

AD2-4. HANDLING SERVICES AND FACILITIESNil**AD2-5. PASSENGER FACILITIES**

- 5.1 Hotels, restaurant and medical facilities: In town
- 5.2 Transportation available: Taxi

AD2.6. RESCUE AND FIRE FIGHTING SERVICESNil**AD2.7. SEASONAL AVAILABILITY-CLEARING - AD available at all seasons.**

AD 2-HAGB-2

02 FEB 06

AIP ETHIOPIA

AD2-8. APRONS, TAXIWAYS AND CHECK LOCATIONS DATA

1	<i>Apron Surface and Strength</i>	Surface Volcanic gravel with grass <i>Strength: PCN 20</i>
2	<i>Taxiway width, Surface and Strength</i>	<i>Width: 20M</i> <i>Surface: grave covered with grass</i> <i>Strength: PCN 20</i>
3	<i>ACL Location and Elevation</i>	Nil
4	<i>VOR/INS Check points</i>	Nil
5	<i>Remarks</i>	Nil

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKIN

1	Use of aircraft stand ID signs TWY guide lines and visual docking/parking guidance system of aircraft stands	Nil
2	RWY and TWY markings and LGT	<i>RWY markings:</i> White painted stones side edge markings every 100M on both sides of strip and at the end. <i>RWY LGT:</i> NIL <i>TWY markings :</i> NIL <i>TWY LGT:</i> NIL
3	Stop bars	Nil
4	Remarks	Nil

AD2.10. AERODROME OBSTACLES - Clear on both sides.**AD2.11. METEOROLOGICAL INFORMATION PROVIDED** Nil**AD2.12. RUNWAY PHYSICAL CHARACTERISTICS**

Designations RWY NR	True & Magnetic Bearing	Dimensions of RWY (m)	Strength and Surface of RWY and SWY	T H R Coordinates	The elevation and Highest elevation of TDZ of Precision APP RWY
1	2	3	4	5	6
15	151.8°T 150°M	2350x45	Compacted volcanic gravel(ash) covered whit grass	-	-
33	331.8°T 330°M				-
Slope of RWY/SWY	SWY Dimension (M)	CWY Dimension (M)	Strip Dimension (M)	Obstacle Free Zone	Remark
7	8	9	10	11	12
+0.5%	-	100M x 45	2350x45	Nil	-
-0.5%	-	100M x 45			

AD2-13. DECLARED DISTANCES

RWY designator	TORA(M)	TODA(M)	ASDA(M)	LDA(M)	Remarks
1	2	3	4	5	6
15	2350	2450	2350	2350	
33	2350	2450	2350	2350	

AD2-14. APPROACH AND RUNWAY LIGHTING ----- Nil

AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY -----	Nil
AD 2.16 HELICOPTER LANDING AREA -----	Nil
AD 2.17 ATS AIRSPACE -----	Nil
AD 2.18 ATS COMMUNICATION FACILITIES -----	Nil
AD 2.19. RADIA NAVIGAION AND LANDING AIDS-----	Nil
AD 2.20 LOCAL TRAFFIC REGULATIONS -----	Nil
AD 2.21 NOISE ABATEMENT PROCEDURES -----	Nil
AD 2.22 FLIGHT PROCEDURES -----	Nil
AD 2.23 ADDITIONAL INFORMATION -----	Nil
AD 2.24 CHARTS RELATED TO AN AERODROME -----	Nil

AD2-AERODROMES
HAGM - GAMBELLA

AD2-1 . AERODROME LOCATION INDICATOR AND NAME

1	Location name	Gambella
2	Airport name	Gambella
3	ICAO Location indicator	HAGM

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	ARP coordinates and site at AD	080702.25367N 034 33 48.09930E at THR 36
2	Directional and distance from city	South of town, 17 KM
3	Elevation/reference temperature	539.9M(Ellipsoidal height THR 36)//39.3°C
4	MAG VAR/Annual change	2°E (1995) /.6' increase
5	AD Administration, Address, Telephone Telex, AFS	<i>Gambella Air port</i> Air port Manager Tel 251475511052 E-mail: Jimma.ap@ethionet.et P.O.BOX:- 77 Gambella, Ethiopia
6	Types of traffic permitted	VFR
7	Remarks	Coordinates are in WGS-84 reference

AD2-3. OPERATIONAL HOURS

1	AD Administration	0500-1400 UTC TUE,WED FRI & SAT(*)
2	Customs and immigration	Nil
3	Health and sanitation	Nil
4	AIS Briefing office	Nil
5	ATS reporting office	Nil
6	Met Briefing office	Nil
7	ATS	0500-1400 UTC TUE,WED FRI & SAT (*)
8	Fueling	0400-1500
9	Handling	Nil
10	Security	0500-1400 UTC TUE,WED FRI & SAT (*)
11	De-icing	Nil
12	Remarks	(*) see NOTAM or AIP SUP for latest Ethiopian Airlines flight SKED. For non-SKED flights prior arrangement is required.

AD2-4. HANDLING SERVICES AND FACILITIES - Limited**AD2-5. PASSENGER FACILITIES**

- 5.1 Hotels, restaurants and medical facilities: In town.
- 5.2 Transportation: NIL (by personal arrangement)

AD2-6. RESCUE AND FIRE FIGHTING SERVICES

1	AD Category for fire fighting	CAT 6
2	Rescue equipment	1 Foam tender
3	Capability for removal of disabled aircraft	Limited
4	Remarks	7 Trained personnel

AD2-7. SEASONAL AVAILABILITY-CLEARING

1	Types of clearing equipment	Nil
2	Clearance priorities	Nil
3	Remarks	AD available all seasons

AD2-8. APRONS, TAXIWAYS AND CHECK LOCATIONS DATA

1	Apron Surface and Strength	Surface: Asphalt concrete Strength: PCN 50/R/B/W/U
2	Taxiway width, Surface and Strength	Width: 23M Surface: cement concrete Strength: PCN 50/R/B/W/U
3	ACL Location and Elevation	Nil
4	VOR/INS Check points	Nil
5	Remarks	Nil

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKIN

1	Use of aircraft stand ID signs TWY guide lines and visual docking/parking guidance system of aircraft stands	Nil
2	RWY and TWY markings and LGT	RWY markings: THR, Centerline marking RWY LGT: NIL TWY markings : centerline, holding positions TWY LGT: NIL
3	Stop bars	Nil
4	Remarks	Nil

AD2-10. AERODROME OBSTACLES - See aerodrome obstacle chart**AD2-11. METEOROLOGICAL INFORMATION PROVIDED - Nil****AD2-12. RUNWAY PHYSICAL CHARACTERISTICS**

Designations RWY NR	True & magnetic bearing	Dimensions of RWY (M)	Strength (PCN) and surface of RWY and SWY	THR coordinates	THR elevation and highest elevation of TDZ of precision APP RWY
1	2	3	4	5	6
18	182° T 180° M 362° T 360° M	2520X45	PCN 32/R/B/W/T Cement concrete	N080824.09240 E0343347.659128 N080702.25367 E0343348.09930	- -
36					
Slope of RWY/SWY	SWY dimension (M)	CWY dimension (M)	Strip dimension (M)	Obstacle Free zone	Remarks
7	8	9	10	11	12
+0.5% -0.3%	60 x 45 60 x 45	NIL	2520X1 50	Nil	* Coordinates and Heights are in WGS-84 reference

AD2-13. DECLARED DISTANCES

RWY designator	TORA(M)	TODA(M)	ASDA(M)	LDA(M)	Remarks
1	2	3	4	5	6
18	2520	2580	2580	2520	NIL
36	2520	2580	2580	2520	

AD2-14. APPROACH AND RUNWAY LIGHTING - Nil**AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY - Nil****AD2-16. HELICOPTER LANDING AREA - On the apron in front of the terminal.****AD2-17. ATS AIRSPACE**

1	<i>Designation and Lateral limits</i>				
2	<i>Vertical limits</i>	Lower limit = GND Upper limit = FL 175			
3	<i>Airspace classification</i>	E			
4	<i>ATS unit, call sign Language (s)</i>	Gambella Tower English			
5	<i>Transition altitude</i>	8500FT			
6	<i>Remarks</i>	NIL			

AD2-18. ATS COMMUNICATION FACILITIES

Servi ce	Call Sign	Frequency	Coordinates	Emission	Hours of Operation	Remarks
1	2	3	4	5	6	7
TWR	Gambella Tower	118.7MHZ	080757.68978N 0343352.88668E	A3	During AP Ops hrs	50 Watts
SMC TWR	Gambella Ground	121.9MHZ 7595KHZ 121.5MHZ	080757.68978N 0343352.88668E	A3	During AP Ops hrs	50 Watts 50 Watts Emergency

AD2-19. RADIO NAVIGATION AND LANDING AIDS

Type	ID	Frequenc y	Coordinates	Emission	Hours of Operations	Remarks
1	2	3	4	5	6	7
VOR/DM E	BR O	114.5MH Z	080741.75N 343341.03E	A2	H24	

AD2-20. LOCAL TRAFFIC REGULATIONS..... Nil**AD2-21 NOISE ABATEMENT PROCEDURES Nil****AD2-22 FLIGHT PROCEDURES..... Nil****AD2-24. Charts related to an aerodrome**

Aerodrome Chart - ICAO..... AD2-HAGM-6

Aerodrome Obstacle Chart - ICAO..... AD2-HAGM-7

AIP ETHIOPIA

AD2 HAGM-6
13 JUN 02

AERODROME CHART - ICAO

GAMMELLA ELEV 1637

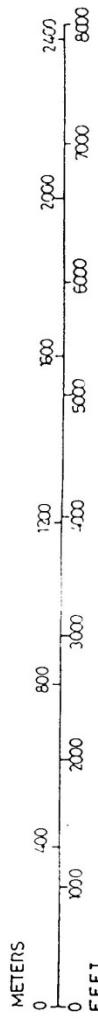
TWR 118.7
APRON 121.9

GAMBELLA/Gambella

ELEVATIONS IN FEET AND DIMENSIONS IN METERS
BEARINGS ARE MAGNETIC

RWY	DIRECTION	THR	BEARING STRENGTH
18	180°		PCN
36	360°		all runways taxyways and apron

TO GAMBELLA TOWN
271.95



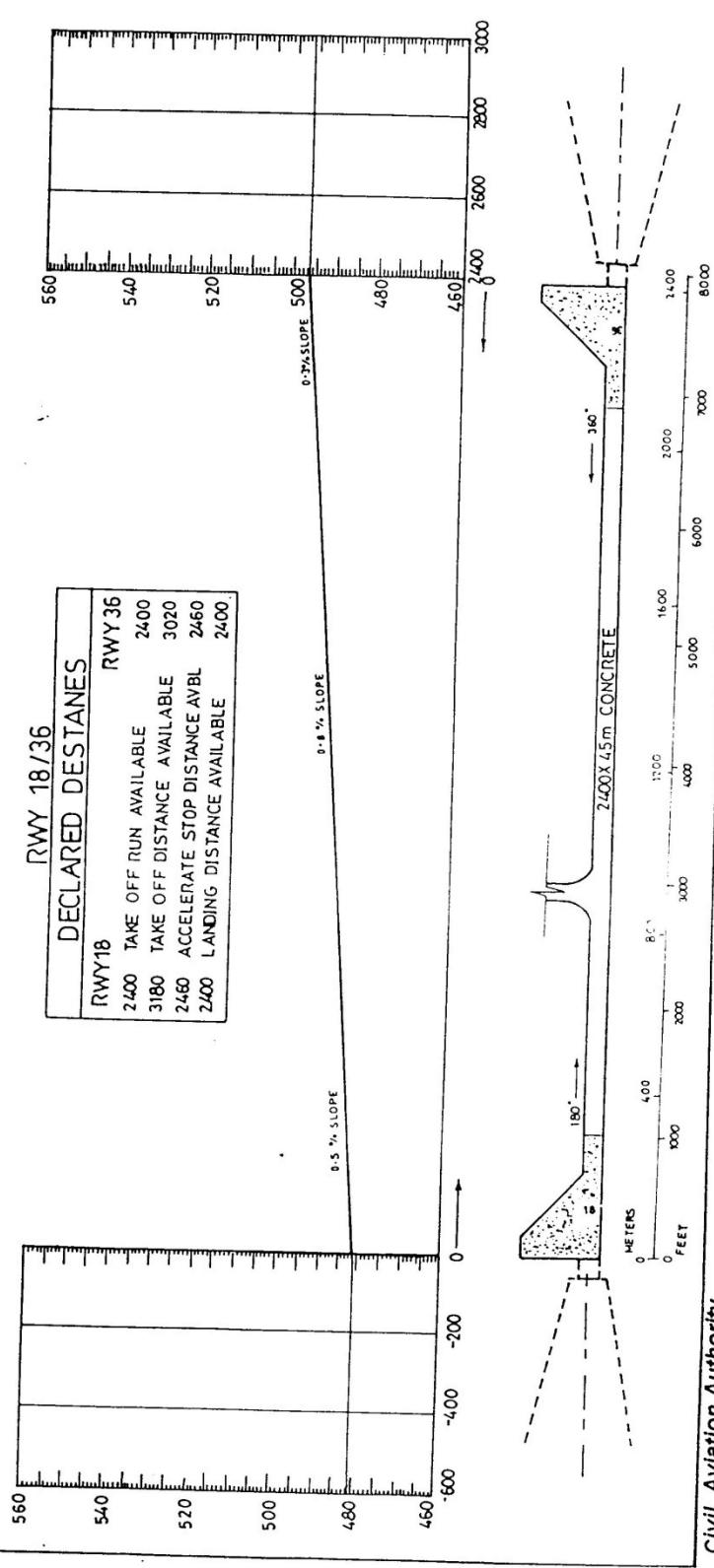
Civil Aviation Authority
Addis Ababa

AMENDMENT 1/02

AIP ETHIOPIA

DIMENSIONS AND ELEVATIONS IN METERS
MAGNETIC VARIATION
2° E. 1995

AERODROME OBSTACLE CHART - ICAO
TYPE A OPERATING LIMITATION



Civil Aviation Authority
Addis Ababa

AMENDMENT 1/02

**CIVIL AVIATION AUTHORITY
AERONAUTICAL INFORMATION SERVICE
P.O.BOX 978
ADDIS ABEBA**

Phone: 251 116650200 Ext 153, 155
AFTN: HAAAYGYX
FAX: (251) -11 - 6650281
E-mail: caa.airnav@ethionet.et

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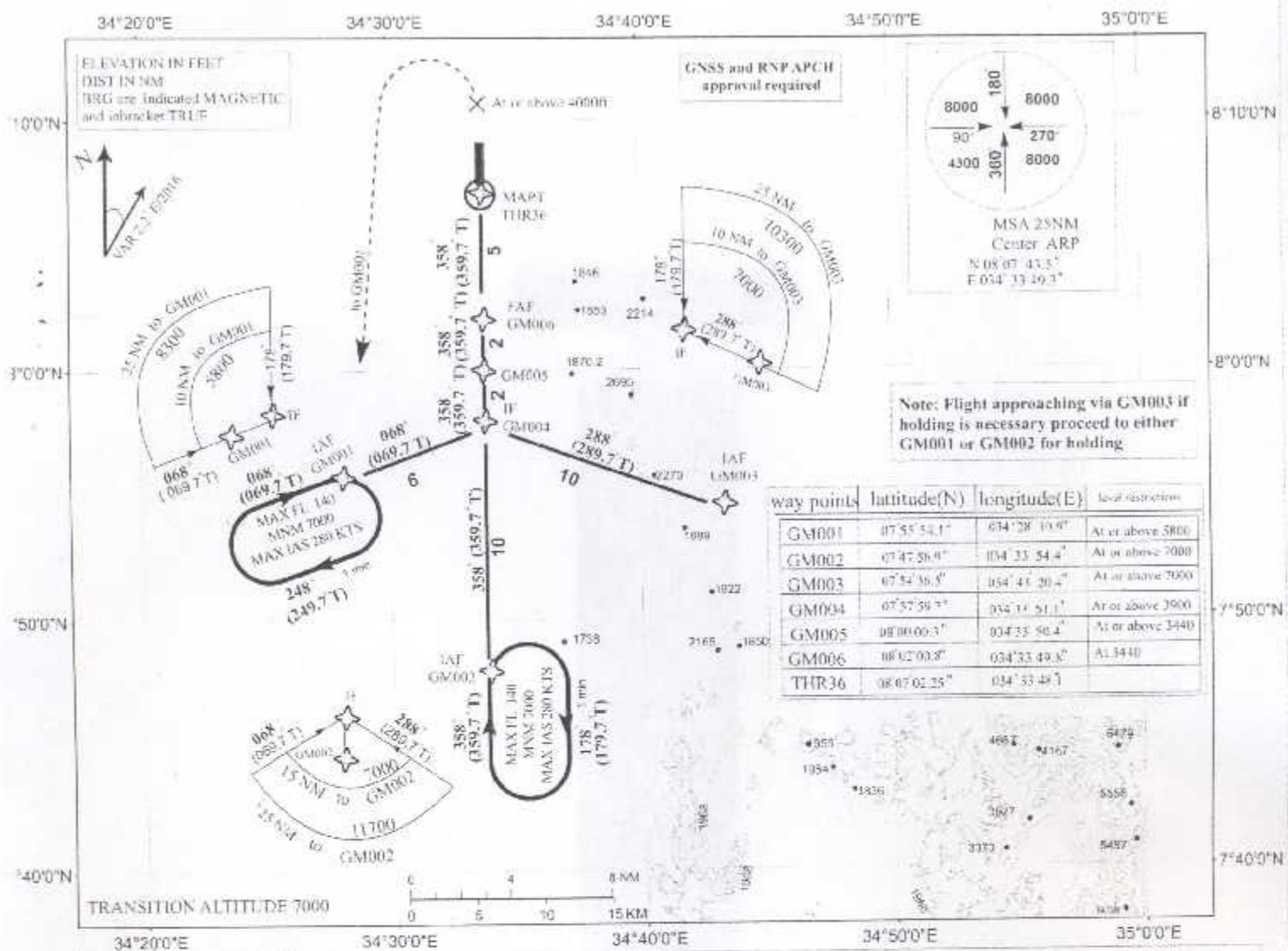
02/18
09 MAY 2018

Gambella Airport RNAV GNSS Approach Procedure for Runway 18/36.

Effective from 21 JUN 2018 RNAV GNSS Approach Procedures established for Runway 18/36 at Gambella (HAGM) Airport and will be applicable as shown in attachment 1 and 2.

Fantaye Yakob

Director, Aeronautical Information Services.

INSTRUMENT
APPROACH
CHARTAERODROME
ELEV 1804TWR 118.5
GND 121.9GAMBELA (HAGM)
RNAV(GNSS) RWY 36

TRANSITION ALTITUDE 7000

34°20'0"E 34°30'0"E 34°40'0"E 34°50'0"E 35°0'0"E

0 5 10 15 KM

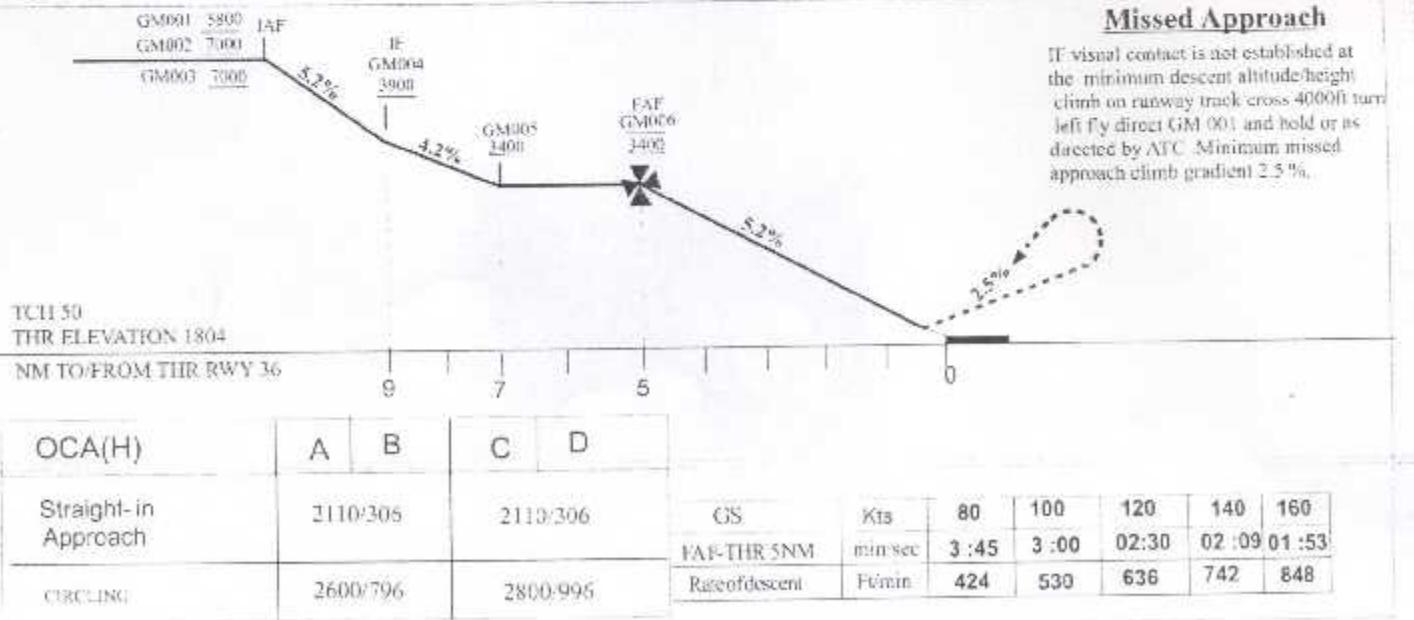
0 5 7 9 NM

TCU 50 THR ELEVATION 1804

NM TO/FROM THR RWY 36

Missed Approach

If visual contact is not established at the minimum descent altitude/height climb on runway track cross 4000ft turn left fly direct GM 001 and hold or as directed by ATC. Minimum missed approach climb gradient 2.5 %.



Attachment 2 to AIRAC SUP 02/18

INSTRUMENT APPROACH CHART AERODROME ELEV 1804 THR RWY 18 ELEV 1751 TWR 118.4 GND 121.9 GAMBIELLA(HAGM) RNAV(GNSS)RWY 18

EL ELEVATION IN FEET
DIST IN NM
BRG MAGNETIC and
in bracket TRUE.
Var 2.3°E/2016

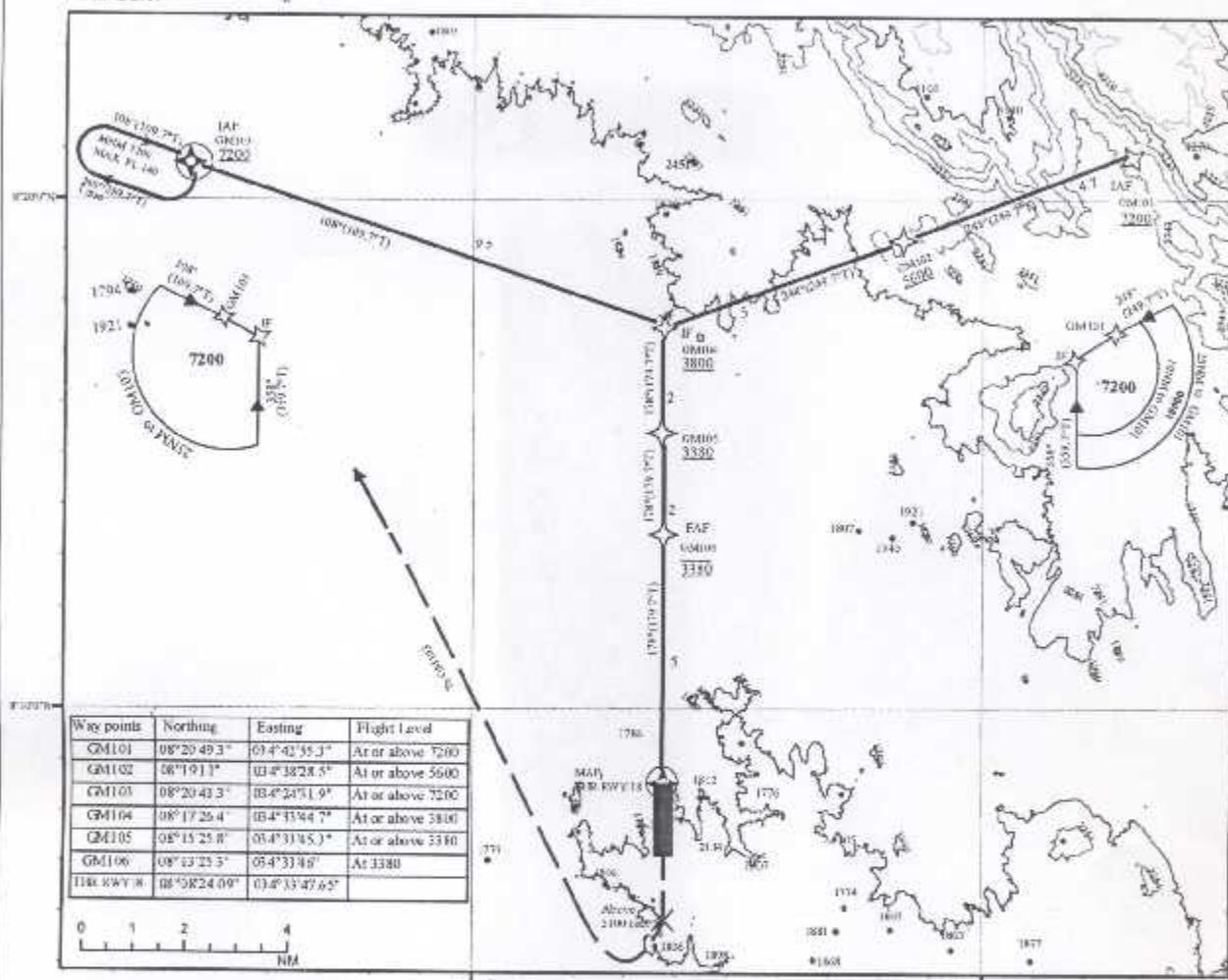
TWR 118.4
GND 121.9

GAMBELLA(HAGM)
RNAV(GNSS)RWY 18

10

EPA/PCB approval
and GNSS required.

NOTE:
Air Crafts approaching via
GM 1BL if landing is necessary
hold over GM 1B3



[View Details](#)

— 10 —

Misled approach
If visual contact is not established at the minimum descent altitude/height + 100 ft on runway track cross 5100 ft right fly direct GM103 and hold or as directed by ATC. Minimum missed approach climb gradient 2.5%.

Fran, GM 101 728

TCI 132
THREE ELEVATION FTSI

OCM(H)		A	B	C	D								
Straight-in approach	LNK9	2130(379)			GS		Ku	80	100	120	140	160	
					FAT-MAP: 5NM		min. age	07-45	03-59	02-20	02-09	01-53	
		Rate of descent			Flyman	424	550	536	712	848			
CIRLING		2610(79%)	2810(99%)										
		EST. OCM 0.1900850		\$	4	3	2	1	0				
		ALRT. DFTD:		3380	3679	2250	2430	2120	1409				

**AD 2-AERODROMES
HAGN - GONDER****AD 2.1 AERODROME LOCATION INDICATOR AND NAME**

1	<i>Location name</i>	Gonder
2	<i>Airport name</i>	Gonder ATSE TEWODROS AIRPORT
3	<i>ICAO location indicator</i>	HAGN

AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP Coordinates and site at AD</i>	12 31 56.40650N 037 25 54.47219E at THR RWY 17
2	<i>Direction and distance from city</i>	South of town 16NM
3	<i>Elevation/reference temperature</i>	1993.557m (Ellipsoidal height at THR RWY 17)/27°C
4	<i>MAG VAR/Annual change</i>	2.3° (1995) / .6' increase
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	Postal Address: Gonder Emperor Tewodros Airport Tel 251581140400(PBX) 251581140365 Airport Manager 251581140366 fire fighting station 251581140368 Control Tower E-mail: bahirdar.ap@ethionet.et <u>Gonder Airport Administration</u> P.O.BOX 99 Gonder,Ethiopia
6	<i>Types of traffic permitted</i>	VFR
7	<i>Remarks</i>	Nil

AD 2.3 OPERATIONAL HOURS

1	<i>AD Administration</i>	0500 - 1500 UTC
2	<i>Customs and immigration</i>	Nil
3	<i>Health and sanitation</i>	Nil
4	<i>AIS Briefing office</i>	Nil
5	<i>AIS Reporting office</i>	Nil
6	<i>Met Briefing office</i>	Nil
7	<i>ATS</i>	0500 - 1500
8	<i>Fueling</i>	0500 - 1500
9	<i>Handling</i>	0500 - 1500
10	<i>Security</i>	0500 - 1500
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	Nil

AD 2.4 HANDLING SERVICES AND FACILITIES: - Limited**AD 2.5 PASSENGER FACILITIES**

2.5.1 Hotels, restaurants and medical facilities: - In town

2.5.2 Transportation available :- Taxis

AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	AD Category for fire fighting	CAT 5	
2	Rescue equipment	One foam tender	
3	Capability for removal of disabled aircraft	available:1 Forklift	Dashen brewery Tel:081140535 Gonder
		2 Crane- 25 tone	Akir construction Tel; 0913395206 Gonder
4	Remarks	15 Trained personnel	

AD 2.7 SEASONAL AVAILABILITY-CLEARING: - AD available all seasons

AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATION DATA

1	Apron Surface and Strength	Surface: Asphalt concrete Strength: PCN 50/F/C/X/T
2	Taxiway width, Surface and Strength	Width:23m Surface: Asphalt concrete Strength: PCN 50/F/C/X/T
3	ACL Location and Elevation	Nil
4	VOR/INS Check points	Nil
5	Remarks	Nil

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	Use of aircraft stands ID signs, TWY guide lines and Visual docking/parking guidance system of aircraft stands.	Yellow apron markings guide aircrafts to stands
2	RWY and TWY markings.	<i>RWY markings:</i> Designation, THR, Touchdown, Centreline, edge. <i>RWY LGT:</i> Edge elevated bi-directional and Brilliance control of combination of white and amber lights <i>TWY markings:</i> Centreline, Taxi holding position, Edge <i>TWY LGT:</i> Edge elevated omni directional blue lights
3	Stop bar	Nil
4	Remarks	Nil

Additional companies are available in Addis Ababa, which have necessary equipments for the recovery of disable aircrafts: Addis Mechanical enterprise Mobile crane 35 tone. Tel: 0114160303.

Lalibella enterprise and construction Mobile crane 40 tone. Tel: 0114653000.

Awash construction enterprise. Mobile cato crane 45 tone. Tel: 0114164460

AD 2.10 AERODROME OBSTACLES:- Hills 2 miles from RWY 17, 350° MAG, approach on RWY 35 and take-off on RWY 17 only.

AD 2.11 METEOROLOGICAL INFORMATION PROVIDED

1	Associated MET office	Gonder Met. Station
2	Hours of service <i>Met Office outside hours</i>	15 Hrs As agreed with the concerned
3	Office responsible for TAF preparation <i>Periods of validity</i>	BOLE Met.Office As per local flight schedule
4	Type of landing forecast <i>Interval of issuance</i>	METAR,SPECI Every hourly
5	Briefing/consultation provided	Nil
6	Flight documentation <i>Language(s) used</i>	
7	Charts and other information available for briefing consultation	
8	Supplementary equipment available for providing information	AWOS, Automatic weather observing system
9	ATS units provided with information	TWR
10	Additional Information	Recent weather

AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designations RWY NR	True & Magnetic Bearing	Dimensions of RWY (M)	Strength and Surface of RWY and SWY	THR Coordinates	THR elevation and Highest elevation of TDZ of Precision APP RWY
1	2	3	4	5	6
17	172.3°T 170°M		PCN 50 F/D/X/T Asphalt	123140.39597N 0372557.39843E	1985.9519M(*)
35	352.3°T 350°M	2780 x 45	concrete	123027.38129N 0372610.74139E	1940.3669M(*)
Slope of RWY/SWY	SWY dimension (M)	CWY dimension (M)	Strip dimension (M)	Obstacle free zone	Remarks
7	8	9	10	11	12
-2%	60		2900 x 150	Nil	(*)MSL height
2%	60	Nil			

AD 2.13. DECLARED DISTANCES

RWY Designator	TORA(M)	TODA(M)	ASDA(M)	LDA(M)	Remarks
1	2	3	4	5	6
17	2780	2840	2840	-	*
35	-	-	-	2780	

* Approach on RYW 35 and take-off on RWY 17 only.

AD 2.14 APPROACH AND RUNWAY LIGHTING

RWY	Approach Lights Type, Length, Intensity	Threshold PAPI	VASIS Lights Colour, WBAR	TDZ Light	RWY CL Spacing, Leng	RWY Edge Lights Colour, Intensity	RWY end LGT Colour WBAR	SWY LGT Length, Colour	RMRKS
1	2	3	4	5	6	7	8	9	10
17	Nil	Nil	Nil	Nil	Nil	2780m, 60m, 600m yellow the rest	Red	Nil	Nil
35	Simple App white 420m high	Green	PAPI left/3° Unidirecti onal	Nil	Nil	2780m,60m , 600m yellow the rest white	Red	Nil	Nil

AD215. OTHER LIGHTING, SECONDARY POWER SUPPLY ----- Nil**AD2-16. HELICOPTER LANDING AREA: - in front of the terminal building.****AD2-17. ATS AIRSPACE ----- Nil****AD2-18. ATS COMMUNICATION FACILITIES**

Service	Call Sign	Frequency	Coordinates		Emission	Hours of Operation	Remarks
1	2	3	4	5	6	7	
TWR	Gonder Tower	118.6MHZ	12 31 11.000006N	A3	During AP Ops hrs	50 Watts	50 Watts
		7595KHZ	37 25 55.79146E				
		121.5MHZ					
SMC	Gonder Ground	121.9MHZ	12 31 11.000006N	A3	During AP Ops hrs	50 Watts	
			37 25 55.79146E				

AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type	ID	Frequency	Coordinates	Emission	Hours of operation	Remarks
1	2	3	4	5	6	7
L	AZZ	349KHZ	12 29 53.46149N 037 26 16.93983E	A2	H24	Power: 100watts Coverage:150NM Elevation: 1857.9m AMSL

AD2-20. LOCAL TRAFFIC REGULATIONS ----- Nil**AD2-21. NOISE ABATEMENT PROCEDURES ----- Nil****AD2-22. FLIGHT PROCEDURES ----- Nil****AD2-23. ADDITIONAL INFORMATION ----- Nil****AD2-24. CHARTS RELATED TO AN AERODROME:-**

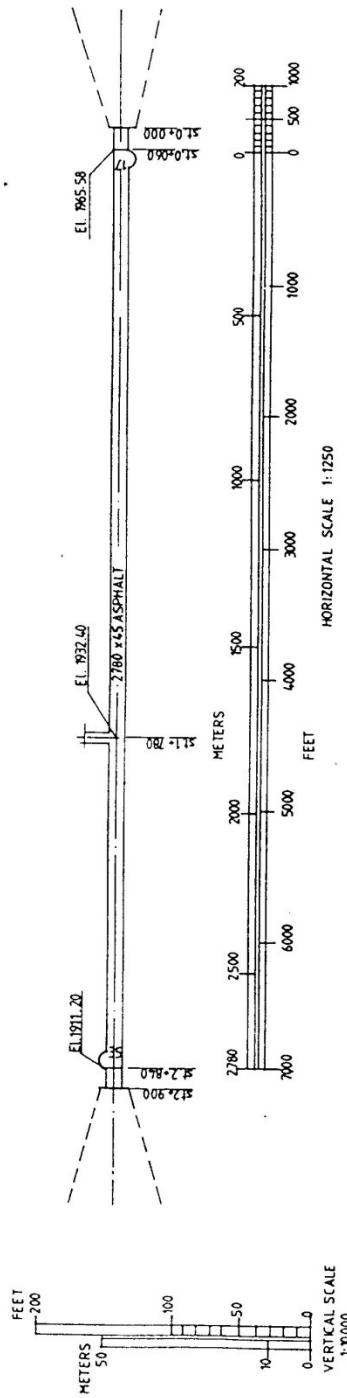
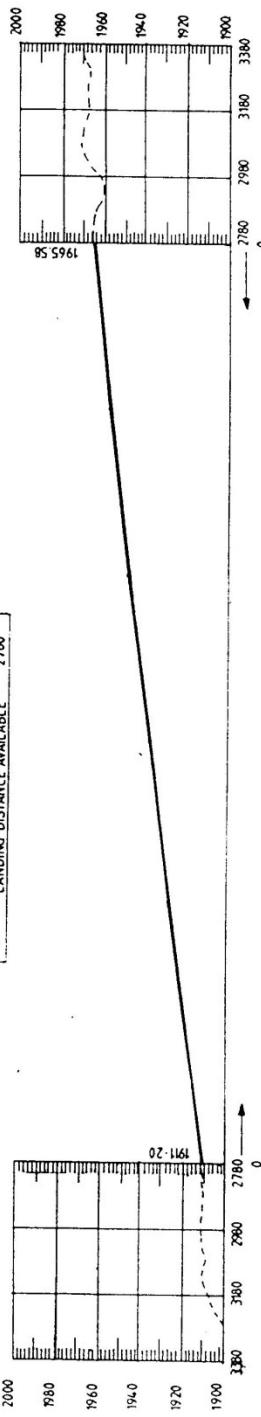
Aerodrome Obstacle Chart - ICAO.....	AD2 HAGN 5
Visual Approach Chart - ICAO	AD2 HAGN 6
Aerodrome Chart- ICAO	AD2 HAGN 7
Standard Arrival Chart Instrument (STAR)-ICAO.....	AD2 HAGN 8
Instrument approach chart ICAO RNAV GPS RWY 35.....	AD2 HAGN 9
Standard Instrument Departure chart-ICAO RNAV GPS RWY 17..	AD2 HAGN 10

AIP ETHIOPIA

**AERODROME OBSTACLES CHART - TC
TYPE A (OPERATING IMITATION)**

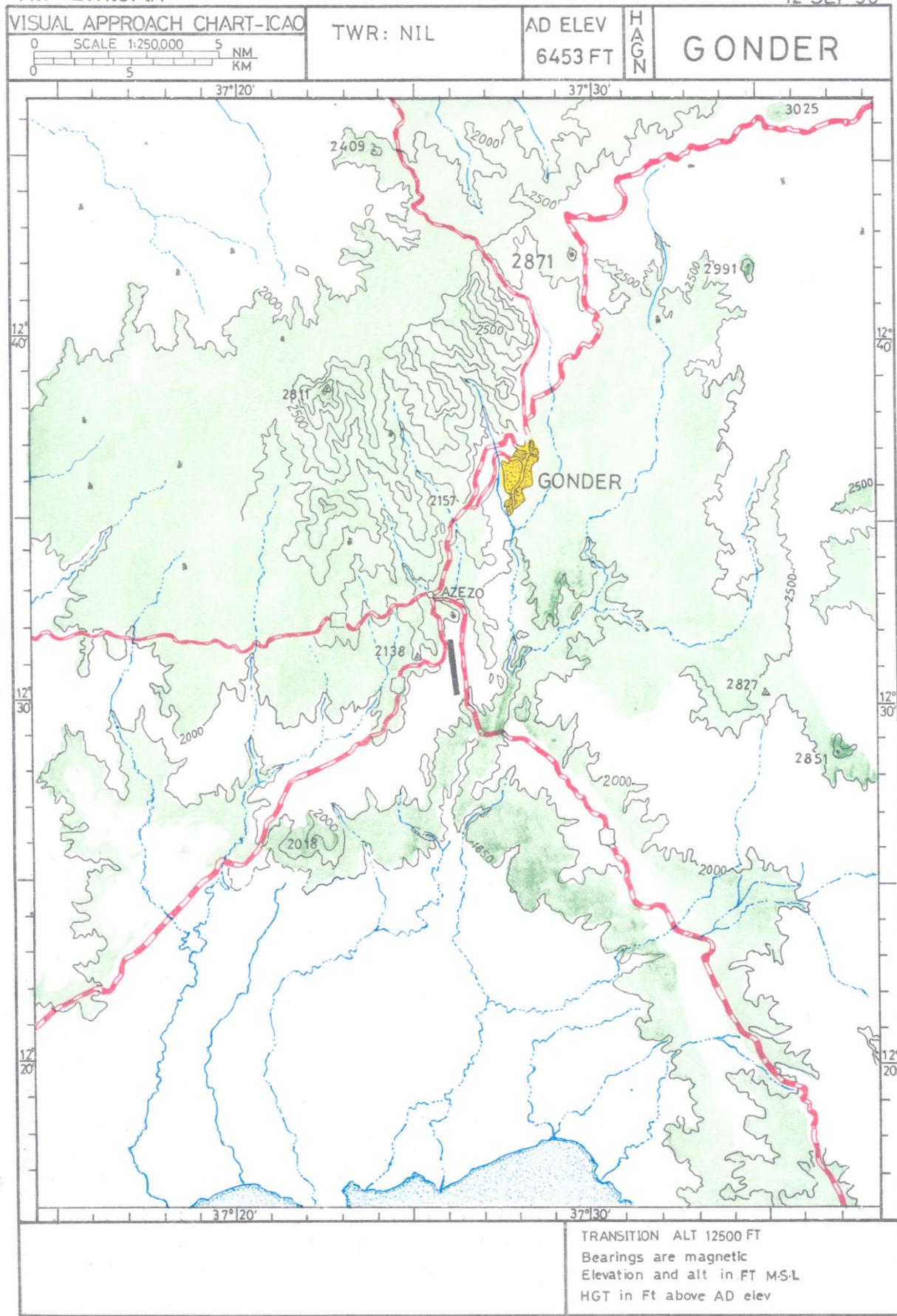
ELEVATIONS AND DIMENSION IN METRES
BEARINGS ARE MAGNETIC
VAR 2 3° F. 1905

DECLARED DISTANCE	RWY 35
RWY 17	
2780	TAKE-OFF RUN AVAILABLE
2840	TAKE-OFF DISTANCE AVAILABLE
2840	ACCELERATE STOP DISTANCE AVAILABLE
2780	LANDING DISTANCE AVAILABLE



Civil Aviation Authority
Addis Ababa

AMENDMENT 1/02



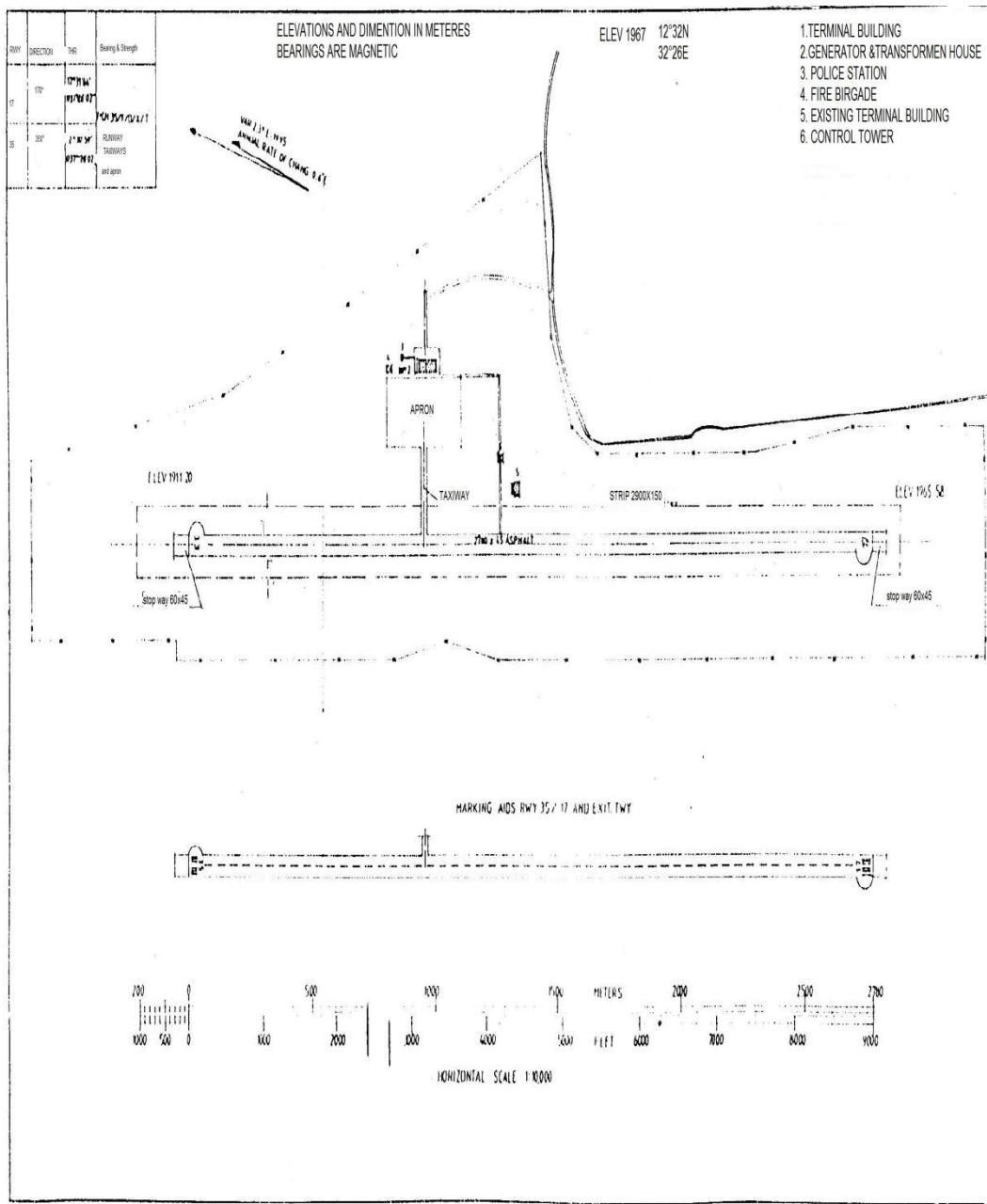
AD2 HAGN 7
02 FEB 06

AIP ETHIOPIA

Aerodrome chart ICAO

Gonder Ethiopia

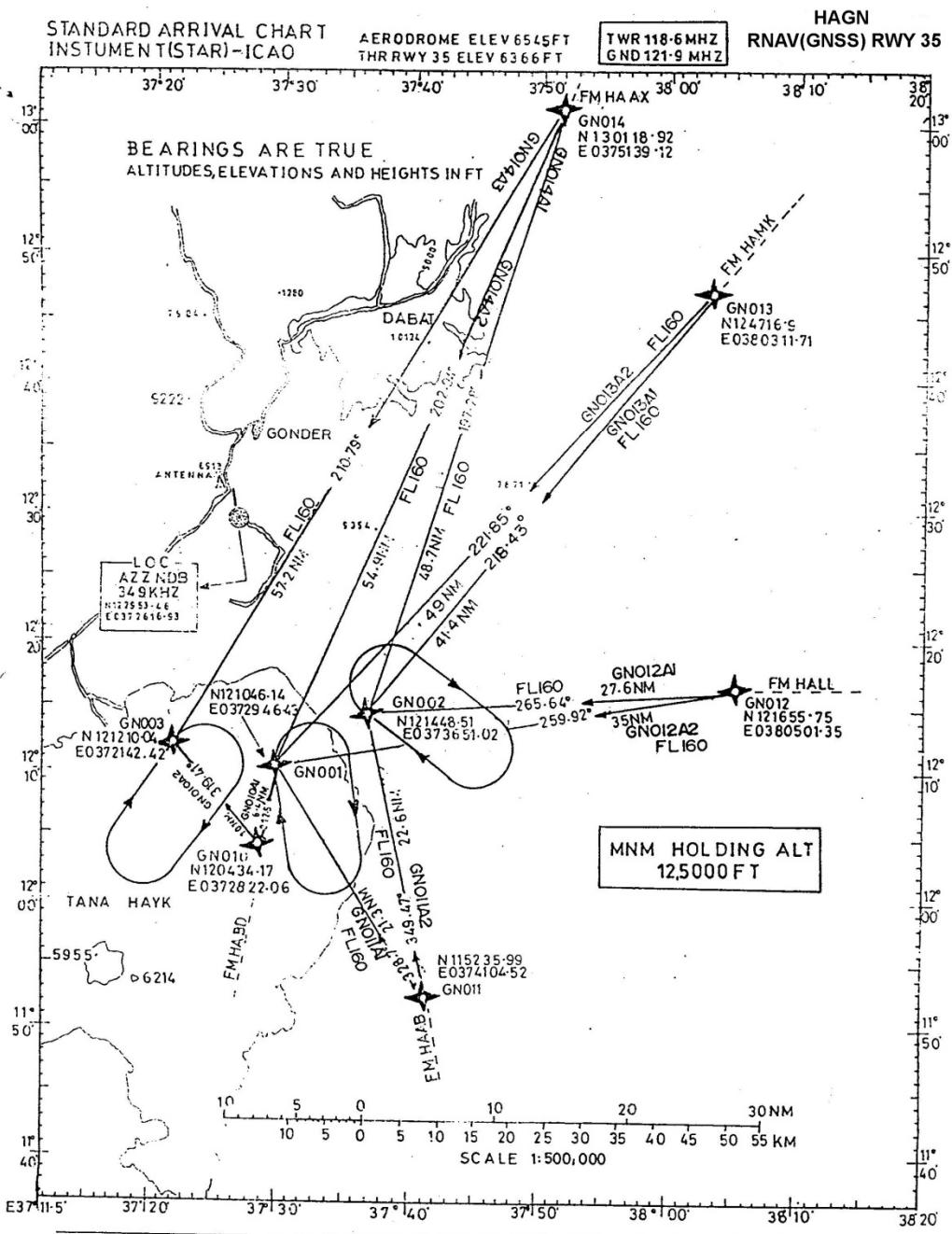
GONDER Azezo



AD2 HAGN 8

25 JUN 15

AIP ETHIOPIA

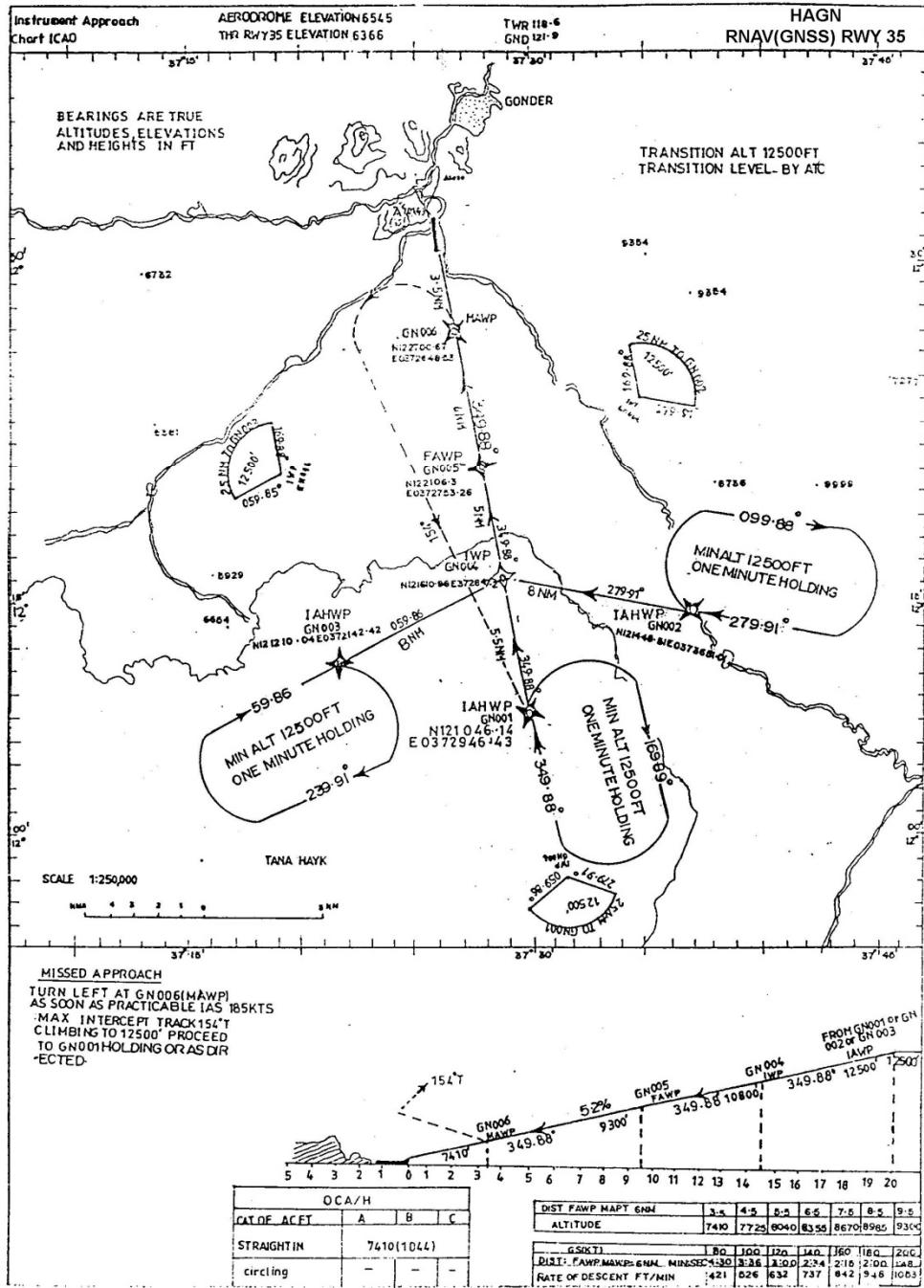


Civil Aviation Authority Addis Ababa

Amendment 1/15

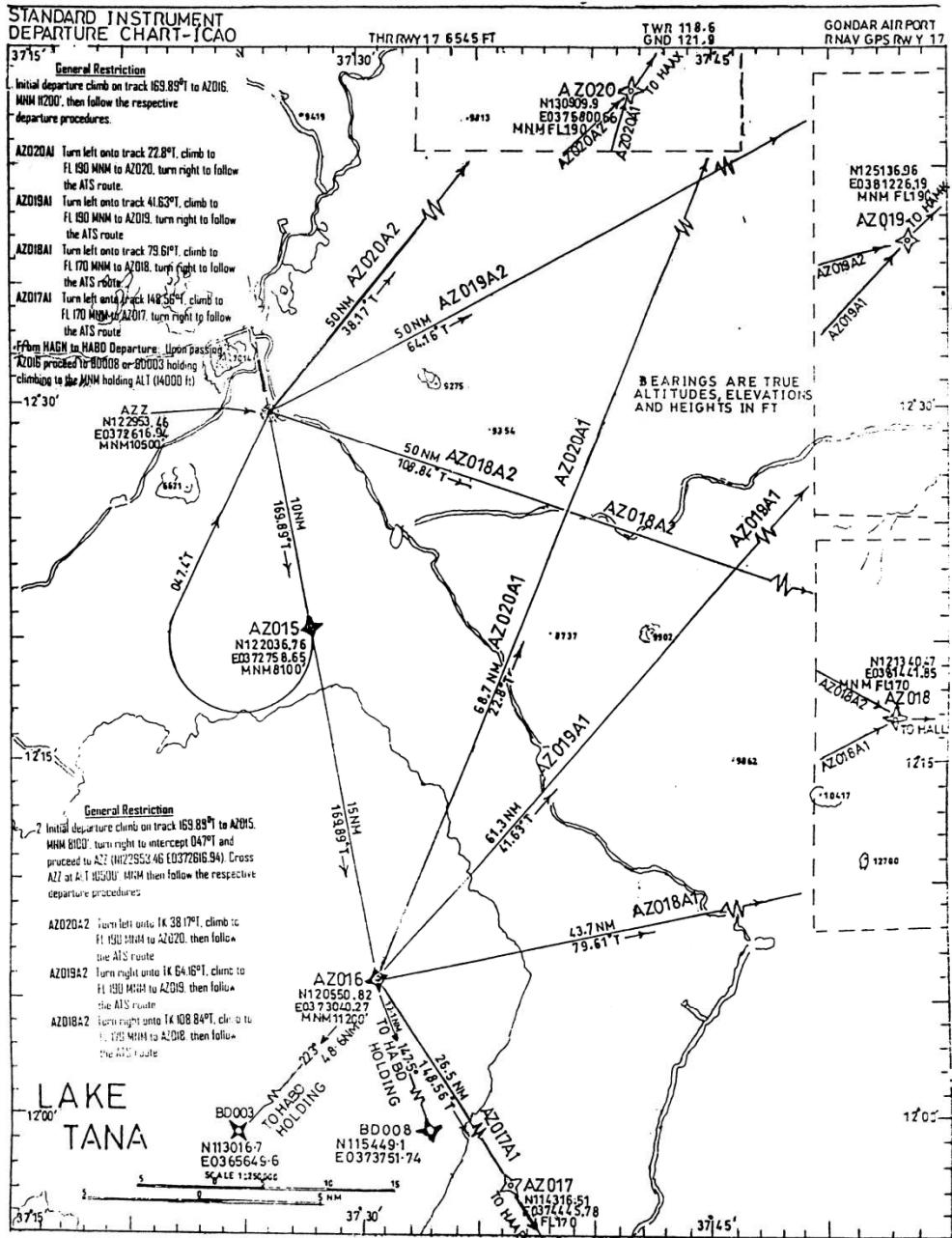
AD 2-HAGN-9
25 JUN 15

AIP ETHIOPIA



Civil Aviation Authority Addis Ababa

Amendment 1/15



AD2-AERODROMES**HAGO-GODE****AD2-1. AERODROME LOCATION INDICATOR AND NAME**

1	<i>Location name</i>	GODE
2	<i>Airport name</i>	GODE
3	<i>ICAO location indicator</i>	HAGO

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP coordinates and site at AD</i>	055606.4589N 0433442.8473E (Calculated point)
2	<i>Direction and distance from city</i>	South east of the Gode Town, 1 KM
3	<i>Elevation/reference temperature</i>	254.169m (Ellipsoidal height)/35°C
4	<i>MAG VAR/Annual change</i>	
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	<u>Gode Airport Administration</u> Postal Address Telephone:- 251-251257760006 Airport Manager E-mail: eaeddia@ethionet.et P.O.Box. 64 Gode Ethiopia
6	<i>Types of traffic permitted</i>	VFR
7	<i>Remarks</i>	Nil

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	0500 – 1400 UTC
2	<i>Customs and Immigration</i>	Nil
3	<i>Health and Sanitation</i>	Nil
4	<i>AIS Briefing Office</i>	Nil
5	<i>ATS Reporting Office</i>	Nil
6	<i>Met Briefing Office</i>	During airport operation hours
7	<i>ATS</i>	0500 – 1400 UTC DAYILY EXCEPT MON (*)
8	<i>Fueling</i>	Nil
9	<i>Handling</i>	Nil
10	<i>Security</i>	0500 – 1400 UTC DAYILY EXCEPT MON (*)
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	* see NOTAM or AIP SUP for latest Ethiopian Airlines flight SKED. For non-SKED flights prior arrangement is required..

AD2-4. HANDLING SERVICES AND FACILITIES Nil**AD2-5. PASSENGER FACILITIES**

- 5.1 Hotels, restaurant and medical facilities: In town
- 5.2 Transportation available: Nil (*by personal arrangement*)
- 5.3 Bank and Post office: In town.

AD2.6. RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT6
2	<i>Rescue equipment</i>	One Foam tender
3	<i>Capability for removal of disabled aircraft</i>	Nil
4	<i>Remarks</i>	6 Trained personnel

AD2.7. SEASONAL AVAILABILITY-CLEARING - AD available at all seasons

AD 2-HAGO-2

02 FEB 06

AIP ETHIOPIA

AD2-8. APRONS, TAXIWAYS AND CHECK LOCATIONS DATA

1	<i>Apron Surface and Strength</i>	Surface: Asphalt concrete Strength: PCN20/R/B/W/U
2	<i>Taxiway width, Surface and Strength</i>	Width: 12M Surface: Asphalt concrete Strength: PCN 50/R/B/W/U
3	<i>ACL Location and Elevation</i>	Nil
4	<i>VOR/INS Check points</i>	Nil
5	<i>Remarks</i>	Nil

AD2.9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	<i>Use of aircraft stand ID signs TWY Guide lines and visual docking/parking Guidance system of aircraft stands</i>	Nil
2	<i>RWY and TWY markings and LGT</i>	<i>RWY markings:</i> THR, Centerline & edge <i>RWY LGT:</i> NIL <i>TWY markings:</i> THR, Centerline & edge <i>TWY LGT:</i> NIL
3	<i>Stop bars</i>	Nil
4	<i>Remarks</i>	Nil

AD2.10. AERODROME OBSTACLES - Clear on both sides.

AD2.11. METEOROLOGICAL INFORMATION PROVIDED - Available during operational hours

1	<i>Associated MET office</i>	Gode Met. Station
2	<i>Hours of service Met Office outside hours</i>	13 Hrs -
3	<i>Office responsible for TAF preparation Periods of validity</i>	BOLE Met. Office As per local flight schedule
4	<i>Type of landing forecast Interval of issuance</i>	As requested
5	<i>Briefing/consultation provided</i>	Nil
6	<i>Flight documentation Language(s) used</i>	
7	<i>Charts and other information available for briefing consultation</i>	
8	<i>Supplementary equipment available for providing information</i>	
9	<i>ATS units provided with information</i>	
10	<i>Additional Information</i>	

AD2.12. RUNWAY PHYSICAL CHARACTERISTICS

<i>Designations RWY NR</i>	<i>True & magnetic bearing</i>	<i>Dimensions of RWY (M)</i>	<i>Strength & surface of RWY and SWY</i>	<i>T H R coordinates</i>	<i>THR elevation & Highest elevation of TDZ of Precision APP RWY</i>
1	2	3	4	5	6
04	040°.3 T 040°M	2400x35	PCN 50/F/C/X/T Asphalt concrete, the first 55mts of two ends are cement concrete	05 55 35.4876N 043 34 18.0705E	250.418m
22	220°.3T 220° M			05 56 33.6191N 043 35 04.5740E	254.169m
<i>Slope of RWY/SWY</i>	<i>SWY dimension (M)</i>	<i>CWY dimension (M)</i>	<i>Strip dimension (M)</i>	<i>Obstacle free zone</i>	<i>Remark</i>
7	8	9	10	11	12
FLAT	60	Nil	2400X35	Nil	
FLAT	60	Nil			

AD2-13. DECLARED DISTANCES

<i>RWY Designator</i>	<i>TORA(M)</i>	<i>TODA(M)</i>	<i>ASDA(M)</i>	<i>LDA(M)</i>	<i>Remarks</i>
1	2	3	4	5	6
04	2400	2460	2460	2400	Nil
22	2400	2460	2460	2400	Nil

AD2-14. APPROACH AND RUNWAY LIGHTING ----- Nil

AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY ----- Nil

AD2-16. HELICOPTER LANDING AREA----- Nil

AD2-17. ATS AIRSPACE ----- Nil

AD2-18. ATS COMMUNICATION FACILITIES

<i>Service</i>	<i>Call Sign</i>	<i>Frequency</i>	<i>Coordinates</i>	<i>Emission</i>	<i>Hours of Operation</i>	<i>Remarks</i>
1	2	3	4	5	6	7
TWR	Gode Tower			A3	0400-1500	7 Watts
SMC	Gode	121.9MHZ		A3	0400-1500	7 Watts Domestic use
	Ground	7595KHZ 121.5MHZ				50 Watts Emergency

AD 2-HAGO-4

23 JUL 16

AIP ETHIOPIA

AD2-19. RADIO NAVIGATION AND LANDING AIDS.

Type	Ident	Frequency	Coordinates	Emission	Hours of Operation	Remarks
1	2	3	4	5	6	7
NDB	GO	382KHZ	055552.98N 433416.98E	A2	0400-1500	POWER 100 Watts Coverage 50 NM

AD2-18. ATS COMMUNICATION FACILITIES----- Nil

AD2-19. RADIO NAVIGATION AND LANDING AIDS----- Nil

AD2-20. LOCAL TRAFFIC REGULATIONS----- Nil

AD2-21. NOISE ABATEMENT PROCEDURES ----- Nil

AD2-22. FLIGHT PROCEDURES ----- Nil

AD2-23. ADDITIONAL INFORMATION ----- Nil

AD2-24. CHARTS RELATED TO AN AERODROME ----- Nil

AD 2-AERODROMES**HAHU- HUMERA****AD2-1. AERODROME LOCATION INDICATOR AND NAME**

1	<i>Location Name</i>	HUMERA
2	<i>Airport Name</i>	Humera Airport
3	<i>ICAO Location Indicator</i>	HAHU

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP Coordinates and Site at AD</i>	0135124N 365220E
2	<i>Directional and distance from city</i>	76 km south from Humera town
3	<i>Elevation/Reference temperature</i>	-
4	<i>MAG VAR/Annual Change</i>	-
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	Telephone 251-0914 70 55 16 airport manager
6	<i>Types of traffic permitted</i>	VFR
7	<i>Remarks</i>	*Coordinates are not in WGS-84 reference

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	0500-1400 UTC, MON and FRI. Other time on request
2	<i>Customs and immigration</i>	Nil
3	<i>Health and Sanitation</i>	Nil
4	<i>AIS Briefing Office</i>	Nil
5	<i>ATS reporting Office</i>	Nil
6	<i>Met Briefing Office</i>	Nil
7	<i>ATS</i>	Nil
8	<i>Fueling</i>	Nil
9	<i>Handling</i>	Available during operational hours of E.A.L.
10	<i>Security</i>	0500-1400 on request
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	Nil

AD2-4. HANDLING SERVICES AND FACILITIES: during operational Hours (EAL)**AD2-5. PASSENGER FACILITIES**

5.1 Hotels, restaurant and medical facilities: In town

5.2 Transportation available: private transport by own arrangement

AD2-6. RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT5
2	<i>Rescue Equipment</i>	
3	<i>Capability for removal of disabled aircraft</i>	
4	<i>Remarks</i>	

AD2-7. SEASONAL AVAILABILITY-CLEARING: - AD available at all season.**AD2-8. APRONS, TAXIWAYS AND CHECK LOCATIONS DATAavailable****AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS:-RWY markings:-THR and Centerline marked**

AD2-8. APPRONS, TAXIWAYS AND CHECK LOCATION DATA

2	<i>Apron Surface and Strength</i>	<i>Surface: asphalt concrete Strength: PCN 100</i>
2	<i>Taxiway width, Surface and Strength</i>	<i>Surface: asphalt concrete Width: 23m length: 175m</i>
3	<i>ACL Location and Elevation</i>	<i>Nil</i>
4	<i>VOR/INS Check points</i>	<i>Nil</i>
5	<i>Remarks</i>	<i>Nil</i>

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS:-TWY markings:- marked**AD2-10. AERODROME OBSTACLES:** - Clear on both sides of the strip.**AD2-11. METEOROLOGICAL INFORMATION PROVIDED NIL****AD2-12. RUNWAY PHYSICAL CHARACTERISTICS**

<i>Designations RWY NR</i>	<i>True & Magnetic Bearing</i>	<i>Dimensions of RWY (m)</i>	<i>Strength and Surface of RWY and SWY</i>	<i>TH R Coordinates</i>	<i>The elevation and Highest elevation of TDZ of Precision APP RWY</i>
1	2	3	4	5	6
13	132°	3000X45	Asphalt concrete and 300m cement concrete.(rigid pav.)at the end PCN 100	13°50'24"N 36°52'20"E	776
31	313°	3000X45	"	134918N 365328E	786
<i>Slope of RWY/SWY</i>	<i>SWY Dimension (M)</i>	<i>CWY Dimension (M)</i>	<i>Strip Dimension (M)</i>	<i>Obstacle Free Zone</i>	<i>Remarks</i>
7	8	9	10	11	12
Nil	Nil	Nil	2010X90	Nil	*Coordinates are not in WGS-84 reference

AD2-13. DECLARED DISTANCES

<i>RWY Designator</i>	<i>TORA(M)</i>	<i>TODA(M)</i>	<i>ASDA(M)</i>	<i>LDA(M)</i>	<i>Remarks</i>
1	2	3	4	5	6
13	3000	3060	3120	2850	
31	3000	3060	3120	2850	

AD2-14. APPROACH AND RUNWAY LIGHTING Nil**AD2- 15. OTHER LIGHTING, SECONDARY POWER SUPPLY** Nil**AD2- 16. HELICOPTER LANDING AREA.....** Nil**AD2-17. ATS AIRSPACE** Nil**AD2-18. ATS COMMUNICATION FACILITIES** Nil**AD2-19. RADIO NAVIGATION AND LANDINGS AIDS** Nil**AD2-20. LOCAL TRAFFIC REGULATIONS.....** Nil**AD2-21. NOISE ABATEMENT PROCEDURES** Nil**AD2-22. FLIGHT PROCEDURES.....** Nil**AD2-23. ADDITIONAL INFORMATION.....** Nil**AD2-24. CHARTS RELATED TO AN AERODROME** Nil

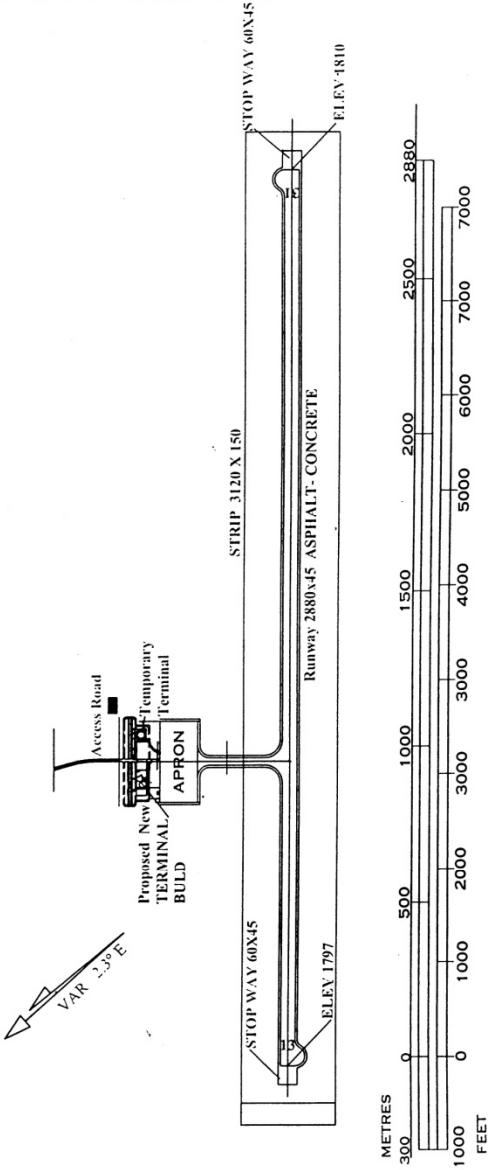
Aerodrome chart ICAO..... AD2 HAHU-3

Aerodrome Obstacle chart ICAO..... AD2 HAHU-4

AIP ETHIOPIA AERODROME CHART -ICAO **13°49'18"E ELEV 786 m AD2 HAHU-3**
03 JUN 10

RWY	DIRECTION	THR	BEARING STRENGTH
13	132 (T)	13°50'24"E 36°52'20"E	ASPHALT CONCRETE & 30mm CEMENT CONCRETE, RIGID PAVEMENT) AT THE END. PCN 60
31	313 (T)	13°49'18"E 36°53'28"E	

ELEVATIONS AND DIMENSION IN METRES
BEARINGS ARE MAGNETIC

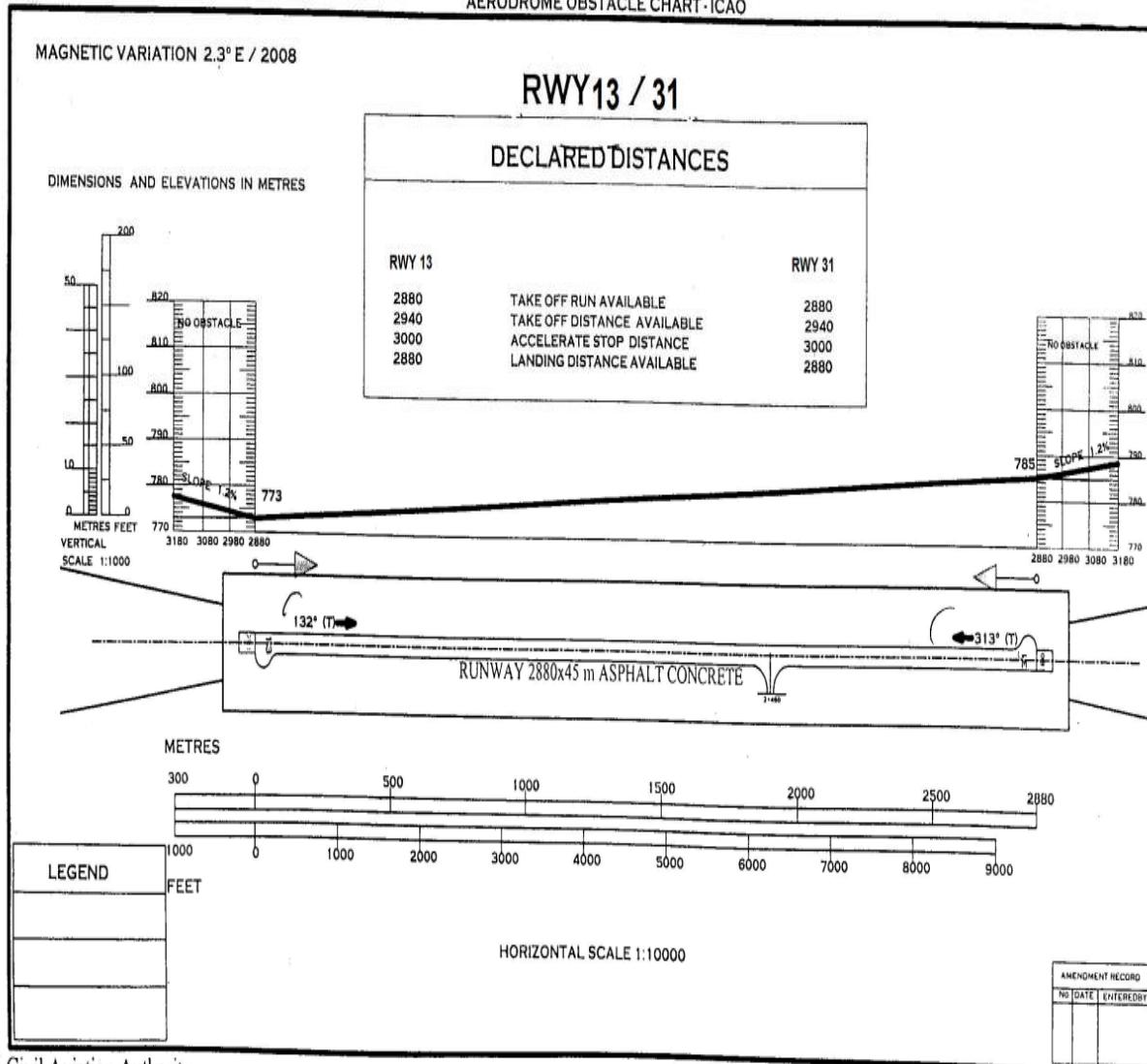


Civil Aviation Authority
Addis Ababa

Amendment 1/10

03 JUN 10

AERODROME OBSTACLE CHART - ICAO



AD 2-AERODROMES
HAJJ – JIGJIGA GARAD WILWAL AIRPORT

AD2-1. AERODROME LOCATION INDICATOR AND NAME

1	<i>Location Name</i>	JigJiga
2	<i>Airport Name</i>	JIGJIGA GARAD WILWAL AIRPORT
3	<i>ICAO Location Indicator</i>	HAJJ

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP Coordinates and Site at AD</i>	091949.18198N 0425439.05857E
2	<i>Directional and distance from city</i>	13 KM South East of Jijiga town
3	<i>Elevation/Reference temperature</i>	1810m FT/30°C
4	<i>MAG VAR/Annual Change</i>	1°E
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	Postal Address: Telephone 251-0257752056 Airport Manager E-mail: eaeddia@ethionet.et Jijiga Airport Administration P.O.Box. 412
6	<i>Types of traffic permitted</i>	VFR
7	<i>Remarks</i>	

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	0400-1500
2	<i>Customs and immigration</i>	Nil
3	<i>Health and Sanitation</i>	Nil
4	<i>AIS Briefing Office</i>	Nil
5	<i>ATS reporting Office</i>	Nil
6	<i>Met Briefing Office</i>	Nil
7	<i>ATS</i>	Nil
8	<i>Fueling</i>	0400-1500
9	<i>Handling</i>	EAL
10	<i>Security</i>	0400-1500
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	Nil

AD2-4. HANDLING SERVICES AND FACILITIES Nil

AD2-5. PASSENGER FACILITIES

- 5.1 Hotels, restaurant and medical facilities, bank and post office, tourist office: In town
5.2 Transportation available: Taxi

AD2-6. RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT 6
2	<i>Rescue Equipment</i>	One foam tender
3	<i>Capability for removal of disabled aircraft</i>	NIL
4	<i>Remarks</i>	7 trained personnel

AD2-7. SEASONAL AVAILABILITY-CLEARING: - AD available at all season.

AD 2-HAJJ-2

26 JUN 14

AIP ETHIOPIA

AD2-8. APRONS, TAXIWAYS AND CHECK LOCATIONS DATA

1	<i>Apron Surface and Strength</i>	Surface: Asphalt concrete Strength: PCN60
2	<i>Taxiway width, Surface and Strength</i>	Width: 23M Surface: Asphalt concrete Strength: PCN 60
3	<i>ACL Location and Elevation</i>	Nil
4	<i>VOR/INS Check points</i>	Nil
5	<i>Remarks</i>	Nil

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM & MARKINGS

1	<i>Use of aircraft stands ID signs TWY Guide lines and visual docking/parking Guidance system of aircraft stands</i>	Yellow apron markings guide aircraft to stands
2	<i>RWY and TWY markings and LGT</i>	<i>RWY markings:</i> designation,THR, Centerline & edge <i>RWY LGT:</i> NIL <i>TWY markings:</i> yellow centerline and holding position <i>TWY LGT:</i> NIL THR, LGT NIL
3	<i>Stop bars</i>	Nil
4	<i>Remarks</i>	Nil

AD2-10. AERODROME OBSTACLES:- Clear on both sides of the strip.**AD2-11. METEOROLOGICAL INFORMATION PROVIDEDNIL****AD2-12. RUNWAY PHYSICAL CHARACTERISTICS**

<i>Designations RWY NR</i>	<i>True & Magnetic Bearing</i>	<i>Dimensions of RWY (m)</i>	<i>Strength and Surface of RWY and SWY</i>	<i>T H R Coordinates</i>	<i>The elevation and Highest elevation of TDZ of Precision APP RWY</i>
1	2	3	4	5	6
03 21	033°(T)032°M 213°(T)212°M	2500 x 45	PCN 60 Asphalt concrete (Rigid pavement at the end)	09 19 20.94285N 042 54 23.46574E 0920 32.26525N 042 55 02.85461E	1795.515M 1783.670M
<i>Slope of RWY/SW Y</i>	<i>SWY Dimension (M)</i>	<i>CWY Dimension (M)</i>	<i>Strip Dimension (M)</i>	<i>Obstacle Free Zone</i>	<i>Remarks</i>
7	8	9	10	11	12
	60X60	Nil	2740X150	Nil	<i>Coordinates are in WGS-84 reference</i>

AD2-13. DECLARED DISTANCES

<i>RWY Designator</i>	<i>TORA(M)</i>	<i>TODA(M)</i>	<i>ASDA(M)</i>	<i>LDA(M)</i>	<i>Remarks</i>
1	2	3	4	5	6
03	2500	2500	2500	2200	
21	2500	2500	2500	2200	

AD2-14. APPROACH AND RUNWAY LIGHTING

Nil

AD2- 15. OTHER LIGHTING, SECONDARY POWER SUPPLY

Nil

AD2- 16. HELICOPTER LANDING AREA.....

Nil

AD2-17. ATS AIRSPACE

Nil

AD2-18. ATS COMMUNICATION FACILITIES

Nil

<i>Service</i>	<i>Call Sign</i>	<i>Frequency</i>	<i>Coordinates</i>	<i>Emission</i>	<i>Hours of Operation</i>	<i>Remarks</i>
1	2	3	4	5	6	7
TWR						
SMC						

AD2-19. RADIO NAVIGATION AND LANDINGS AIDS

Nil

<i>Type</i>	<i>Ident</i>	<i>Frequency</i>	<i>Coordinates</i>	<i>Emission</i>	<i>Hours of Operation</i>	<i>Remarks</i>
1	2	3	4	5	6	7

AD2-20. LOCAL TRAFFIC REGULATIONS.....

Nil

AD2-21. NOISE ABATEMENT PROCEDURES

Nil

AD2-22. FLIGHT PROCEDURES.....

Nil

AD2-23. ADDITIONAL INFORMATION.....

Nil

AD2-24. CHARTS RELATED TO AN AERODROME

Nil

Aerodrome chart ICAO.....AD2 HAJJ-4

Aerodrome Obstacle chart ICAO.....AD2 HAJJ-5

AIP ETHIOPIA

AERODROME CHART -ICAO

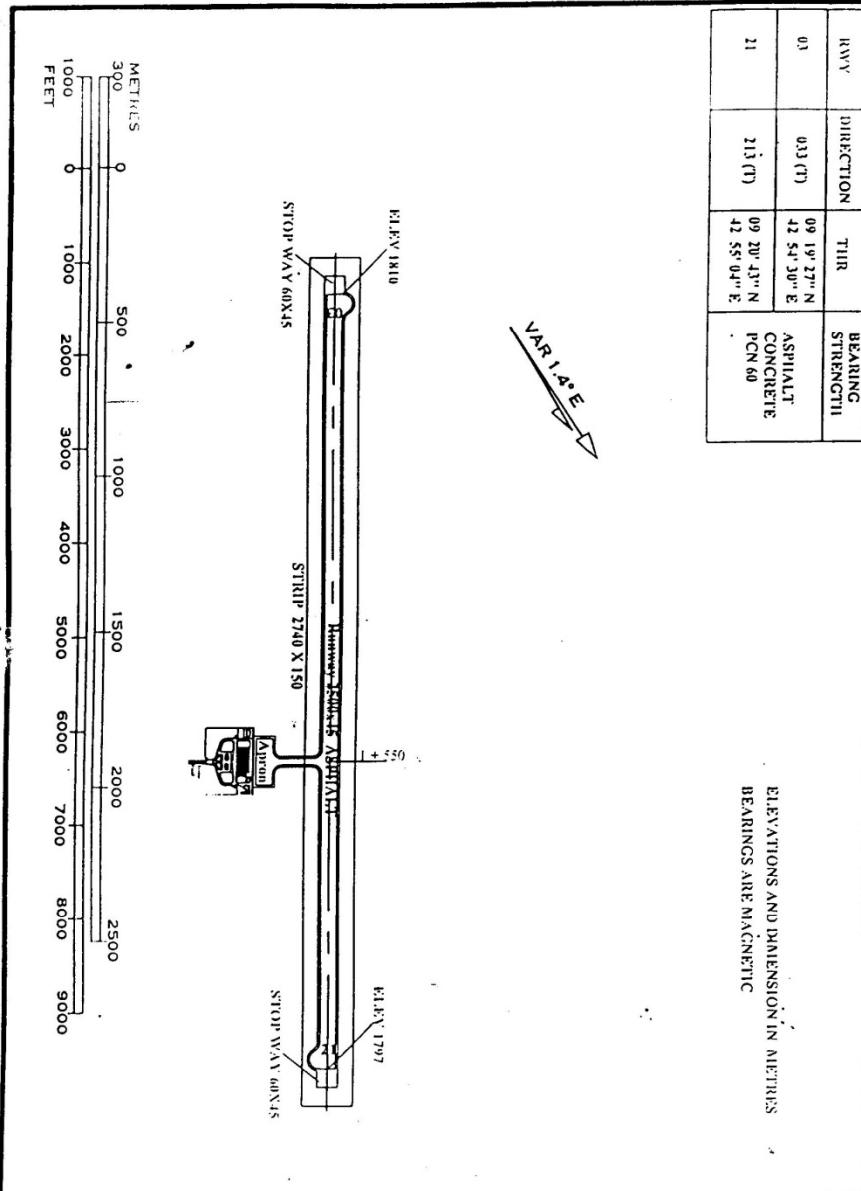
09 19° 27' N
42 54° 30' E

ELEV 1810 m

AD 2-HAJJ-4
16 DEC 10

RUNWAY	DIRECTION	TIR	BEARING STRENGTH
03	033 (T)	09 19° 27' N 42 54° 30' E	ASPHALT CONCRETE PCN 60
21	213 (T)	09 20° 43' N 42 55° 04' E	

ELEVATIONS AND DIMENSIONS IN METRES
BEARINGS ARE MAGNETIC



**CIVIL AVIATION AUTHORITY
AERONAUTICAL INFORMATION SERVICE
P.O.BOX 978
ADDIS ABEBA**

Phone: 251 116650200 Ext 318
AFTN: HAAAYGYX
FAX: (251) -11 - 6650281
E-mail: caa.airnav@ethionet.et

AIP SUP C

C04/18
22 Jun. 18

Jigjiga Airport RNP APCH Instrument Flight Procedure is established

With effect from 19 July 2018 RNP Approach Instrument flight procedure is established for Runway 03 and Runway 21 at Jigjiga (HAJJ) Airport and will be applicable as shown in attachment 1 and 2 .

Fantaye Yacob

Director Aeronautical Information Services.

**INSTRUMENT
APPROACH
CHART**

**AERODROME
ELEV 5935**

**TWR 118.5
GND 121.9**

**JIGJIGA(HAJJ)
RNAV(GNSS) RWY 21**

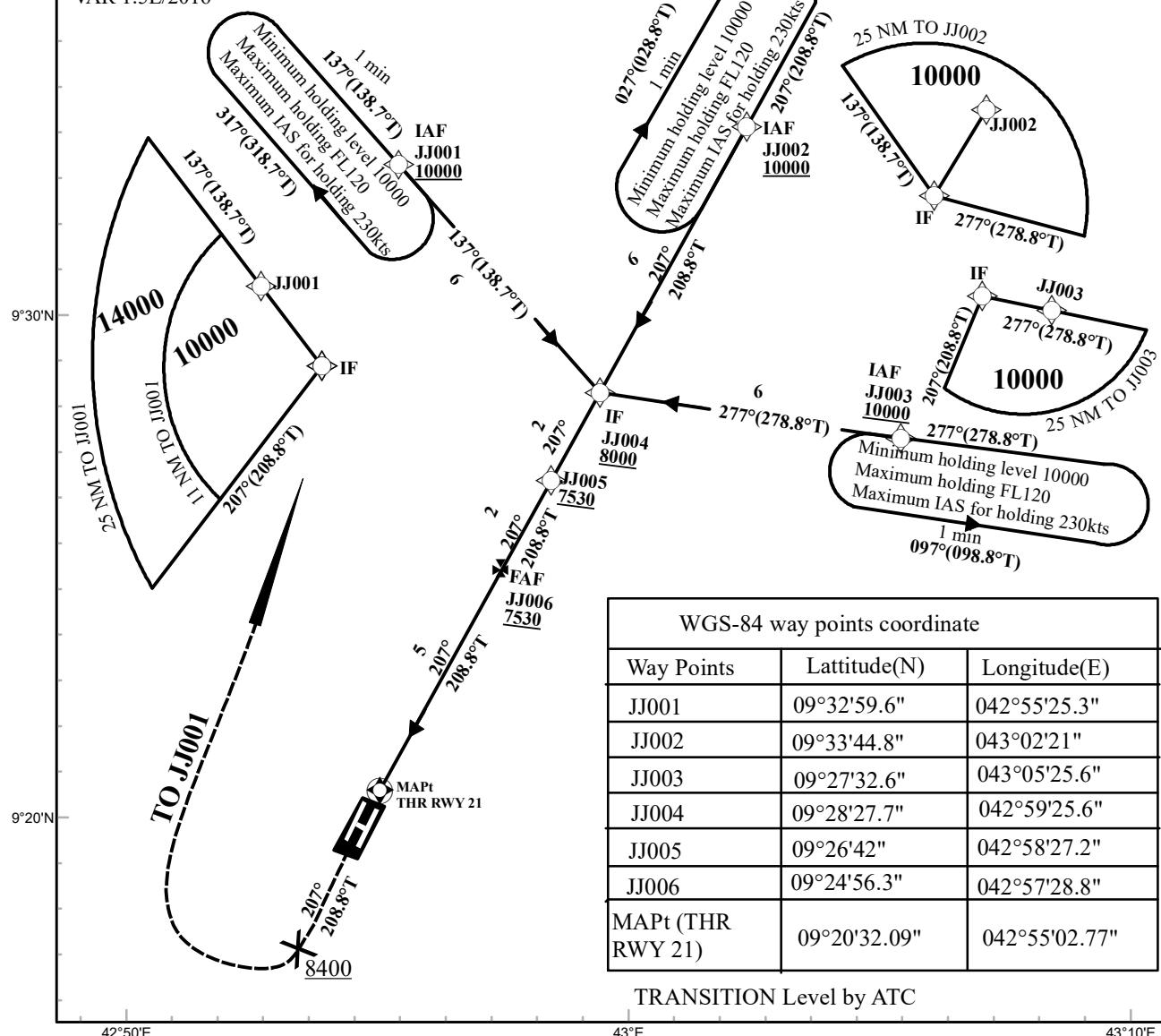
ELEVATION IN FEET

DIST IN NM

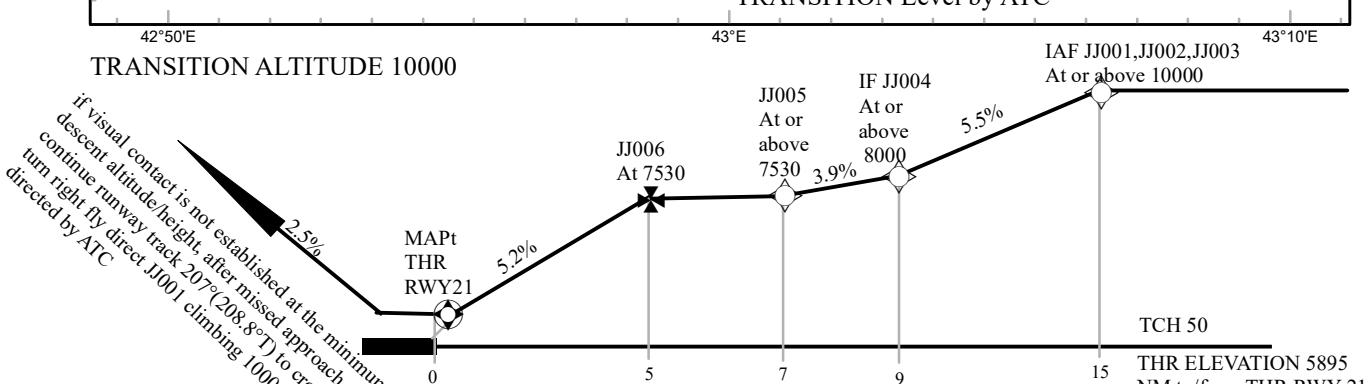
BRG ARE MAGNETIC AND IN BRACKET
TRUE.

VAR 1.5E/2016

RNP APCH and GNSS approval required

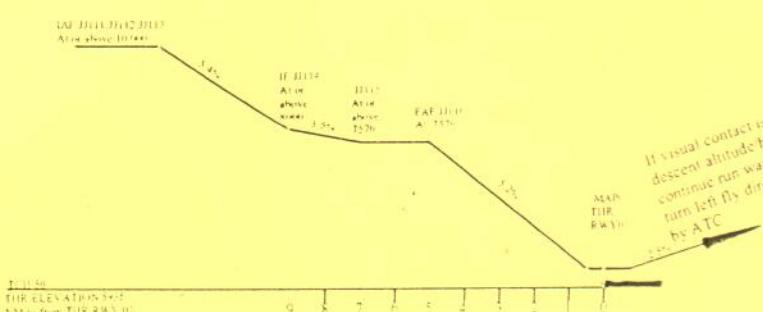
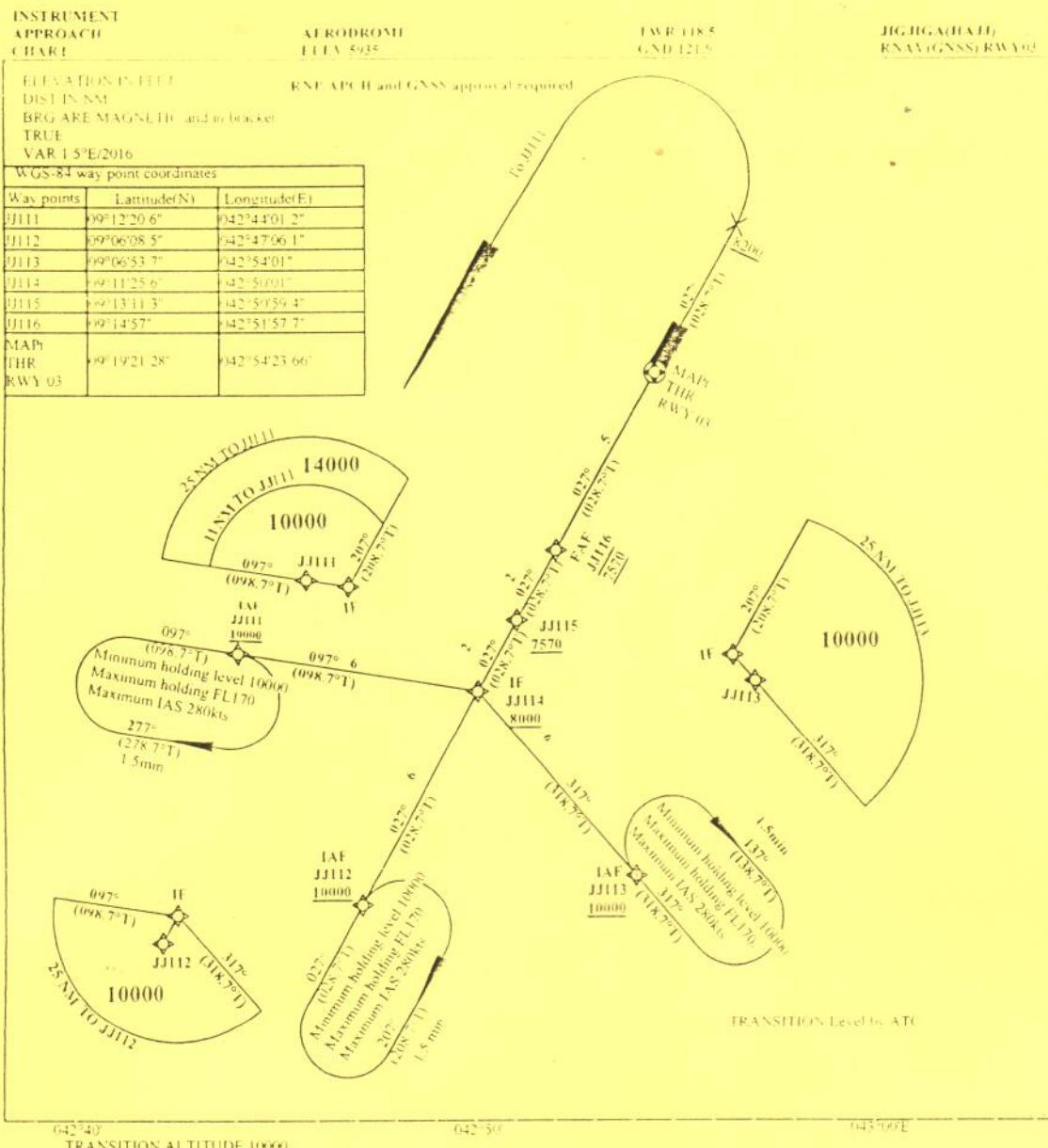


TRANSITION Level by ATC



Scale: 1:250,000

OCA/H	A	B	C	D	GS	Kts	80	100	120	140	160	180	
Straight in Approach	LNAV	6260/365											
Circling		6400 (465)	6430 (495)	6530 (595)	6630 (695)	FAF-MAPt 5NM Rate of descent	Min:sec Ft/min	03:45 424	03:00 530	02:30 636	02:09 742	01:53 848	01:40 954



OCA/H	A	B	C	D	GS	Kts	80	100	120	140	160	180	
Straight in Approach	LNAV	6260/325											
Circling		6400 (405)	6430 (495)	6530 (595)	6630 (695)	FAF-MAPt 5NM	min/sec	03.45	03.00	02.30	02.09	01.53	01.40
						Rate of descent	ft/min	421	530	636	742	848	954

AD 2-HAUJ-5

16 DEC 10

AERODROME OBSTACLE CHART-ICAO

AIP ETHIOPIA

MAGNETIC VARIATION 1.4° E / 2008

RWY 21 / 03

DECLARED DISTANCES

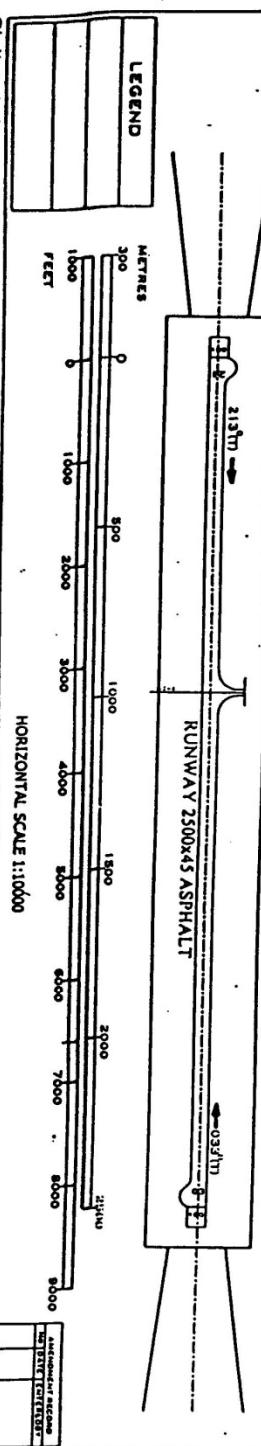
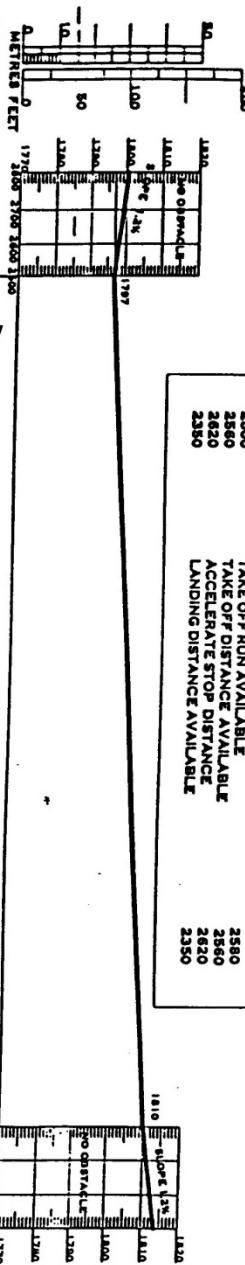
RWY 21

TAKE OFF RUN AVAILABLE
TAKE OFF DISTANCE AVAILABLE
ACCELERATE STOP DISTANCE
LANDING DISTANCE AVAILABLE

2800
2860
2820
2850

2550
2560
2620
2350

RWY 03



Civil Aviation Authority
Addis Ababa

AD2-AERODROMES**HAJM - JIMMA****AD2-1. AERODROME LOCATION INDICATOR AND NAME**

1	<i>Location Name</i>	Jimma
2	<i>Airport Name</i>	Jimma Aba Jifar Aiport
3	<i>ICAO Location Indicator</i>	HAJM

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP coordinates and site at AD</i>	07 40 15.76693N 037 49 33.01962E
2	<i>Direction and distance from city</i>	SW of Town, 2.5KM
3	<i>Elevation/reference temperature</i>	1703.038M(Ellipsoidal height)/23°C
4	<i>MAG VAR/Annual change</i>	2°E (1995) /.6' increase
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	Postal Address: Jimma Aba Jifar Airport P.O.Box 10 Jimma Ethiopia Telephone: 251-471 110187 Manager office 251-471 111434 Fire fighting 251-471 110188 Control Tower Fax- 251-471 122548 E-mail: jimma.ap@ethionet.et
6	<i>Types of traffic permitted</i>	VFR
7	<i>Remarks</i>	NIL

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	0400-1500 UTC
2	<i>Customs and immigration</i>	Nil
3	<i>Health and sanitation</i>	Nil
4	<i>AIS Briefing office</i>	Nil
5	<i>ATS Reporting office</i>	Nil
6	<i>Met Briefing office</i>	0400-1500
7	<i>ATS</i>	0400-1500
8	<i>Fueling</i>	0400-1500
9	<i>Handling</i>	Nil
10	<i>Security</i>	0400-1500
11	<i>De-icing</i>	NIL
12	<i>Remarks</i>	NIL

AD2-4. HANDLING SERVICES AND FACILITIES - Limited**AD2-5. PASSENGER FACILITIES**

5.1 Hotel restaurants and medical facilities: In town

5.2 Transportation available: Taxis

AD2-6. RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT 5	
2	<i>Rescue equipment</i>	foam tender	
3	<i>Capability for removal of disabled aircraft</i>	Available , 1Mobile crane- 35 tone 2 One wheel cato crane - 50 tone	Addis Mechanical enterprise Tel:0114160303 Addis Ababa. Water works construction Authority. Tel:0114340604 Addis Ababa
4	<i>Remarks</i>	15 Trained personnel	

Additional companies are available in Addis Ababa, which have necessary equipments for the recovery of disable aircrafts: Addis Mechanical enterprise Mobile crane 35 tone. Tel: 0114160303.

Lalibella enterprise and construction Mobile crane 40 tone. Tel: 0114653000.

Awash construction enterprise. Mobile cato crane 45 tone. Tel: 0114164460

AD 2-HAJM-2

27 JUN 13

AIP ETHIOPIA

AD2-7. SEASONAL AVAILABILITY-CLEARING

1	<i>Types of clearing equipment</i>	Nil
2	<i>Clearance priorities</i>	Nil
3	<i>Remarks</i>	AD available all seasons

AD2-8. APRONS, TAXIWAYS AND CHECK LOCATIONS DATA Nil**AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS**

1	<i>Use of aircraft stand ID signs TWY guide Lines and visual docking/parking guidance system of aircraft stands</i>	Nil
2	<i>RWY and TWY markings and LGT</i>	<i>RWY markings:</i> THR, centerline & edge marked <i>RWY LGT:</i> Nil <i>TWY marking:</i> Centerline & holding positions marked <i>RWY LGT:</i> Nil
3	<i>Stop bars</i>	Nil
4	<i>Remarks</i>	Nil

AD2-10. AERODROME OBSTACLES Nil**AD2-11. METEOROLOGICAL INFORMATION PROVIDED**

1	<i>Associated MET office</i>	Jimma Met. Station
2	<i>Hours of service Met office outside hours</i>	12 Hrs as agreed with the concerned
3	<i>Office responsible for TAF preparation periods of validity</i>	Bole Met. Office as per local flight schedule
4	<i>Type of landing forecast interval of issuance</i>	METAR,SPECI hourly 0bs
5	<i>Briefing/consultation provided</i>	
6	<i>Flight documentation language(s) used</i>	
7	<i>Charts and other information available for briefing consultation</i>	
8	<i>Supplementary equipment available for providing information</i>	Digital wind display system
9	<i>ATS units provided with information</i>	TWR
10	<i>Additional information</i>	Recent weather

AD2-12. RUNWAY PHYSICAL CHARACTERISTICS

<i>Designations RWY NR</i>	<i>True & magnetic bearing</i>	<i>Dimensions of RWY (M)</i>	<i>Strength and surface of RWY and SWY</i>	<i>THR coordinates</i>	<i>THR elevation and highest elevation of TDZ of precision APP RWY</i>
1	2	3	4	5	6
13 31	132°T 130°M 312°T 310°M	3420x45	Asphalt concrete PCN jm-80	07 40 11N 036 48 28E 07 39 10N 036 49 56E	1715 1709
<i>Slope of RWY/SWY</i>	<i>SWY dimension (M)</i>	<i>CWY dimension (M)</i>	<i>Strip dimension (M)</i>	<i>Obstacle free zone</i>	<i>Remarks</i>
7	8	9	10	11	12
FLAT	NIL	NIL	2120X120	NIL	*Coordinates are not in WGS-84 reference

AD2-13. DECLARED DISTANCES

<i>RWY Designator</i>	<i>TORA(M)</i>	<i>TODA(M)</i>	<i>ASDA(M)</i>	<i>LDA(M)</i>	<i>Remarks</i>
1	2	3	4	5	6
13	3420	3420	3420	3300	Nil
31	3420	3420	3420	3300	

AD2-14. APPROACH AND RUNWAY LIGHTING Nil**AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY.....** Nil**AD2-16. HELICOPTER LANDING AREA:** - On the apron in front of the terminal building**AD2-17. ATS AIRSPACE**

1	<i>Designation and lateral limits</i>	Jimma CTR circle with a radius of 20NM Centered on JM NDB.
2	<i>Vertical limits</i>	Lower limit: GND Upper limit: 12500ALT
3	<i>Airspace classification</i>	E
4	<i>ATS unit, call sign language(s)</i>	Jimma Tower
5	<i>Transition altitude</i>	12500FT
6	<i>Remarks</i>	Nil

AD2-18. ATS COMMUNICATION FACILITIES

<i>Service</i>	<i>Call Sign</i>	<i>Frequency</i>	<i>Coordinates</i>	<i>Emission</i>	<i>Hours of operation</i>	<i>Remarks</i>
1	2	3	4	5	6	7
TWR	Jimma Tower	118.4MHZ 121.5MHZ	07 40 04.31529N 036 49 02.85151E	A3 A3	0400-1500 0400-1500	50 Watts 50 Watts, Emergency
SMC	Jimma Ground	121.9MHZ 7595KHZ	07 40 04.31529N 036 49 02.85151E	-	0400-1500	50 Watts, Surface Movement Control

AD2-19. RADIO NAVIGATION AND LANDING AIDS

<i>Type</i>	<i>ID</i>	<i>Frequency</i>	<i>Coordinates</i>	<i>Emissio n</i>	<i>Hours of operation</i>	<i>Remarks</i>
1	2	3	4	5	6	7
NDB	JM	263 KHZ	07 40 07.35846N 036 49 17.68233E	A2	0400-1500	Location:105°MAG0.58NM THR RWY 31 Power: 75Watts Coverage: 150NM

AD2-20. LOCAL TRAFFIC REGULATIONS: - Nil**AD2-21. NOISE ABATEMENT PROCEDURES:-** Nil

AD2-7. SEASONAL AVAILABILITY-CLEARING

AD2-22. FLIGHT PROCEDURES

- 1. Instrument approach procedures for Jimma**
1.1 Holding procedures

Holding Point	Inbound track MAG	MNM holding ALT/LEVEL	Turn	Outbound	Remarks
JM NDB	114°	10000FT	Left	1MIN*	CAT A/B ACFT

*1.5 min ABOVE 14000FT.

AD2-23 Additional information
Nil

AD-24 **Charts related to an aerodrome**
Aerodrome Chart-ICAO.....AD2-HAJM-6
Aerodrome Obstacle Chart -ICAO.....AD2-HAJM-7

INTENTIONALLY LEFT BLANK

AD2/HJM-6
12 SEP 96

JIMMA/Aba Sequd

TWR 184
APRON 1219

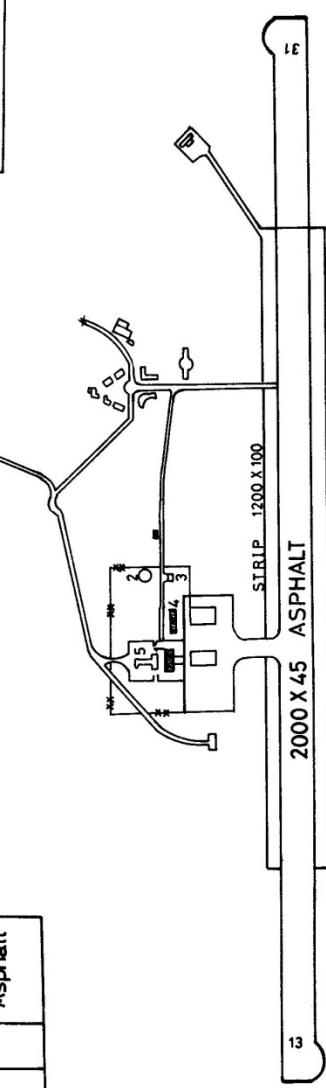
AERODROME CHART ICAO
0740 N
3650 E

ELEVATIONS AND DIMENSIONS IN METRES
BEARINGS ARE MAGNETIC

RWY	DIRECTION	BEARING STRENGTH
13	130°	— LCN-30 h-50 RUNWAY
31	310°	— TAXIWAY APRON Asphalt

1. Terminal Building
2. Water Storage Tank
3. Water Pumping Station
4. Service Bldg
5. Vehicle Parking
6. NDB

LEGEND

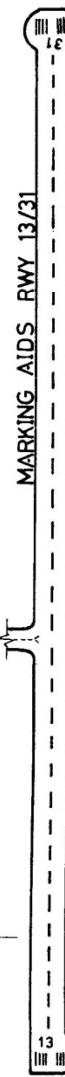


STRIP 1200 X 100

13

2000 X 45 ASPHALT

31



metres
feet

0 500 1000 1500 2000 2500 3000

CIVIL AVIATION AUTHORITY
ADDIS ABABA

AIR ETHIOPIA

ELEVATIONS AND ELEVATIONS IN METRES
REFERENCE ELEVATION
1711 - 1991

AERODROME OBSTACLE CHART - ICAO
THE COOPERATING COUNTRIES

AD 2 HAN 7

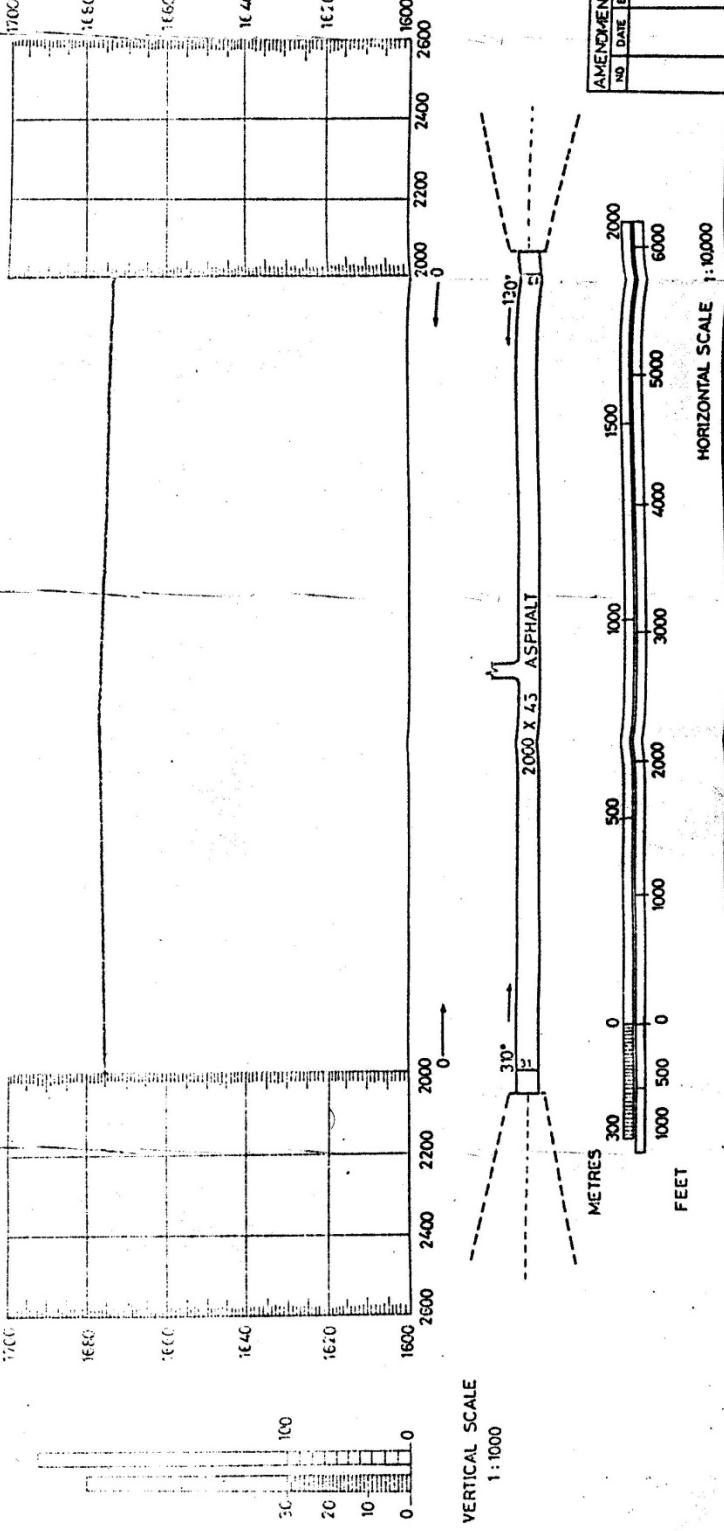
1:50,000

JIMMA / Abeba Segud

RWY 15-33

DECLARED DISTANCE

RWY 15	RWY 33
2000 LAKE CHI RIVER AND ARI	2000
2000 LAKE CHI RIVER AND ARI	2000
2000 ADDIS ABEBA AIRPORT AREA	2000
2000 LAKE CHI RIVER AND ARI	2000



CIVIL AVIATION AUTHORITY
ADDIS ABEBA

2nd Edition

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FAX: (251)-11-6650281
E-mail: caa.airnav@ethionet.et

AIRAC AIP SUP C

03/18
09 MAY 2018

Jimma Airport RNAV GNSS Approach Procedure for Runway 31.

Effective from 21 JUN 2018 RNAV GNSS Approach Procedures established for Runway 31 at Jimma (HAJM) Airport and will be applicable as shown in attachment 1.

Fantaye Yakob

Director, Aeronautical Information Services.

Attachment 1 to AIRAC SUP 03/18

INSTRUMENT APPROACH CHART	AERODROME ELEVATION 5621	TWR 118.4 GND 121.9	JIMMA(HAJM) RNAV(GNSS)RWY 31																																																																	
ELEVATION IN FEET DIST IN NM BRG MAGNETIC and in bracket TRUE. Var2.2°E/2016	RNP APCH approval and GNSS required.	Air craft shall be required capable of simultaneous reception of the flight track and a cross indication. NOT TO SCALE																																																																		
<table border="1"> <thead> <tr> <th>OCA(H)</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>GS</th> <th>Kts</th> <th>80</th> <th>100</th> <th>120</th> <th>140</th> <th>160</th> </tr> </thead> <tbody> <tr> <td>Straight-in approach</td> <td>LNAV</td> <td colspan="3">6200(600)</td> <td>FAF-MAPt 7NM</td> <td>min:sec</td> <td>05:15</td> <td>04:12</td> <td>05:30</td> <td>03:00</td> <td>02:38</td> </tr> <tr> <td></td> <td></td> <td colspan="3"></td> <td>Rate of descent</td> <td>Ft/min</td> <td>425</td> <td>530</td> <td>636</td> <td>742</td> <td>850</td> </tr> <tr> <td>CIRCLING</td> <td></td> <td>6700 (1079)</td> <td>7000 (1379)</td> <td>7500 (1879)</td> <td>7900 (2279)</td> <td>DISTANCE TO DME(NM)</td> <td>7</td> <td>6</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>1</td> <td>0</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>AUTOTIME(RT)</td> <td>7870</td> <td>7550</td> <td>7230</td> <td>6920</td> <td>6600</td> <td>6290</td> <td>5970</td> <td>5650</td> </tr> </tbody> </table>				OCA(H)	A	B	C	D	GS	Kts	80	100	120	140	160	Straight-in approach	LNAV	6200(600)			FAF-MAPt 7NM	min:sec	05:15	04:12	05:30	03:00	02:38						Rate of descent	Ft/min	425	530	636	742	850	CIRCLING		6700 (1079)	7000 (1379)	7500 (1879)	7900 (2279)	DISTANCE TO DME(NM)	7	6	5	4	3	2	1	0						AUTOTIME(RT)	7870	7550	7230	6920	6600	6290	5970	5650
OCA(H)	A	B	C	D	GS	Kts	80	100	120	140	160																																																									
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CIRCLING		6700 (1079)	7000 (1379)	7500 (1879)	7900 (2279)	DISTANCE TO DME(NM)	7	6	5	4	3	2	1	0																																																						
					AUTOTIME(RT)	7870	7550	7230	6920	6600	6290	5970	5650																																																							

AD 2-AERODROMES
HAKD - KEBRI DEHAR

AD2-1. AERODROME LOCATION INDICATOR AND NAME

1	<i>Location Name</i>	Kebri Dehar
2	<i>Airport Name</i>	Kebri Dahaar
3	<i>ICAO Location Indicator</i>	HAKD

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP Coordinates and Site at AD</i>	064350N 0441343E
2	<i>Directional and distance from city</i>	West side of Kebri Dehar town and N of old airstrip
3	<i>Elevation/Reference temperature</i>	2000 FT/30°C
4	<i>MAG VAR/Annual Change</i>	1.5°E (1995) / 6' increasing
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	ETHIOPIAN AIRPORTS ENTERPRISE P.O.BOX 90652 ADDIS ABABA, ETHIOPIA Telephone: 251-11 6650400 E-mail:Bole.a.p@ethionet.et
6	<i>Types of traffic permitted</i>	VFR
7	<i>Remarks</i>	Nil

AD2-3 OPERATIONAL HOURS

1	<i>AD Administration</i>	Nil
2	<i>Customs and immigration</i>	Nil
3	<i>Health and Sanitation</i>	Nil
4	<i>AIS Briefing Office</i>	Nil
5	<i>AIS reporting Office</i>	Nil
6	<i>Met Briefing Office</i>	Nil
7	<i>ATS</i>	Nil
8	<i>Fueling</i>	Nil
9	<i>Handling</i>	Nil
10	<i>Security</i>	Nil
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	Nil

AD2-4. HANDLING SERVICES AND FACILITIES..... Nil**AD2-5. PASSENGER FACILITIES**

5.1 Hotel restaurants and medical facilities: In town

5.2 Transportation available: Taxis

AD2-6. RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT5
2	<i>Rescue Equipment</i>	
3	<i>Capability for removal of disabled aircraft</i>	
4	<i>Remarks</i>	

AD 2-HAKD-2

02 JUN 11

AIP ETHIOPIA

AD2-7. SEASONAL AVAILABILITY-CLEARING – Maintenance should be made after the rain time.

AD2-8. APRONS, TAXIWAYS AND CHECK LOCATIONS DATA Nil

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS:- White washed stone rip-rap marking on both sides of strip.

AD2-10. AERODROME OBSTACLES :- Due to the presence of a ditch on the Northern edge of the strip, cleared bush and excavated material are on the pilots are advised to take extra precaution during landing and take-off.

AD2-11. METEOROLOGICAL INFORMATION PROVIDED:- Mostly prevailing wind is from East .

AD2-12. RUNWAY PHYSICAL CHARACTERISTICS

<i>Designations RWY NR</i>	<i>True & Magnetic Bearing</i>	<i>Dimensions of RWY (m)</i>	<i>Strength and Surface of RWY and SWY</i>	<i>T H R Coordinates</i>	<i>The elevation and Highest elevation of TDZ of Precision APP RWY</i>
1	2	3	4	5	6
08	081.5°T 080°M	1700 x 50	Gravel soil	Nil	Nil
27	261.5°T 260°M				
Slope of RWY/SWY	SWY dimension (M)	CWY dimension (M)	Strip dimension (M)	Obstacle Free Zone	Remarks
7	8	9	10	11	12
-	Nil	Nil	Nil	Nil	Nil
-					

AD2-13 DELCARED DISTANCES

<i>RWY Designator</i>	<i>TORA(M)</i>	<i>TODA(M)</i>	<i>ASD(M)</i>	<i>LDA(M)</i>	<i>Remarks</i>
1	2	3	4	5	6
08	1750	1750	1700	1700	Nil
27	1700	1750	1700	1700	Nil

AD2-14 APPROACH AND RUNWAY LIGHTING Nil

AD2-15 OTHER LIGHTING, SECONDARY POWER SUPPLY Nil

AD2-16 HELICOPTER LANDING AREA Nil

AD2-17 ATS AIRSPACE Nil

AD2-18 ATS COMMUNICATION FACILITIES Nil

AD2-19 RADIO NAVIGATION AND LANDING AIDS Nil

AD2-20 LOCAL TRAFFIC REGULATIONS Nil

AD2-21 NOISE ABATEMENT PROCEDURES Nil

AD2-22 FLIGHT PROCEDURES Nil

AD2-23 ADDITIONAL INFORMATION Nil

AD2-24 CHARTS RELATED TO AN AERODROME Nil

AD 2-AERODROMES**HALL-LALIBELLA****AD 2.1 AERODROME LOCATION INDICATOR AND NAME**

1	<i>Location Name</i>	Lalibella
2	<i>Airport Name</i>	Lalibella
3	<i>ICAO Location Indicator</i>	HALL

AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP Coordinates and Site at AD</i>	115825.87865N 0385928.01740E
2	<i>Directional and distance from city</i>	S of Lalibella town/10km
3	<i>Elevation/Reference temperature</i>	1957.799m 27°C
4	<i>MAG VAR/Annual Change</i>	2.2° E (1995)/0.6' increase
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	Lalibella Airport P.O.Box 55 Lalibela,Ethiopia Telephone: 251 981 19 0045 251 033 836 0010 Manager office 251 981 19 0046 Tower 251 033 836 0009 fire brigade E-mail:Lali airport@gmail.com
	<i>Types of traffic permitted</i>	VFR
7	<i>Remarks</i>	NIL

AD 2.3 OPERATIONAL HOURS

1	<i>AD Administration</i>	0400 -1500
2	<i>Customs and immigration</i>	Nil
3	<i>Health and Sanitation</i>	Nil
4	<i>AIS Briefing Office</i>	Nil
5	<i>ATS reporting Office</i>	Nil
6	<i>Met Briefing Office</i>	Nil
7	<i>ATS</i>	0400 -1500
8	<i>Fueling</i>	Nil
9	<i>Handling</i>	Nil
10	<i>Security</i>	0400-1500
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	Nil

AD 2.4 HANDLING SERVICES AND FACILITIES Nil**AD 2.5 PASSENGER FACILITIES**

5.1 Hotel restaurants and medical facilities: In town

5.2 Transportation available: Taxis

AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT 6
2	<i>Rescue equipment</i>	Two foam tender
3	<i>Capability for removal of disabled aircraft</i>	Nil
4	<i>Remarks</i>	5 Trained personnel

AD 2-HALL-2

25 JUN 15

AIP ETHIOPIA

AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS DATA

1	<i>Apron Surface and Strength</i>	<i>Surface: Asphalt concrete Strength: PCN 30/R/B/W/U</i>
2	<i>Taxiway width, Surface and Strength</i>	<i>Width: 45 Surface: Asphalt concrete Strength: PCN 30/R/B/W/U</i>
3	<i>ACL Location and Elevation</i>	Nil
4	<i>VOR/INS Check points</i>	Nil
5	<i>Remarks</i>	Nil

AD2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	Use of aircraft stand 1D signs TWY guide Lines and visual docking/parking guidance system of aircraft stands	
2	RWY and TWY markings and LGT	RWY: designation ,T HR, touchdown, centerline, edge marked TWY: centerline marked
3	Stop Bars	Nil
4	Remarks	Nil

AD 2.10 AERODROME OBSTACLES: - Clear on both sides of RWY

AD 2.11 METEOROLOGICAL INFORMATION PROVIDED 0400-1500

AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designations RWY NR	True & Magnetic Bearing	Dimensions of RWY (m)	Strength and Surface of RWY and SWY	T H R Coordinates	The elevation and Highest elevation of TDZ of Precision APP RWY
1	2	3	4	5	6
10	095°M	2400x45	Asphalt Concrete	115835.32399N 0385810.45469E	
28	275°M			115826.03414N 0385926.74061E	
Slope of RWY/SWY	SWY Dimension (M)	CWY Dimension (M)	Strip Dimension (M)	Obstacle Free Zone	Remarks
7	8	9	10	11	12
1.46% -1.46%	60 60	Nil 150	2670x150	Nil	Nil

* Slope decrease from RWY 27 to 09

AD 2.13 DECLARED DISTANCES

RWY Designator	TORA(M)	TODA(M)	ASDA(M)	LDA(M)	Remarks
1	2	3	4	5	6
10	2400	2400	2400	2400	NIL
28	2400	2400	2400	2400	

*landing on RWY 28 and take-off on RWY 10 is not recommended.

AIP ETHIOPIA

AD 2.14 APPROACH AND RUNWAY LIGHTING

RWY	Approach Lights Type, Length, Intensity	THD Lights Colour, WBAR	VASIS PAPI	TDZ Length	RWY CL Lights Spacing, Colour, Intensity	RWY Edge Lights Spacing, Colour, Intensity	RWY end LGT Colour WBAR	SWY LGT Length, Colour	RMRKS
1	2	3	4	5	6	7	8	9	10
10	Simple App white 200m high	Green	PAPI left/3°	Nil	Nil	24000m, 60m, 600m yellow the rest	Red	Nil	Nil
28		Nil	Nil	Nil	Nil	24000m, 60m, 600m yellow the rest	Red	Nil	Nil

AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY Available

AD2-16. HELICOPTER LANDING AREA..... Nil

AD2-17. ATS AIRSPACE Nil

AD2-18. ATS COMMUNICATION FACILITIES

Service	Call Sign	Frequency	Coordinates	Emission	Hours of Operation	Remarks
1	2	3	4	5	6	7
TWR	Lalibela Tower	118.5MHZ		A2	0400-1500	50 Watts
Approach		7595				
SMC	Lalibela Ground	121.9MHZ 121.5MHZ		A2	0400-1500	50 Watts 50 Watts Emergency

AD2-19. RADIO NAVIGATION AND LANDINGS AIDS Nil

Type	ID	Frequency	Coordinates	Emission	Hours of operation	Remarks
1	2	3	4	5	6	7
ND B	LLB	390 KHZ	11 58 40.95209N 038 59 00.51661E	A2	0500- 1500	Power: 100 Watts Coverage: 100NM

AD2-20. LOCAL TRAFFIC REGULATIONS Nil

AD2-21. NOISE ABATEMENT PROCEDURES Nil

AD2-22. FLIGHT PROCEDURES Nil

AD2-23. ADDITIONAL INFORMATION Nil

AD2-24. CHARTS RELATED TO AN AERODROME

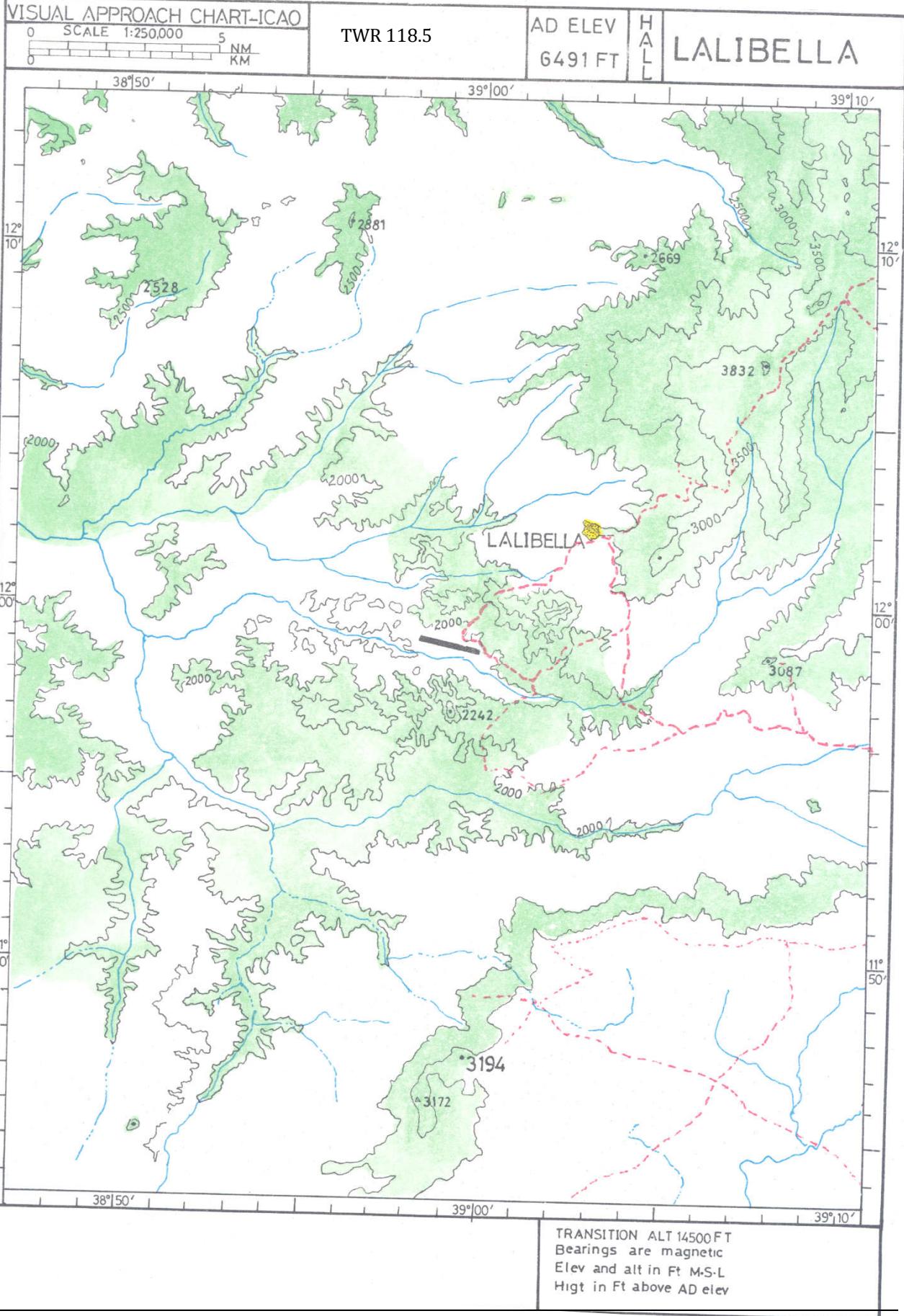
Visual Approach chart - ICAO AD2 HALL-4

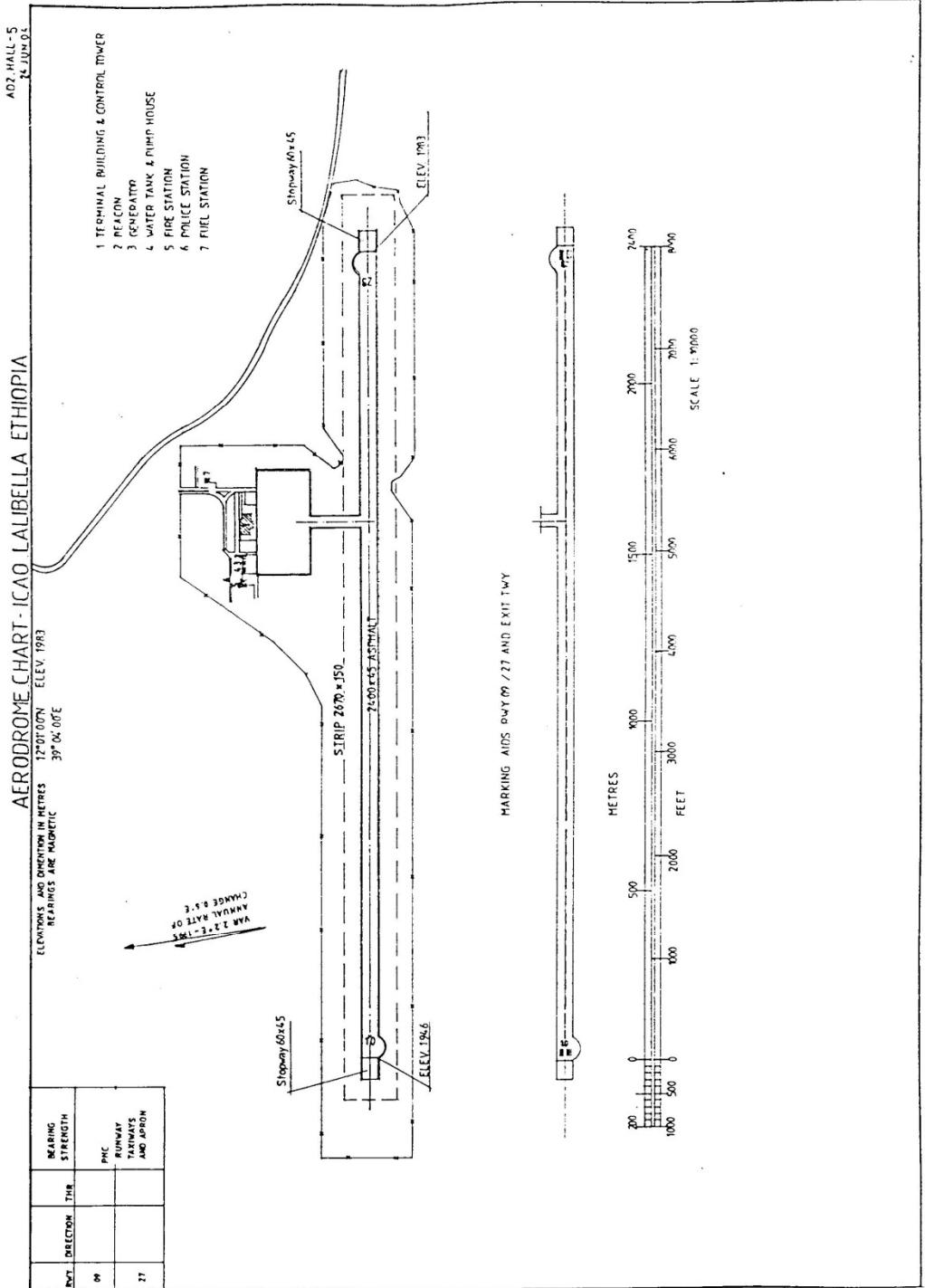
Aerodrome chart ICAO AD2 HALL-5

Aerodrome obstacle chart ICAO AD2 HALL-6

AD2 HALL 4
10 DEC 15

AIP ETHIOPIA



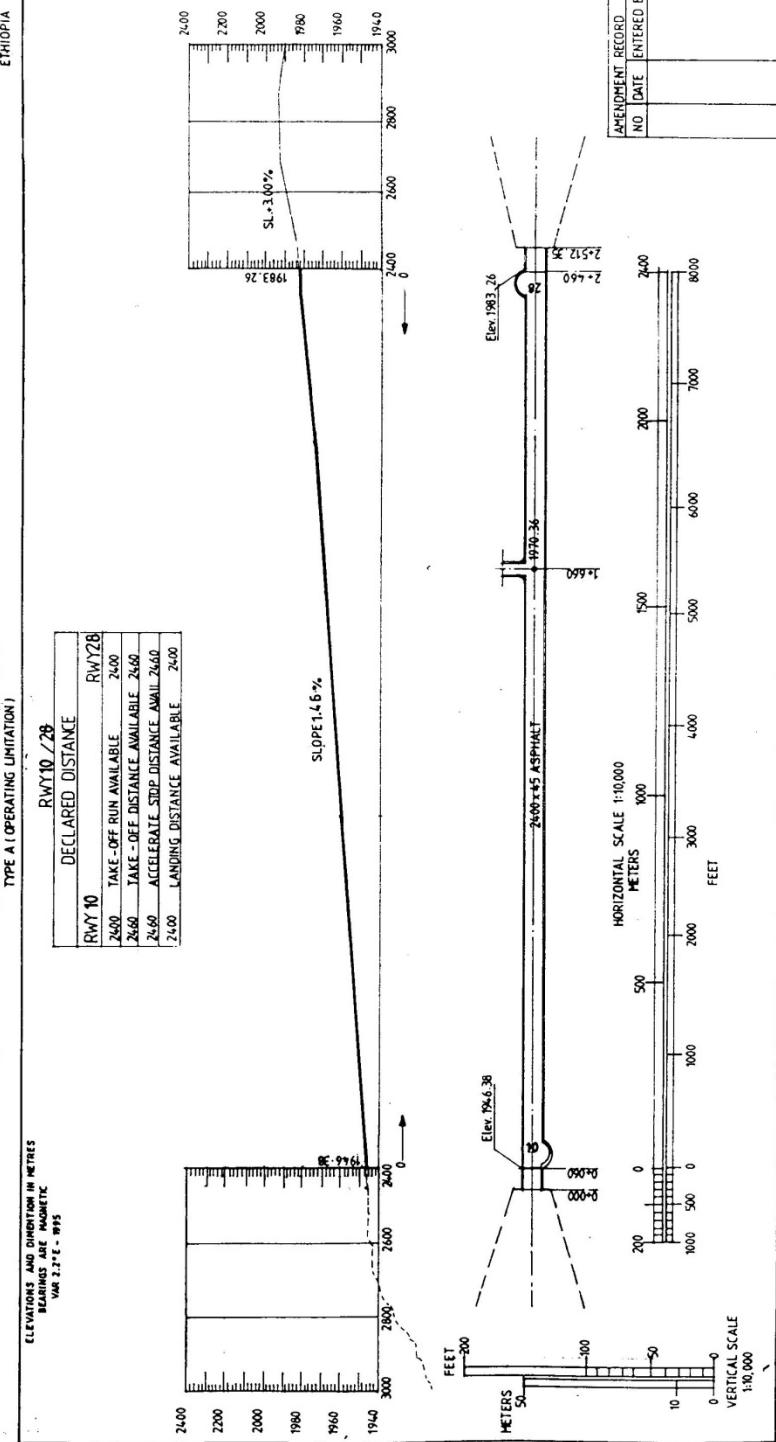


U.P. ETHIOPIA

LALIBELLA
ETHIOPIA

AERODROME OBSTACLE CHART - ICAO

ELEVATIONS AND DIMENTION IN METRES
BEARINGS ARE MAGNETIC



AMENDMENT 1 / 04

IIL AVIATION AUTHORITY
ADDIS ABEBA

**AD 2-AERODROMES
HAMK- MEKELE**

AD2-1. AERODROME LOCATION INDICATOR AND NAME

1	<i>Location name</i>	Mekele
2	<i>Airport Name</i>	MEKELE/MEKELE ALULA ABA NEGA
3	<i>ICAO Location indicator</i>	HAMK

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP coordinates and site at AD</i>	132823.9630N0393105.55915E at RWY 11 end
2	<i>Direction and distance from city</i>	South East of MekeLe town 8 KM.
3	<i>Elevation/reference temperature</i>	2256.375m (Ellipsoidal height at RWY 11 END / 27.5°C
4	<i>MAG VAR/Annual change</i>	2.3°E (1995) / .6'
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	Postal Address: Telephone: 251-344420321/22/23(PBX) Manager 251344420327 Fire fighting 251344408644 Fax-251 344420325 Control TWR 251344420328 Fax number (251)-0344421232 E-mail: mekele.ap@ethionet.et P.O.Box 55 Mekele ,Ethiopia
6	<i>Types of traffic permitted</i>	IFR/VFR
7	<i>Remarks</i>	Nil

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	0300 - 1700 UTC
2	<i>Customs and immigration</i>	0300 - 1700 UTC
3	<i>Health and sanitation</i>	Nil
4	<i>AIS Briefing office</i>	0300 – 1700 UTC daily
5	<i>ATS Reporting office</i>	Nil
6	<i>Met Briefing office</i>	0300 - 1700 UTC
7	<i>ATS</i>	0300 - 1700 UTC
8	<i>Fueling</i>	0300-1700 UTC
9	<i>Handling</i>	0300 - 1700 UTC
10	<i>Security</i>	0300 - 1700 UTC
11	<i>De-icing</i>	Nil
	<i>Remarks</i>	Outside operational Hours written request is needed. All costs associated with night operation will be covered by airline operators using the airport.
12		

AD2-4. HANDLING SERVICES AND FACILITIES:- Limited**AD2-5. PASSENGER FACILITIES**

5.1 *Hotels, restaurant and medical facilities:* Restaurant available at the airport.

5.2 *Transportation available:* Taxis

AD2-6. RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT 7	
2	<i>Rescue Equipment</i>	Two Foam tender	
3	<i>Capability for removal of disabled aircraft</i>	Available, 1 Mobile crane - 45 tone 2 Mobile crane - 45 tone	Weyra Transport Tel:0114341239 Addis Ababa Commet Transport Tel: 0116654909 Addis Ababa
4	<i>Remarks</i>	29 Trained personnel	

Additional companies are available in Addis Ababa, which have necessary equipments for the recovery of disable aircrafts: Addis Mechanical enterprise Mobile crane 35 tone. Tel: 0114160303.

Lalibella enterprise and construction Mobile crane 40 tone. Tel: 0114653000.

Awash construction enterprise. Mobile cato crane 45 tone. Tel: 0114164460

AD 2-HAMK-2

11 DEC 14

AIP ETHIOPIA

AD2-7. SEASONAL AVAILABILITY-CLEARING: - AD available all seasons

AD2-8. APRONS, TAXIWAYS AND CHECK LOCATIONS DATA

1	<i>Apron Surface and Strength</i>	<i>Surface: Concrete blocks Strength: PCN 60</i>
2	<i>Taxiway width, Surface and Strength</i>	<i>Width:23 M Surface: Concrete blocks Strength: PCN 60</i>
3	<i>ACL Location and Elevation</i>	<i>Nil</i>
4	<i>VOR/INS Check points</i>	<i>Nil</i>
5	<i>Remarks</i>	<i>Nil</i>

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	Use of aircraft stand 1D signs TWY guide Lines and visual docking/parking guidance system of aircraft stands	Yellow apron markings guides aircrafts to ramps.
2	RWY and TWY markings and LGT	<i>RWY markings:THR, Touchdown, centerline & edge Markings. RWY LGT: Edge elevated bi-directional and Brilliance. Control of combination of white and amber lights. TWY markings: Centreline, Taxi holding position, Edge. TWY LGT: Edge elevated omni directional blue Lights.</i>
3	Stop Bars	<i>Nil</i>
4	Remarks	<i>Nil</i>

AD2-10. AERODROME OBSTACLES: - There are concentrations of birds on both final approach areas of runway 29/11, pilots are strictly advised to take precaution during landing and take-off on both runways.

Radio antenna 800m from THR RWY 29 on the right side while approaching RWY 29 at a distance of 1132.3m from center line 125.5m above GND.

AD2-11. METEOROLOGICAL INFORMATION PROVIDED:-Limited; Wind sock available at both ends.

1	<i>Associated MET office</i>	Mekele Met. Station
2	<i>Hours of service Met office outside hours</i>	14Hrs agreed with the concerned
3	<i>Office responsible for TAF preparation periods of validity</i>	Bole Met. Office as per local flight schedule
4	<i>Type of landing forecast interval of issuance</i>	METAR,SPECI hourly OBS.
5	<i>Briefing/consultation provided</i>	
6	<i>Flight documentation language(s) used</i>	
7	<i>Charts and other information available for briefing consultation</i>	
8	<i>Supplementary equipment available for providing information</i>	AWOS,Automatic weather Observing system
9	<i>ATS units provided with information</i>	TWR
10	<i>Additional information</i>	Recent weather

AD2-12. RUNWAY PHYSICAL CHARACTERISTICS

<i>Designations RWY NR</i>	<i>True & Magnetic Bearing</i>	<i>Dimensions of RWY (M)</i>	<i>Strength (PCN) and surface of RWY and SWY</i>	<i>THR coordinates</i>	<i>THR elevation and highest elevation of TDZ of precision APP RWY</i>
1	2	3	4	5	6
11	112° T 110°M	3600x45	PCN 60, the first 300ms of two ends concrete block and the rest Asphalt concrete	13 28 20.35587N 039 31 14.82735E	2255.2797m(msl)
29	292° T 290°M			13 27 44.27896N 039 32 47.50836E	2244.9699m(msl)
Slope of RWY/SWY	SWY dimension (M)	CWY dimension (M)	Strip dimension (M)	Obstacle free zone	Remarks
7	8	9	10	11	12
-0.64%	60	100	4120x150	Nil	Nil
-0.77%	60	300			

AD2-13. DECLARED DISTANCES

<i>RWY Designator</i>	<i>TORA(M)</i>	<i>TODA(M)</i>	<i>ASDA(M)</i>	<i>LDA(M)</i>	<i>Remarks</i>
1	2	3	4	5	6
11	3600	3760	3660	3300	
29	3600	3960	3660	3300	

AD 2.14 APPROACH AND RUNWAY LIGHTING

<i>RWY</i>	<i>Approach Lights</i>	<i>THR Lights</i>	<i>VASIS PAPI</i>	<i>TDZ Length</i>	<i>RWY CL Spacing,</i>	<i>RWY Edge Lights</i>	<i>RWY end LGT</i>	<i>SWY Length</i>	<i>RMKS</i>
<i>Type, Length, Intensity</i>	<i>Colour, WBAR</i>				<i>Colour, Intensity</i>	<i>Colour, Intensity</i>	<i>Colour WBAR</i>	<i>Colour</i>	
1	2	3	4	5	6	7	8	9	10
11	Simple App white 420m high	Green	PAPI left/3°	Nil	Nil	3600m, 60m, 600m yellow the rest white	Red	Nil	Nil
29	Simple App white 420m high	Green	PAPI left/3°	Nil	Nil	3600m, 60m, 600m yellow the rest white	Red	Nil	Nil

AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY Nil

AD2-16. HELICOPTER LANDING AREA:- Heliport available in front of the terminal

AD2-17. ATS AIRSPACE

1	Designation and lateral limits	Mekele CTR circle with a radius of 25NM Centered on MK NDB.
2	Vertical limits	Lower limit:GND Upper limit : FL 175
3	Airspace classification	E
4	ATS unit, call sign Language (s)	Mekele Tower English
5	Transition altitude	FL 175
6	Remarks	Nil

AD2-18. ATS COMMUNICATION FACILITIES

Service	Call Sign	Frequency	Coordinates	Emission	Hours of operation	Remarks
1	2	3	4	5	6	7
TWR	Mekelle Tower	118.8 MHZ	13 28 18.91623N 039 31 55.86636E	A3	0300-1700	50 Watts
SMC	Mekelle Ground	121.9 MHZ	13 28 18.91623N 039 31 55.86636E	-	0300-1700	50 Watts

AD2-19. RADIO NAVIGATION AND LANDINGS AIDS

Type	Ident	Frequency	Coordinates	Emission	Hours of Operation	Remarks
1	2	3	4	5	6	7
NDB	MK	256 KHZ	13 28 30.40067N 039 31 18.20674E	A2	H24	Coverage:100NM Power: 100Watts
CVOR/ DME	QHA	116.6MHZ	13 28 21.980N 039 31 29.093E		H24	Coverage:200NM Power: 100watts
ILS/LLZ	QHA IMK	1200MHZ 111.7MHZ	13 28 27.45N 39 30 57.66E	A2	H24	Standby power available 1KW. ALT 2259.56M .operational performance of the ILS system fulfills CAT I ICAO standard requirements.
ILS/GP	-	333.5 MHZ	13 27 54.13N 39 32 36E	A2	H24	ALT 2240.51M
ADS-B						

AD2-20. LOCAL TRAFFIC REGULATIONS:- Nil

AD2-21. NOISE ABATEMENT PROCEDURES:- Nil

AD2-22. FLIGHT PROCEDURES**AD2-23. Additional information**

23.1 *Bird information:* There are concentrations of birds on both final approach areas of runways 29/11, pilots are strictly advised to take precaution during landing and take-off on both runways

23.2 *Supervision of aerodrome:*

Terminal and runway check takes place once a day every morning by RIV.

AD2-24. CHARTS RELATED TO AN AERODROME

Aerodrome Chart - ICAO.....	AD2 HAMK-6
Aerodrome Obstacle Chart - ICAO.....	AD2 HAMK-7
Instrument Approach Chart - ICAO-NDB	
RWY 11 (CAT A/B C/D ACFT)	AD2 HAMK-8
Visual Approach Chart - ICAO.....	AD2 HAMK-10
Instrument Approach Chart- ICAO-VOR/DME	
RWY 29(CAT A/B C/D ACFT)	AD2 HAMK-11
Standard Instrument Departure Chart-ICAO.....	AD2 HAMK-12
Instrument Approach Chart- ICAO-VOR/DME	
RWY 11 (CAT A/B C/D ACFT)	AD2 HAMK-13

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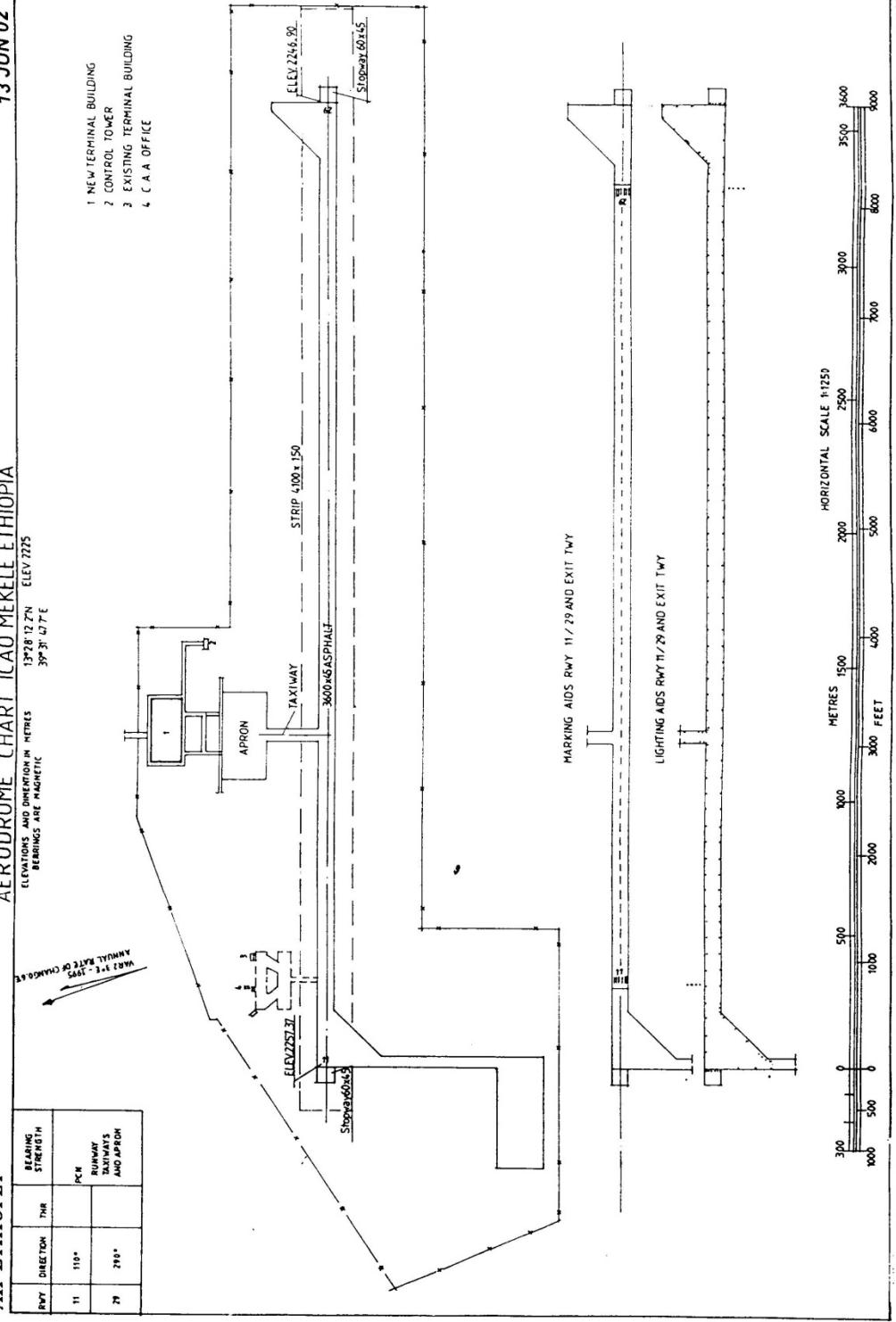
AERODROME CHART ICAO MEKELE ETHIOPIA

ELEVATIONS AND DIMENSIONS IN METRES
BEARINGS ARE MAGNETIC

13°28'12"N ELEV 2275
39°31'47"E

AD2 HAM/K-6
13 JUN 02

- 1 NEW TERMINAL BUILDING
- 2 CONTROL TOWER
- 3 EXISTING TERMINAL BUILDING
- 4 C.A.A OFFICE



**Civil Aviation Authority
Addis Ababa**

Amendment 1/02

AIP ETHIOPIA

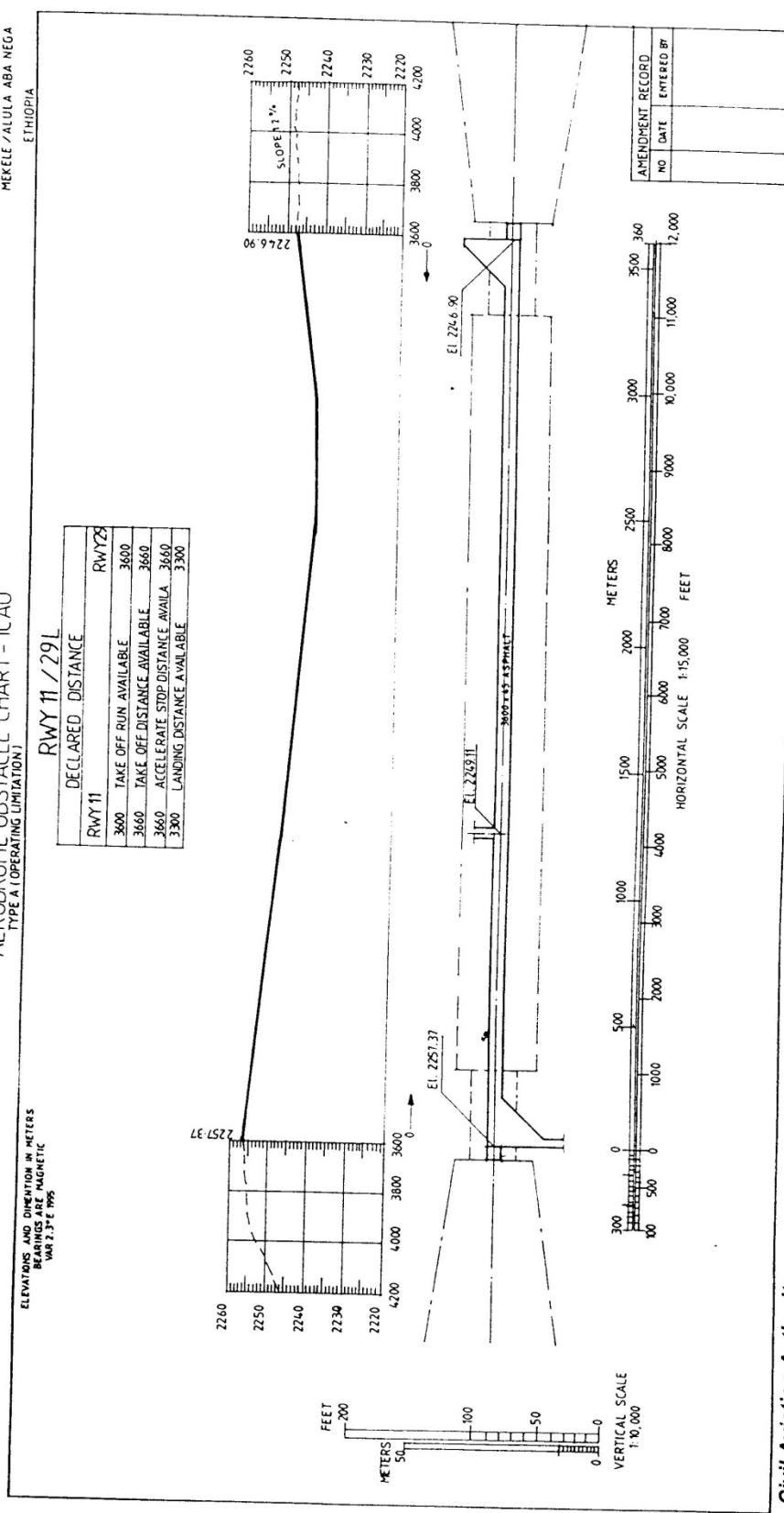
**AD2 HAMK-7
13 JUN 02**

AERODROME OBSTACLE CHART - (CAO)

TYPE A (OPERATING LIMITATION)

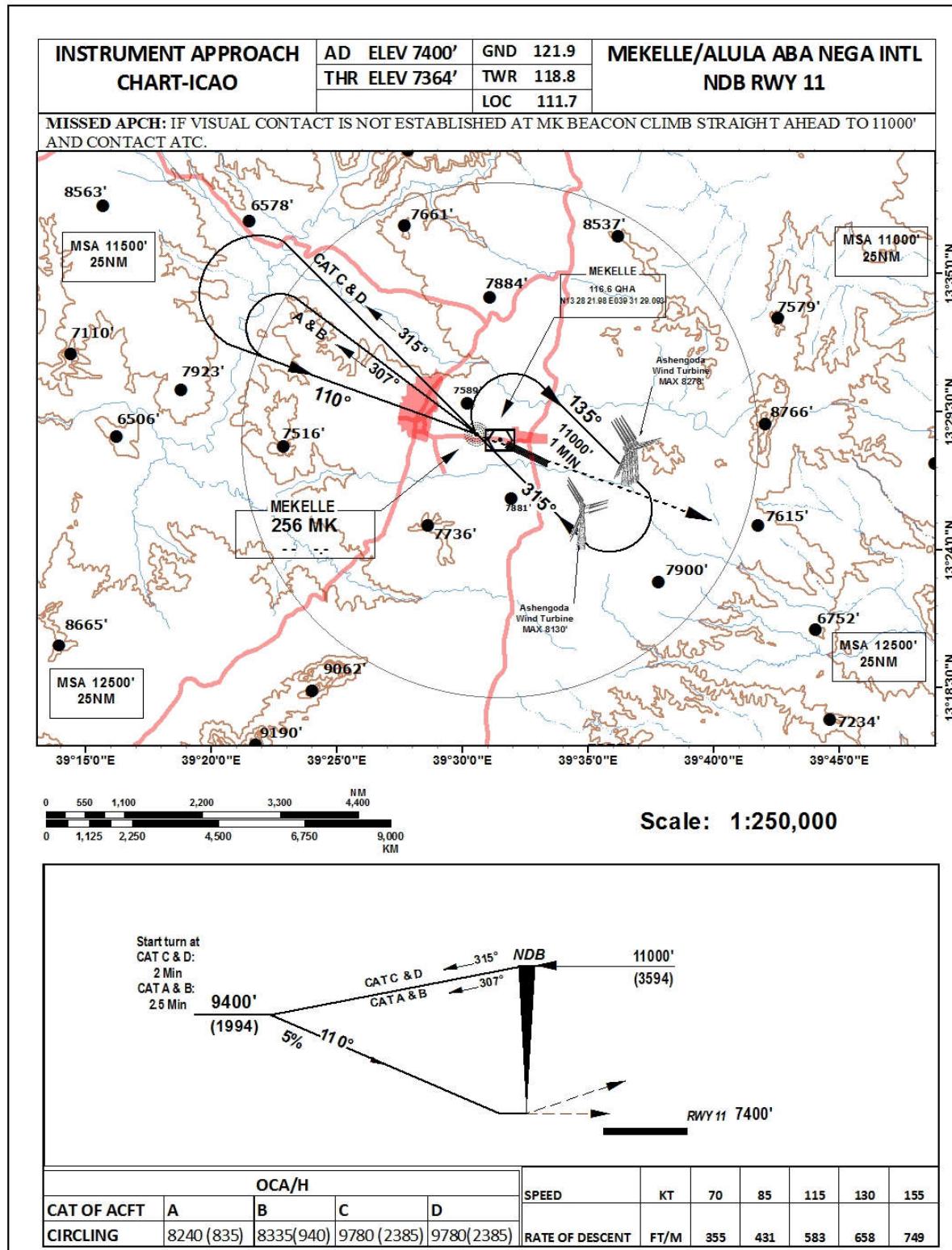
MEKELE/AULUA ABA NEGA
ETHIOPIA

ELEVATIONS AND DIMENSIONS IN METERS
BEARINGS ARE MAGNETIC
WGS 2.3°E 1995



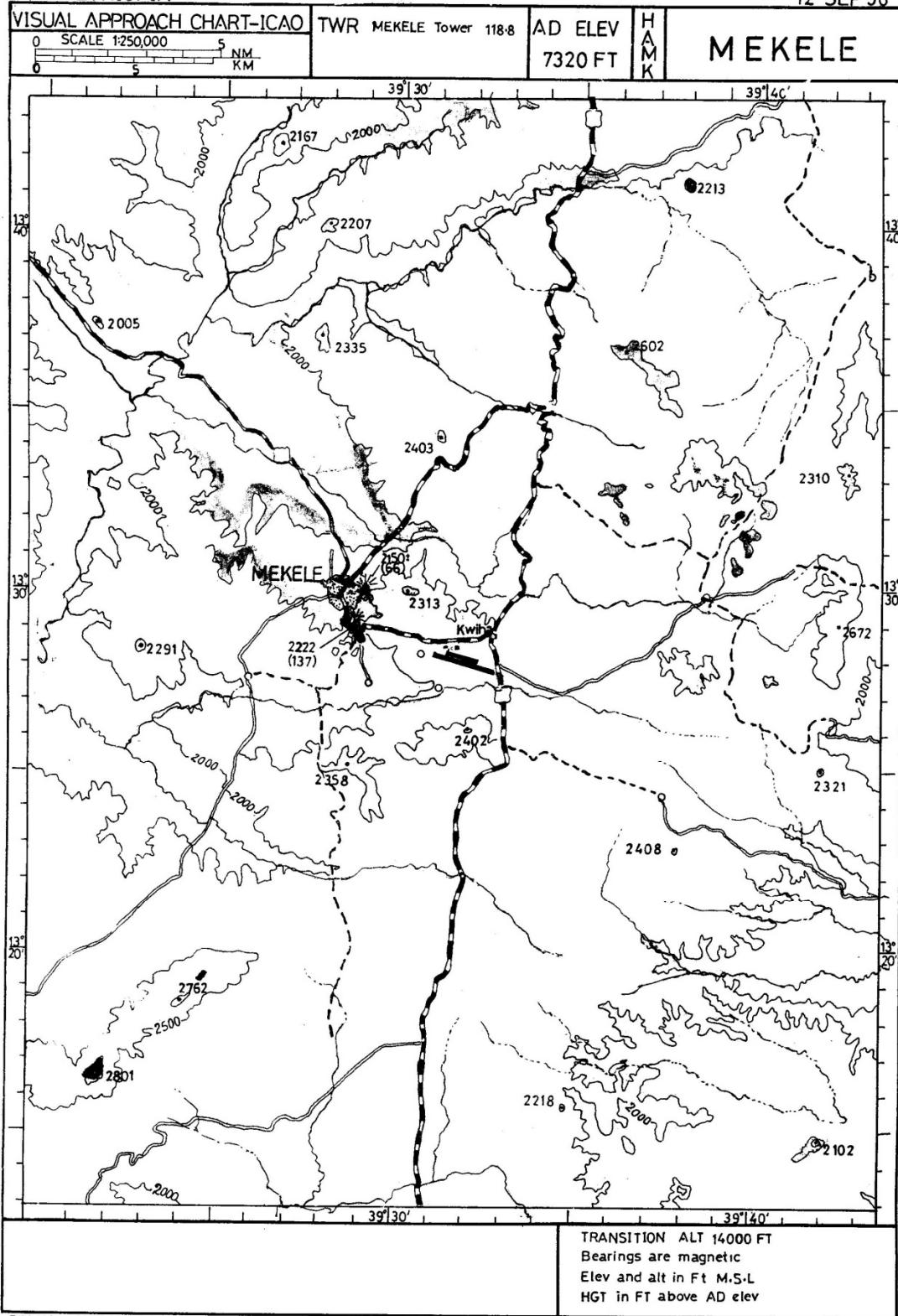
**Civil Aviation Authority
Addis Ababa**

AMENDMENT 1/02



AIP ETHIOPIA

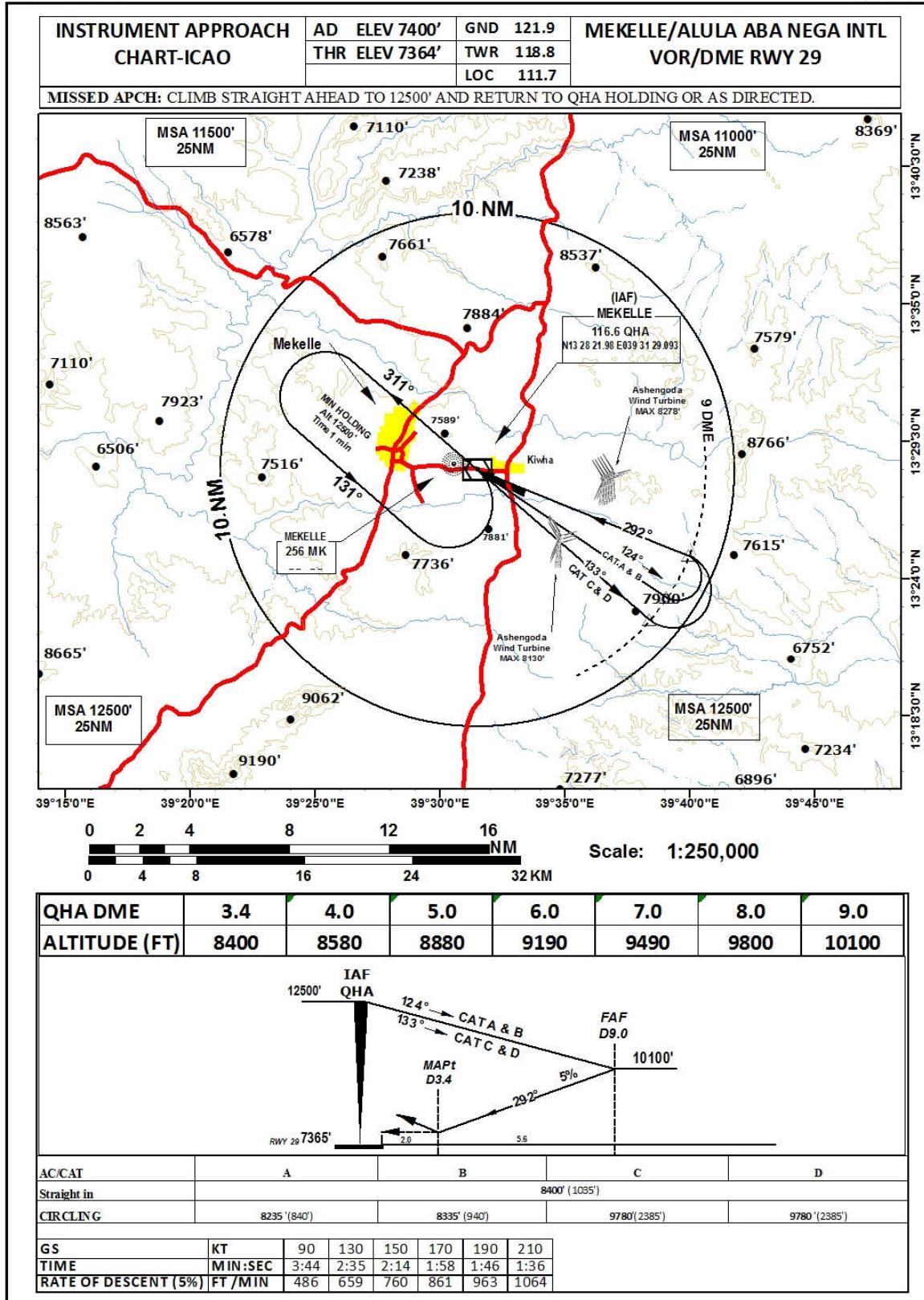
AD2.HAMK-10
12 SEP 96



CIVIL AVIATION AUTHORITY
ADDIS ABEBA

2nd Edition

AIP ETHIOPIA



AD2 HAMK-12

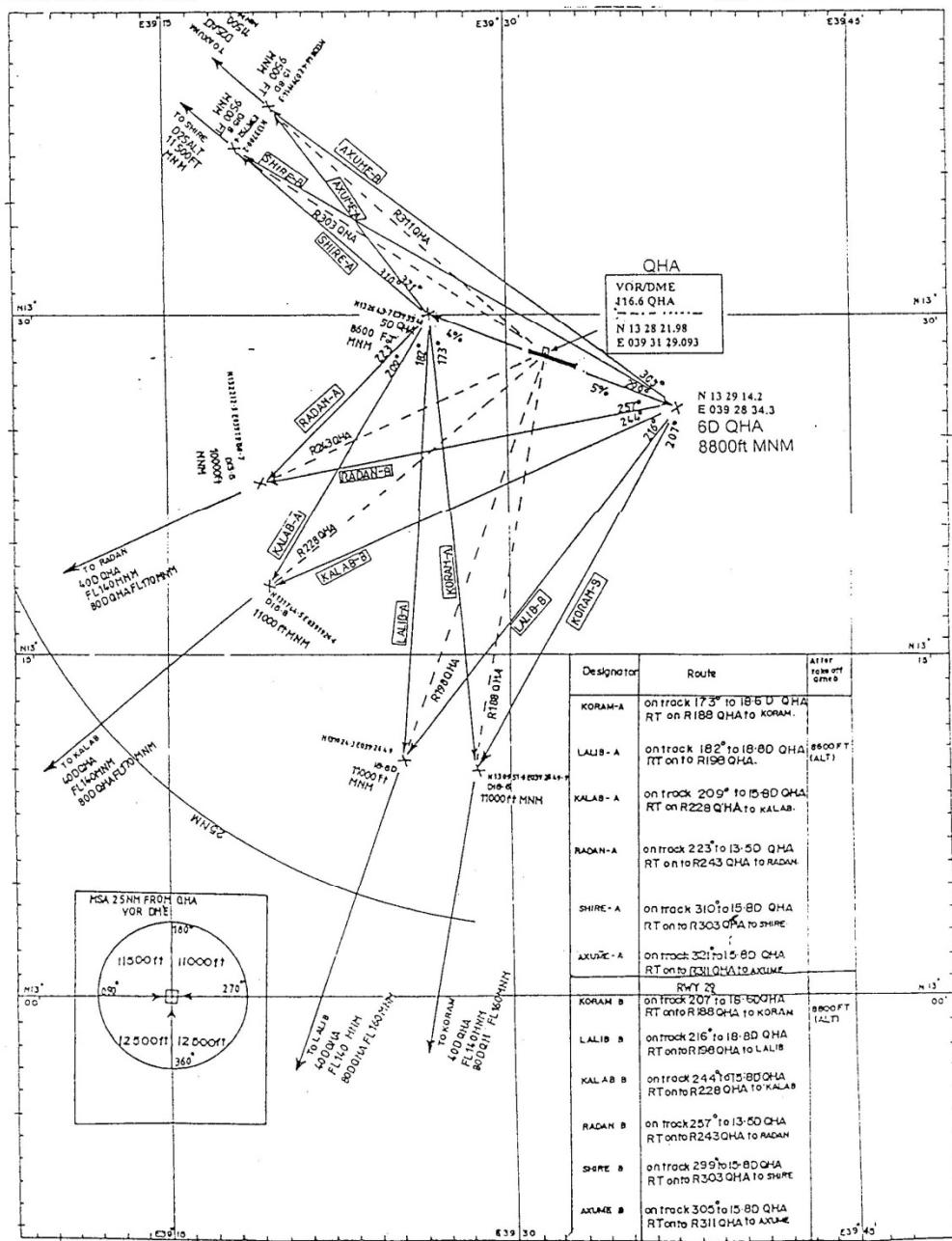
02 FEB 06

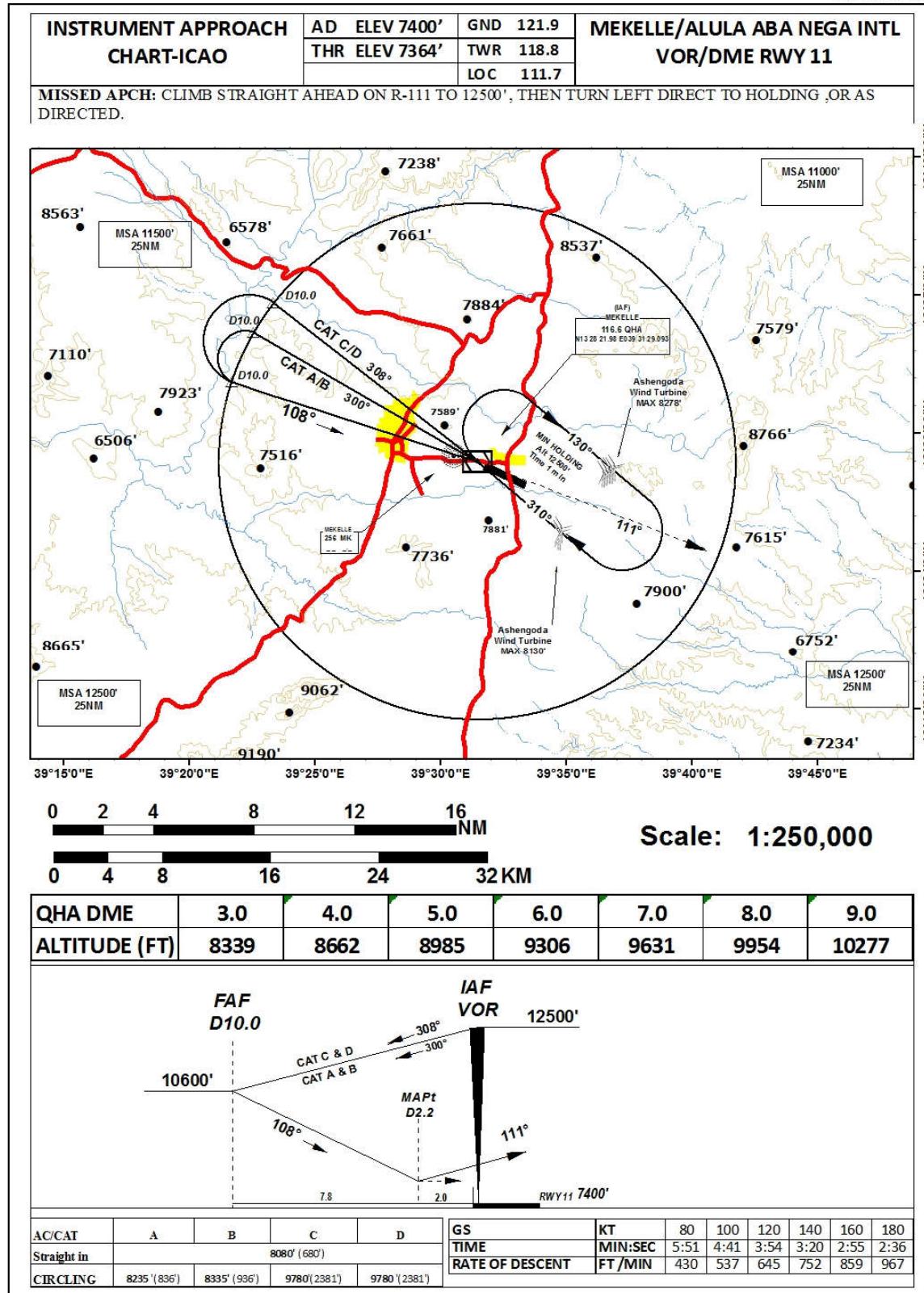
AIP ETHIOPIA

STANDARD INSTRUMENT
DEPARTURE CHART-ICAO

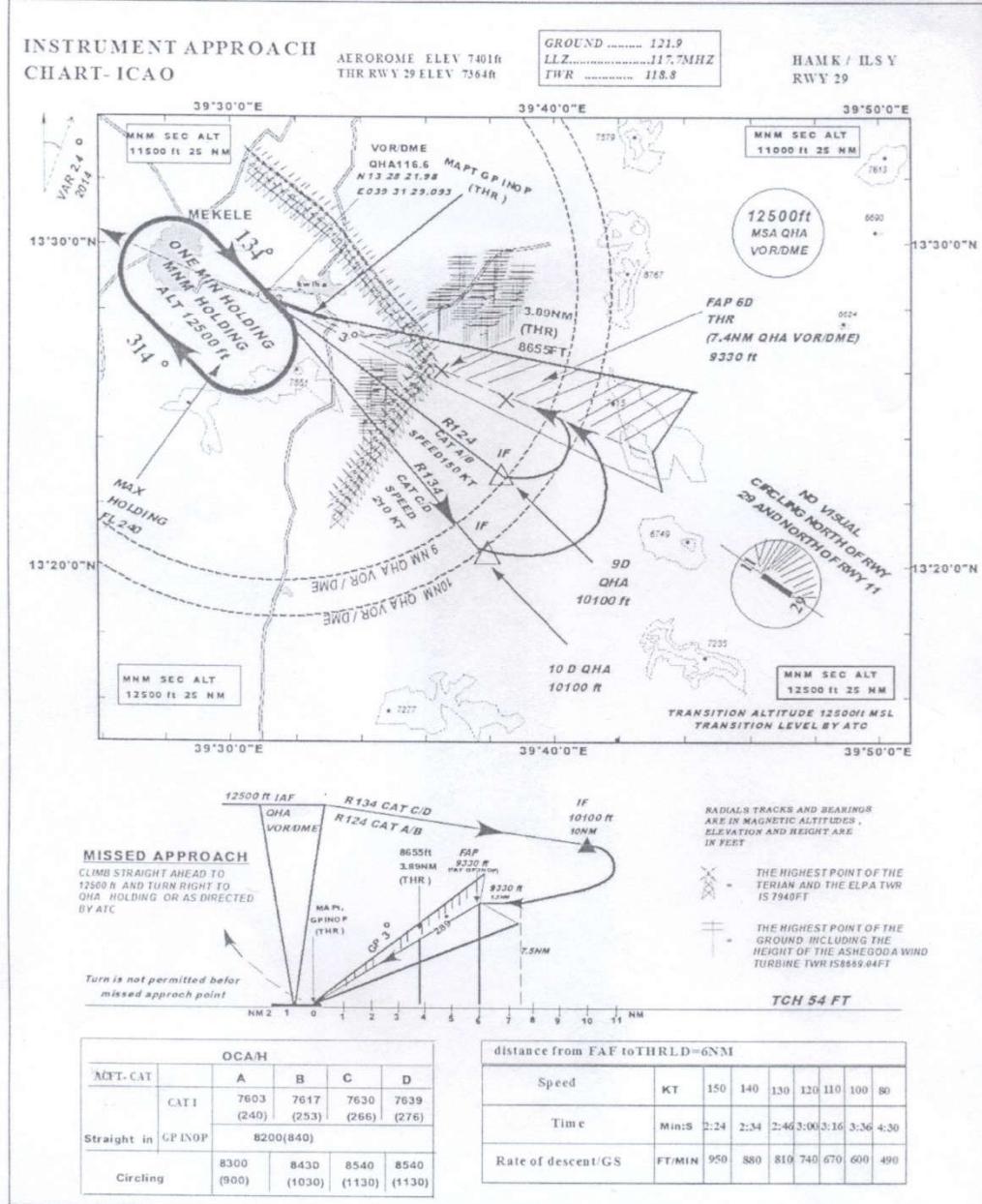
AERODROME ELEV 7406ft(RWY 11/29) TWR 116.7
THR RWY 11 ELEV 7400ft/7365ft for RWY 29 GND 121.9

MEKELE/ALULA ABA NEGA
AIRPORT
KORAM A/B,LALIB A/B,KALAB A/B
RADAN A/B,SHIRE A/B,AXUM A/B





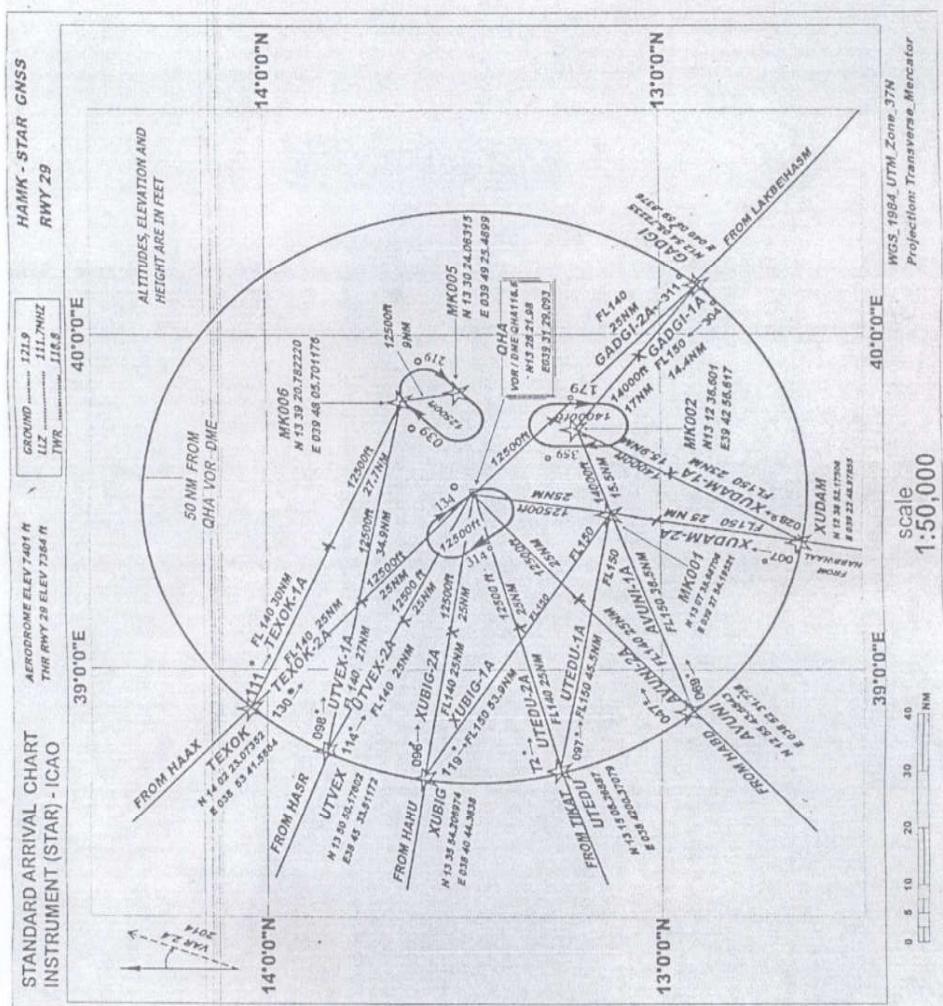
AIP ETHIOPIA

AD2 HAMK-15
23 JUL 16Civil Aviation Authority
Addis Ababa

Amendment 1/16

AD2 HAMK-16
23 JUL 16

AIP ETHIOPIA



Civil Aviation Authority
Addis Ababa

Amendment 1/16

AD 2-AERODROMES**HASM - SEMERA****AD2-1. AERODROME LOCATION INDICATOR AND NAME**

1	<i>Location name</i>	Semera
2	<i>Airport name</i>	Semera
3	<i>ICAO Location indicator</i>	HASM

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP Coordinates and Site at AD</i>	114746N 0405900E
2	<i>Directional and distance from city</i>	North of the town or Addis Ababa-Assab road
3	<i>Elevation/Reference temperature</i>	1436FT
4	<i>MAG VAR/Annual Change</i>	-
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	ETHIOPIAN AIRPORTS ENTERPRISE P.O.BOX 90652 ADDIS ABABA, ETHIOPIA Telephone: 251-11 6650400 E-mail:Bole.a.p@ethionet.et
6	<i>Types of traffic permitted</i>	VFR
7	<i>Remarks</i>	NIL

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	Nil
2	<i>Customs and immigration</i>	Nil
3	<i>Health and Sanitation</i>	Nil
4	<i>AIS Briefing Office</i>	Nil
5	<i>AIS reporting Office</i>	Nil
6	<i>Met Briefing Office</i>	Nil
7	<i>ATS</i>	Nil
8	<i>Fueling</i>	Nil
9	<i>Handling</i>	Nil
10	<i>Security</i>	Nil
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	Nil

AD2-4. HANDLING SERVICES AND FACILITIES..... Nil

AD2-5. PASSENGER FACILITIES Nil

AD2-6 RESCUE AND FIRE FIGHTING SERVICES..... Nil

AD2-7. SEASONAL AVAILABILITY-CLEARING..... Nil

AD 2.8 APPRONS, TAXIWAYS AND CHECK LOCATION DATA

1	<i>Apron Surface and Strength</i>	<i>Surface:</i> Well compacted volcanic ash <i>Strength:</i> PCN 30
2	<i>Taxiway width, Surface and Strength</i>	<i>Width:</i> Nil <i>Surface:</i> Nil <i>Strength:</i> Nil
3	<i>ACL Location and Elevation</i>	Nil
4	<i>VOR/INS Check points</i>	Nil
5	<i>Remarks</i>	Nil

AD 2-HASM-2

02 FEB 06

AIP ETHIOPIA

AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	<i>Use of aircraft stand ID signs TWY guide Lines and visual docking/parking guidance system of aircraft stands</i>	Nil
2	<i>RWY and TWY markings and LGT</i>	<i>RWY markings:</i> White painted stone at two ends and side edge every 100meters <i>RWY LGT:</i> NIL <i>TWY markings:</i> NIL <i>TWY LGT:</i> NIL
3	<i>Stop bars</i>	Nil
4	<i>Remarks</i>	Nil

AD2-10. AERODROME OBSTACLES:- Clear on both ends**AD2-11. METEOROLOGICAL INFORMATION PROVIDED:-** More than 75% of annual wind is from SW**AD2-12. RUNWAY PHYSICAL CHARACTERISTICS**

<i>Designations RWY NR</i>	<i>True & Magnetic Bearing</i>	<i>Dimensions of RWY (M)</i>	<i>Strength and Surface of RWY and SWY</i>	<i>THR Coordinates</i>	<i>The elevation & Highest elevation of TDZ of Precision APP RWY</i>
1	2	3	4	5	6
13	130° M	2400 x 45	PCN30, volcanic ash gravel	Nil	Nil
31	310° M				
<i>Slope of RWY/SWY</i>	<i>SWY Dimension (M)</i>	<i>CWY Dimension (M)</i>	<i>Strip Dimension (M)</i>	<i>Obstacle Free Zone</i>	<i>Remarks</i>
7	8	9	10	11	12
FLAT	Nil	Nil	2600X80	Nil	Nil
FLAT					

AD2-13. DECLARED DISTANCES

<i>RWY Designator</i>	<i>TORA(M)</i>	<i>TODA(M)</i>	<i>ASDA(M)</i>	<i>LDA(M)</i>	<i>Remarks</i>
1	2	3	4	5	6
13	2400	2400	2400	2400	Nil
31	2400	2400	2400	2400	NIL

AD2-14. APPROACH AND RUNWAY LIGHTING Nil**AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY** Nil**AD2-16. HELICOPTER LANDING AREA.....** Nil**AD2-17. ATS AIRSPACE** Nil**AD2-18. ATS COMMUNICATION FACILITIES** Nil**AD2-19. RADIO NAVIGATION AND LANDINGS AIDS** Nil**AD2-20. LOCAL TRAFFIC REGULATIONS.....** Nil**AD2-21. NOISE ABATEMENT PROCEDURES** Nil**AD2-22. FLIGHT PROCEDURES.....** Nil**AD2-23. ADDITIONAL INFORMATION.....** Nil**AD2-24. CHARTS RELATED TO AN AERODROME.....** Nil

AD 2 AERODROMES
HASO- ASOSA HIDASE AIRPORT

AD2-1. AERODROME LOCATION INDICATOR AND NAME

1	<i>Location name</i>	Asosa
2	<i>Airport name</i>	Asosa Hidase Airport
3	<i>ICAO Location indicator</i>	HASO

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	ARP coordinates and site at AD	100119.01083N 03443.9354E RWY &TWY INT
2	Direction and distance from city	SE of Town/6.8M
3	Elevation/reference temperature	1560M
4	MAG VAR/Annual change	1.7°E (1995)./.6' increasing
5	AD Administration address, Telephone telex,AFS	Postal address: ASSOSA Hidase Airport P.BOX :48 Assosa ,Ethiopia Telephone : 251-57 775 0344 251-57 669 0961
6	Types of traffic permitted	VFR
7	Remarks	

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	0400 -1500 During operational days
2	<i>Customs and immigration</i>	Nil
3	<i>Health and sanitation</i>	Nil
4	<i>AIS Briefing office</i>	Nil
5	<i>ATS Reporting office</i>	Nil
6	<i>Met Briefing office</i>	Nil
7	<i>ATS</i>	Nil
8	<i>Fueling</i>	Available 0400 -1500
9	<i>Handling</i>	Nil
10	<i>Security</i>	MON,WED, FRI & SUN(*)
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	(*) see NOTAM or AIP SUP for latest Ethiopian Airlines flight SKED. For non-SKED flights prior arrangement is required.

AD2-4. HANDLING SERVICES AND FACILITIES Nil**AD2-5. PASSENGER FACILITIES**

5.1 Hotels, restaurants and medical facilities: In town

5.2 Transportation available: Not available.

AD2-6. RESCUE AND FIRE FIGHTING SERVICES

1	<i>AD Category for fire fighting</i>	CAT6
2	<i>Rescue Equipment</i>	1 Foam tender
3	<i>Capability for removal of disabled aircraft</i>	Limited
4	<i>Remarks</i>	8 trained personnel.

AD2-7. SEASONAL AVAILABILITY- CLEARING: - AD available at all seasons.

AD2-8. APPRONS, TAXIWAYS AND CHECK LOCATION DATA

1	<i>Apron Surface and Strength</i>	<i>Surface: Asphalt concrete Strength: PCN 60</i>
2	<i>Taxiway width, Surface and Strength</i>	<i>Width: 23m Surface: Selected fill material Strength: PCN 60</i>
3	<i>ACL Location and Elevation</i>	<i>Nil</i>
4	<i>VOR/INS Check points</i>	<i>Nil</i>
5	<i>Remarks</i>	<i>Nil</i>

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	<i>Use of aircraft stands ID signs, TWY guide lines and Visual docking/parking guidance system of aircraft stands.</i>	<i>Nil</i>
2	<i>RWY and TWY markings and LGT.</i>	<i>RWY markings: Every 100m 100cmx100cm white painted hollow blocks RWY LGT: Nil TWY markings: Nil TWY LGT: Nil</i>
3	<i>Stop bars</i>	<i>Nil</i>
4	<i>Remarks</i>	<i>Nil</i>

AD2-10. AERODROME OBSTACLESNil**AD2-11. METEOROLOGICAL INFORMATION PROVIDED.....** Nil**AD2-12. RUNWAY PHYSICAL CHARACTERISTICS**

Designations	True & magnetic bearing	Dimensions of RWY (M)	Strength & surface of RWY and SWY	THR coordinates	THR elevation & highest elevation of TDZ of precision APP RWY
1	2	3	4	5	6
11	114°	2500X45	Asphalt concrete PCN 60	10°00'56"N 34°35'32"E	1573
29	293°	2500X45	Asphalt concrete PCN 60	10°00'57"N 34°35'32"E	1549
Slope of RWY/SWY	SWY dimension	CWY dimension	Strip dimension	Obstacle free zone	Remark
7	8	9	10	11	12
		Nil	2500X45	Nil	
		Nil			

AD2.13 DECLARED DISTANCES

<i>RWY Designator</i>	<i>TORA(M)</i>	<i>TODA(M)</i>	<i>ASDA(M)</i>	<i>LDA(M)</i>	<i>Remarks</i>
1	2	3	4	5	6
11	2500	2560	2620	2350	Nil
29	2500	2560	2620	2350	

AD2-14. APPROACH AND RUNWAY LIGHTING ----- Nil**AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY ----- Nil****AD2-16. HELICOPTER LANDING AREA ----- Nil****AD2-17. ATS AIRSPACE ----- Nil****AD2-18. ATS COMMUNICATION FACILITIES**

Service	Call Sign	Frequency	Coordinates	Emission	Hours of operation	Remarks
1	2	3	4	5	6	7
TWR	Assosa TWR	118.5 MHZ		-	0400 - 1500	
SMC	Assosa Ground	121.9 MHZ		-	0400 - 1500	

AD2-19. RADIO NAVIGATION AND LANDING AIDS----- Nil**AD2-20. LOCAL TRAFFIC REGULATIONS ----- Nil****AD2-21. NOISE ABATEMENT PROCEDURES ----- Nil****AD2-22. FLIGHT PROCEDURES ----- Nil****AD2-23. ADDITIONAL INFORMATION ----- Nil****AD2-24. CHARTS RELATED TO AN AERODROME ----- Nil**

AD CHART- ICAO.....AD2 HASO 4

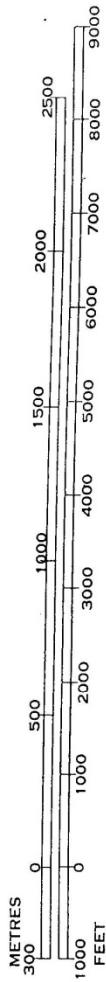
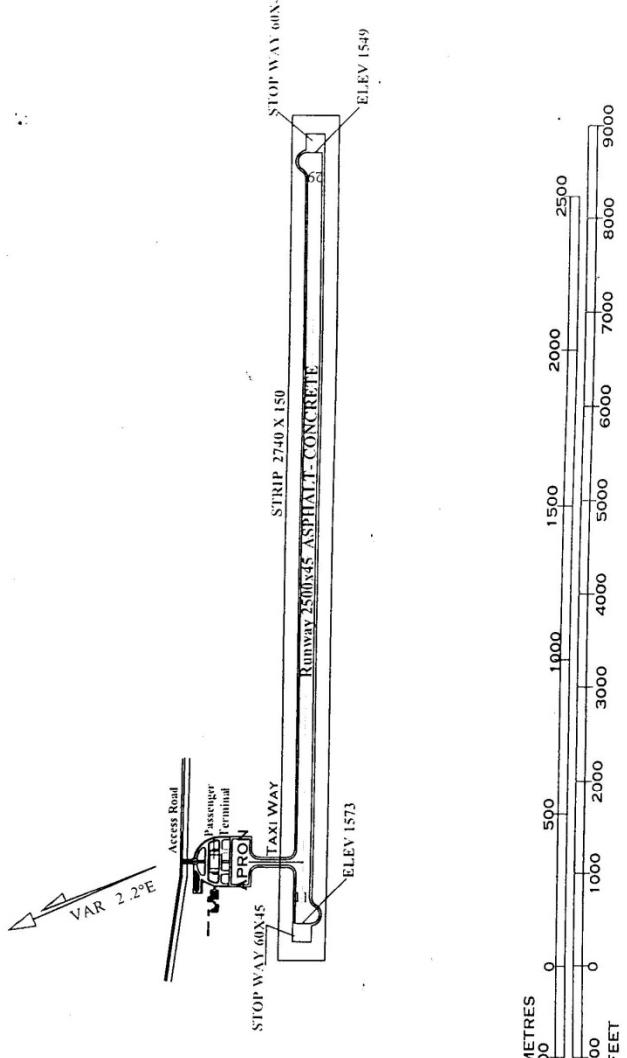
Aerodrome obstacle chart ICAO.....AD2 HASO 5

AIP ETHIOPIA AERODROME CHART -ICAO 10 00' 56" N ELEV 1573m AD2 HASO-4

03 JUN 10

RWY	DIRECTION	TIR	BEARING STRENGTH
11	113 (T)	10 00' 56" N 34 35' 32" E	ASPHALT CONCRETE PCN 60
29	294 (T)	10 00' 57" N 34 35' 32" E	

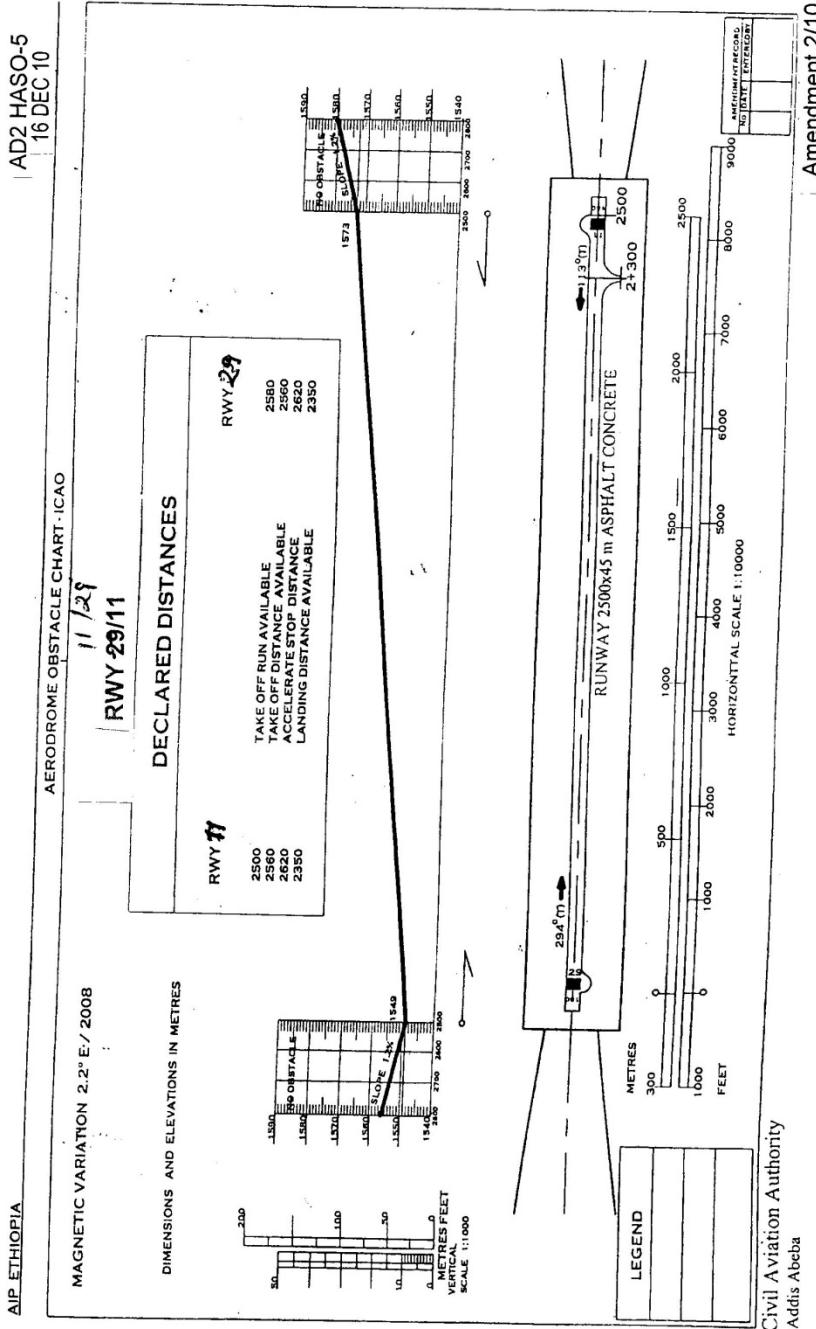
ELEVATIONS AND DIMENSION IN
METRES BEARINGS ARE MAGNETIC



AIP ETHIOPIA

MAGNETIC VARIATION 2.2° E./2008
P. ETHIOPIA

AD2 HASO-5
16 DEC 10



Civil Aviation Authority
Addis Ababa

AD 2-AERODROMES
HASR – SHIRE GENERAL HAYELOM AIRPORT

AD2-1. AERODROME LOCATION INDICATOR AND NAME

1	<i>Location name</i>	SHIRE
2	<i>Airport name</i>	SHIRE GENERAL HAYELOM AIRPORT
3	<i>ICAO Location indicator</i>	HASR

AD2-2. AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	<i>ARP Coordinates and Site at AD</i>	140513N 0381556E
2	<i>Directional and distance from city</i>	SW of town 1.5KM
3	<i>Elevation/Reference temperature</i>	5972FT/25°C
4	<i>MAG VAR/Annual Change</i>	-
5	<i>AD Administration, Address, Telephone Telex, AFS</i>	ETHIOPIAN AIRPORTS ENTERPRISE P.O.BOX 90652 ADDIS ABABA, ETHIOPIA Telephone: 251-11 6650400 E-mail:Bole.a.p@ethionet.et
6	<i>Types of traffic permitted</i>	VFR
7	<i>Remarks</i>	NIL

AD2-3. OPERATIONAL HOURS

1	<i>AD Administration</i>	Nil
2	<i>Customs and immigration</i>	Nil
3	<i>Health and Sanitation</i>	Nil
4	<i>AIS Briefing Office</i>	Nil
5	<i>AIS reporting Office</i>	Nil
6	<i>Met Briefing Office</i>	Nil
7	<i>ATS</i>	Nil
8	<i>Fueling</i>	Nil
9	<i>Handling</i>	Nil
10	<i>Security</i>	Nil
11	<i>De-icing</i>	Nil
12	<i>Remarks</i>	Nil

AD2-4. HANDLING SERVICES AND FACILITIES..... Nil**AD2-5. PASSENGER FACILITIES Nil****AD2-6. RESCUE AND FIRE FIGHTING SERVICES**

1	<i>AD Category for fire fighting</i>	CAT5
2	<i>Rescue Equipment</i>	
3	<i>Capability for removal of disabled aircraft</i>	
4	<i>Remarks</i>	

AD2-7. SEASONAL AVAILABILITY-CLEARING..... Nil**AD2-8. APRONS, TAXIWAYS AND CHECK LOCATIONS DATA Nil**

AD2-9. SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	<i>Use of aircraft stand 1D signs TWY guide Lines and visual docking/parking guidance system of aircraft stands</i>	Nil
2	<i>RWY and TWY markings and LGT</i>	<i>RWY markings:- White painted stones edge markings every 100meters</i>
3	<i>Stop Bars</i>	Nil
4	<i>Remarks</i>	Nil

AD2-10. AERODROME OBSTACLES:- Clear on both ends**AD2-11. METEOROLOGICAL INFORMATION PROVIDED:-** Nil**AD2-12. RUNWAY PHYSICAL CHARACTERISTICS**

<i>Designations RWY NR</i>	<i>True & Magnetic Bearing</i>	<i>Dimensions of RWY (M)</i>	<i>Strength and Surface of RWY and SWY</i>	<i>T H R Coordinates</i>	<i>The elevation & Highest elevation of TDZ of Precision APP RWY</i>
1	2	3	4	5	6
15	130° M	2800 x 40	PCN30, volcanic red ash	Nil	Nil
33	310° M				
<i>Slope of RWY/SWY</i>	<i>SWY Dimension (M)</i>	<i>CWY Dimension (M)</i>	<i>Strip Dimension (M)</i>	<i>Obstacle Free Zone</i>	<i>Remarks</i>
7	8	9	10	11	12
FLAT	Nil	Nil	-	Nil	Nil
FLAT					

AD2-13. DECLARED DISTANCES

<i>RWY Designator</i>	<i>TORA(M)</i>	<i>TODA(M)</i>	<i>ASDA(M)</i>	<i>LDA(M)</i>	<i>Remarks</i>
1	2	3	4	5	6
15	2800	2800	2800	2800	NIL
33	2800	2800	2800	2800	

AD2-14. APPROACH AND RUNWAY LIGHTING Nil**AD2-15. OTHER LIGHTING, SECONDARY POWER SUPPLY** Nil**AD2-16. HELICOPTER LANDING AREA.....** Nil**AD2-17. ATS AIRSPACE** Nil**AD2-18. ATS COMMUNICATION FACILITIES** Nil**AD2-19. RADIO NAVIGATION AND LANDINGS AIDS** Nil**AD2-20. LOCAL TRAFFIC REGULATIONS.....** Nil**AD2-21. NOISE ABATEMENT PROCEDURES** Nil**AD2-22. FLIGHT PROCEDURES.....** Nil**AD2-23. ADDITIONAL INFORMATION.....** Nil**AD2-24. CHARTS RELATED TO AN AERODROME.....** Nil