



INTERNATIONAL CIVIL AVIATION ORGANIZATION
SIXTH MEETING OF THE APIRG COMMUNICATIONS SUB-GROUP
(COM/SG/6)

(Nairobi, 24 - 26 September 2002)

Agenda Item 5: Aeronautical mobile service (AMS)

- 5.1 Review of the implementation and performance of the Aeronautical Mobile Service in the AFI Region, identification of deficiencies and remedial action for their elimination

(Presented by the Secretariat)

| Summary |
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| This paper reviews progress in the implementation of the aeronautical mobile service (AMS) and identifies deficiencies still to be resolved. |
| Action by the meeting is at paragraph 3. |
| Reference: -APIRG/13 Report -AFI/7 RAN Report, Doc. 9702 |

1. Introduction

1.1 Since the last meeting of the Sub-group, a number of States have taken measures to extend VHF coverage. These efforts are reviewed in this paper. However, a number of deficiencies still affect the aeronautical mobile service as documented herein.

2 Discussion

2.1 In accordance with AFI/7 Rec. 5/12, VHF coverage should be provided along all ATS routes, and where necessary, remote VHF stations should be used.

2.2 A number of States have recently expanded VHF coverage using remote VHF stations.

2.2.1 In FIR Antananarivo, 2 remote VHF stations have been implemented at Antsiranana (12°21'S/049°18'E) and Toharia (23°23S/043°44E). Both stations have a range of 200 NM and cover up to FL 460. A third station was to be implemented at Moroni in the Comoros. Its status is not known.

2.2.2 In FIR Mauritius, 4 ER stations have been implemented at Agalega Island (1022S/5636E), Brandon Atoll (...), Mauritius (2026S/5741E) and Rodrigues Island (1945S/06321E). The range of each station is 240NM.

2.2.3 In FIR Niamey, a VHF station has been implemented at Bobo Dioulasso (1110N/00419W) with a range of 240 NM and up to FL460.

2.2.4 In Dakar FIR, two relay stations have been implemented at Tambacounda (1444N/01339W) and at Atar (Mauritania) (2030N/01303W), with a range of 240 NM and up to FL460.

2.2.5 The existing VHF relay stations in FIRs Accra, Brazzaville, Kano, Ndjamena and Niamey are shown at **Appendix A**.

2.2.6 The planned VHF relay stations in FIRs Brazzaville, Dakar Oceanic, Dar es Salaam, Entebbe, Luanda, Lusaka, Lilongwe, Ndjamena and Niamey are shown in **Appendix B**. Significant progress and improved AMS service can be achieved if all projects are implemented.

Identification of deficiencies

2.3 The Secretariat has updated the lists of deficiencies in the AMS field as shown in Appendix C based on mission reports to States. The meeting is invited to update Appendix C, taking into account the information provided in paragraph 2.2 above.

2.4 The Secretariat receives at times deficiency reports from the Flight Safety Unit of SAA. These are usually copied to the concerned CAA. States should be encouraged to investigate diligently and provide feedback to all addressees of the SAA deficiency reports. States should also issue NOTAM whenever a given communication facility is not fully operational.

3. Action by the meeting.

3.1 The COM/SG is invited to:

- a) note the information provided herein;
- b) update the VHF extension projects;
- c) review and update the list of deficiencies at Appendix C; and
- d) invite States to designate focal points to reply to users deficiency reports related to communications.

- E N D -

APPENDIX A

| FIR | Station | Coordinates Coordonnées | Frequency Fréquence (MHz) | Implementation date/Date de mise ne oeuvre | Coverage Couverture |
|-------------------|---------------|----------------------------|---------------------------------|--|---------------------------|
| Accra | Accra | 0534N0010W | 130.900 | | South /Sud |
| | Tamale | 0933N0051W | 126.700 | 1999 | North/Nord |
| Brazzaville | Bouar | 0557N1538E | | Dec 97 | West/Ouest |
| | Ouessou | 0137N1604E | | Oct 00 | Center East Centre Est |
| Kano | | | | | |
| ▪ Kano Sector | Kano | 1202N0831E | 124.100 | 1999 | East/Est |
| | Jos | 0952N0854E | 124.100 | 1999 | East/Est |
| | Maiduguri | 1150N1305E | 124.100 | 1999 | East/Est |
| | Kano | 1202N0831E | 128.500 | 1999 | West/Ouest |
| | Abuja | 0902N0716E | 128.500 | 1999 | West/Ouest |
| | Sokoto | 1255N0514E | 128.500 | 1999 | West/Ouest |
| ▪ Lagos Sector | Lagos | 0636N0320E | 127.300 | 2001 | East |
| | Port Harcourt | 0450N0701E | 127.300 | 2001 | East |
| | Abuja | 0902N0716E | 120.900 | 2001 | West |
| | Ilorin | | 120.900 | 2001 | West (not OP) |
| Ndamena | Amtiman | 1102N 2017E | | Dec 97 | South west |
| | Dire | | | Dec 97 | West |
| | Dirkou | | | Aug 01 | North west |
| | Faya Largeau | 1755N 1907E | | Aug 01 | North East |
| Niamey | Agades | 1658N 0758E | | Aug 01 | East |
| | Gao | 1614N0001W | | Aug 01 | South West |
| | Tessalit | 2015N 0059E | | Aug 01 | North West |
| | Zinder | 1347N 0900E | | Aug 01 | South west |

APPENDIX B

| FIR | Station | Coordinates Coordonnées | Frequency Fréquence | Implementation date/Date de mise en oeuvre | Coverage Couverture |
|------------------|--------------|----------------------------|------------------------|--|------------------------|
| Accra | Niamtougou | 0900N0109E | TBD | 2003 | North East |
| | Sao Tome | 0020N0644E | TBD | 2003 | South East |
| Beira | Beira | 1945S3453E | 127.700 | Oct 2002 | |
| | Inhambane | 2352S3525E | 127.700 | TBD | |
| | Nampula | 1506S3917E | 127.700 | TBD | |
| | Songo | 1536S3246E | 127.700 | Sept 2002 | |
| Brazzaville | Bria | | | 2002 | South |
| | Makokou | | | 2002 | South |
| | Pointe Noire | 0448S1152E | | 2002 | North West |
| Dakar Oceanic | Santiago | | | 2002/2003 | West |
| Dar es Salaam | Songea | 1041S3535E | 123.300 | | East |
| | Sumbawanga | | 119.300 | | West |
| Entebbe | Gulu | | 128.500 | | |
| | Kasese | | 128.500 | | |
| | Soroti | 0143N3337E | 128.500 | | |
| Lilongwe | Muzuzu | 1127S3401E | 120.600 | | |
| | Zomba | 1523S3523E | 120.600 | | |
| Luanda | Lubango | 1455S1337E | | | |
| | Menongue | 1438S1741E | | | |
| | Saurimo | 0940S2024E | | | |
| Lusaka | Chipata | 1333S3236E | 120.500 | | |
| | Kasama | 1012S3108E | 120.500 | | |
| | Livingstone | 1749S2550E | 120.500 | | |
| | Mansa | 1108S2852E | 120.500 | | |
| | Mongu | 1513S2309E | 120.500 | | |
| | Solwezi | 1210S2622E | 120.500 | | |
| Ndjamena | Garoua | 0920N1318E | | 2002 | South west |
| Niamey | Tombouctou | 1644N0300W | | 2002 | West |

APPENDIX C

Deficiencies - AMS

| <i>State</i> | <i>Requirements</i> | <i>Facilities or Services</i> | <i>Description of Deficiency</i> | <i>Date first reported</i> | <i>Comments on Deficiency</i> | <i>Description of Corrective action</i> | <i>Executing Body</i> | <i>Target date for implement</i> | <i>Priority</i> |
|---------------------------|---------------------|-------------------------------|--|----------------------------|---------------------------------------|--|-----------------------|----------------------------------|-----------------|
| <i>Angola</i> | | | | | | | | | |
| | AMS AFI/7 Rec. 9/12 | Luanda ACC | Inadequate VHF coverage of busy ATS routes | 1998 | Implement remote VHF stations | 5 VHF stations to be installed by the end of 2001 | ENANA | 2001 | U |
| <i>Congo</i> | | | | | | | | | |
| | AMS AFI/7 Rec. 9/12 | Brazzaville ACC | Inadequate VHF coverage of busy ATS routes | 1998 | | ER VHF installation in ASECNA progress | | 28/11/02 | U |
| <i>Dem. Rep. of Congo</i> | | | | | | | | | |
| | AMS AFI/7 Rec. 9/12 | Kinshasa FIR | HF poor quality. Selcal not available | 1998 | | Improve installations | DR Congo | | U |
| | AMS AFI/7 Rec. 9/12 | Kinshasa FIR | Inadequate VHF coverage of busy ATS routes | 1998 | | Extend VHF to all upper routes. Extended VHF coverage planned. | DR Congo | end 2001 | U |
| <i>Malawi</i> | | | | | | | | | |
| | AMS AFI/7 Rec. 9/12 | FIR Lilongwe | VHF coverage incomplete | 2001 | Install additional VHF relay stations | Extend VHF coverage | Malawi | | U |
| <i>Mozambique</i> | | | | | | | | | |
| | AMS AFI/7 Rec. 9/12 | Beira FIR | VHF coverage incomplete | 2002 | Install additional VHF relay stations | Extend VHF coverage | Mozambique | | U |
| <i>Nigeria</i> | | | | | | | | | |
| | AMS AFI/7 Rec. 9/12 | Lagos TWR | No back-up radio | 1998 | | To implement back-up radio | Nigeria | 28/11/2002 | U |

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|----------------|---------------------|-------------------------------|--|----------------------------|-------------------------------|---|-----------------------|----------------------------------|-----------------|
| | AMS AFI/7 Rec. 9/12 | Kano ACC | VHF coverage not adequate | 1998 | | VHF extension in progress | Nigeria | 28/11/2002 | U |
| <i>Somalia</i> | AMS AFI/7 Rec. 9/12 | Mogadishu ACC | Lack of VHF coverage of busy ATS routes | 1998 | | Install VHF relays | Somalia | | U |
| <i>Sudan</i> | AMS AFI/7 Rec. 9/12 | Khartoum FIR | Inadequate VHF coverage of busy ATS routes | 1998 | | VSAT remote VHF stations envisaged | Sudan | | U |