ENR 1.6 RADAR SERVICES AND PROCEDURES

1.6.1 Primary radar

1.6.1.1 Supplementary Services

1.6.1.1.1. A radar unit normally operates as an integral part of the parent ATS unit and provides radar service to aircraft, to the maximum extent practicable, to meet the operational requirement. Many factors, such as radar coverage, controller workload and equipment capabilities, may affect these services, and the radar controller shall determine the practicability of providing or continuing to provide radar services in any specific case.

1.6.1.1.2. A pilot will know when radar services are being provided because the radar controller will use the following phraseology... (aircraft call sign this is ...Area/Approach, radar identified/or radar contact.

a. passing... (beacon);

b. ... (radial I DME)FROM...;

c. executing radar turns VOR radial / DME... FROM... (STATION).

1.6.1.2 The application of radar control service

1.6.1.2.1. Radar identification is achieved according to the provisions specified by ICAO.

1.6.1.2.2. Radar control service is provided in controlled airspace to aircraft operating within the Lusaka and Livingstone TMA. This service may include:

a. radar separation of arriving, departing and en-route traffic;

b. radar monitoring of arriving, departing and en-route traffic to provide information on any significant deviation from the nominal flight path;

c. radar vectoring when required;

d. assistance to aircraft in emergency;

e. assistance to aircraft crossing controlled airspace;

f. warnings and position information on other aircraft considered to constitute a hazard;

g. information to assist in the navigation of aircraft;

h. information on observed weather;

i. radar watch when required.

1.6.1.2.3. The minimum horizontal radar separations are:

a. 5NM within Radar coverage

b. As specified by the appropriate Authority.

1.6.1.2.4. Levels assigned by the radar controller to pilots will provide a minimum terrain clearance according to the phase of flight.

1.6.1.3 ATS surveillance system and radio failure procedures

1.6.1.3.1 Radar failure

In the event of radar failure or loss of radar identification, instructions will be issued to restore non-radar standard separation and the pilot will be instructed to communicate with the parent ATS unit.

1.6.1.3.2 Radio failure

1.6.1.3.2.1. The radar controller will establish whether the aircraft radio receiver is working by instructing the pilot to carry out a turn or turns. If the turns are observed, the radar controller will continue to provide radar service to the aircraft.

1.6.1.3.2.2. If the aircraft's radio is completely unserviceable, the pilot should carry out the procedures for radio failure in accordance with ICAO provisions. If radar identification has already been established, the radar controller will vector other identified aircraft clear of its track until such time as the aircraft leaves radar coverage.

1.6.1.4 Graphic portrayal of area of radar coverage

Since the area of radar coverage is identical to that of SSR, see ENR 1.6.2.4 - Graphic portrayal of area of coverage of radar/SSR.

1.6.2 Secondary surveillance radar (SSR)

1.6.2.1 Emergency procedures

1.6.2.1.1. Except when encountering a state of emergency, pilots shall operate transponders and select modes and codes in accordance with ATC instruction. In particular, when entering Lusaka FIR, pilots who have already received specific instructions from ATC concerning the setting of the transponder shall maintain that setting until otherwise instructed.

1.6.2.1.2. Pilots of aircraft about to enter Lusaka FIR who have not received specific instructions from ATC concerning the setting of the transponder shall operate the transponder on Mode A/3, Code 24 (or 2400) before entry and maintain that code setting until otherwise instructed.

1.6.2.1.3. If the pilot of an aircraft encountering a state of emergency has previously been directed by ATC to operate the transponder on a specific code, this code setting shall be maintained until otherwise advised.

1.6.2.1.4. In all other circumstances, the transponder shall be set to Mode A/3, Code 77 (or 7700). Notwithstanding the procedure in 1.6.2.1.1 above, a pilot may select Mode A/3, Code 77 (or 7700) whenever the nature of the emergency is such that this appears to be the most suitable course of action.

Continuous monitoring of responses on Mode A/3, Code 77 is provided.

1.6.2.2 Radio communication failure and unlawful interference procedures

1.6.2.2.1 Radio communication failure procedure

In the event of an aircraft radio receiver failure, a pilot shall select Mode A/3, Code 76 (or 7600) and follow established procedures; subsequent control of the aircraft will be based on those procedures.

1.6.2.2.2 Unlawful interference procedure

Pilots of aircraft in flight subjected to unlawful interference shall endeavour to set the transponder to Mode A, Code 7500 to make the situation known, unless circumstances warrant the use of Mode A/B, Code 77 (or 7700).

1.6.2.3 System of SSR Code assignment

CATEGORY	LUSAKA (FLKK)		LIVINGSTONE(FLHN)		REMARKS
International	5500	5557	5561	5577	INTERNATIONAL & FIR
Domestic 1	5600	5657	5660	5677	DOMESTIC TMA
Domestic 2	5700	5757	5760	5777	DOMESTIC FIR
Others	5200	5257	5260	5277	MICROLIGHT & HELICOPTER

1.6.2.4 Graphic portrayal of area of coverage of radar/SSR

TO BE DEVELOPED