Statutory Instrument No. 44 of 2022

CIVIL AVIATION ACT
(Cap. 71:01)

CIVIL AVIATION (AERONAUTICAL RADIO FREQUENCY SPECTRUM UTILISATION) REGULATIONS, 2022

(*Published on 29th April, 2022*)

ARRANGEMENT OF REGULATIONS

REGULATION

IN EXERCISE of the powers conferred on the Minister of Transport and Public Works by section 89 of the Civil Aviation Act and on the recommendation of the Civil Aviation Authority the following Regulations are hereby made —

Part I — *Preliminary*

Citation

1. These Regulations may be cited as the Civil Aviation (Aeronautical Radio Frequency Spectrum Utilisation) Regulations, 2022.

Interpretation

2. In these Regulations, unless the context otherwise provides —

"air navigation service" means one or more of the following services provided for air navigation —

(*a*) traffic services;

(*b*) Instrument Flight Procedure Design (IFPD) services;

(*c*) Aeronautical Information Services (AIS);

(*d*) aeronautical cartographic services;

(*e*) aeronautical telecommunication services; and

(*f*) search and rescue services;

"air navigation service facility" means any facility used, available for use, or designed for use in aid of navigation of an aircraft, and includes —

(*a*) airports, landing fields, any structures, mechanisms, lights, beacons, marks, communication systems; or

(*b*) instruments or devices used as an aid to the safe taking off, navigation and landing of an aircraft; and

(*c*) any combination of such facilities;

"air navigation service provider (ANSP)" means an entity established for the purposes of providing one or more of the air navigation services as defined in these Regulations;

"air traffic management (ATM)" means the dynamic integrated management of air traffic and airspace including —

(*a*) air traffic services;

(*b*) airspace management; and

(*c*) air traffic flow management,

safely, economically and efficiently, through the provision of facilities and seamless services, in collaboration with all parties, and involving airborne and ground-based functions;

"air traffic management system" means a system that provides air traffic management through the collaborative integration of humans, information, technology, facilities and services, supported by air, ground or space based communications, navigation and surveillance;

"air traffic safety electronics personnel (ATSEP)" means a person directly engaged with operations, maintenance and installation activities of communications, navigation and surveillance (CNS) or air traffic management systems;

"double channel simplex" means a simplex using two frequency channels, one in each direction;

"Instrument Landing System (ILS)" means the equipment that provides precision guidance to an aircraft during the final stages of the approach, the signals can either be interpreted by the pilot from instruments or be input directly into the autopilot and flight management system, and comprise of the following basic components —

(*a*) Very High Frequency (VHF) localiser equipment, associated monitor system, remote control and indicator equipment;

(*b*) UHF glide path equipment, associated monitor system, remote control and indicator equipment; and

(*c*) an appropriate means to enable glide path verification checks;

"MANSOPS" means manual of air navigation services operations;

"offset frequency simplex" means a variation of a single channel simplex where telecommunication between two stations is achieved by using in each direction, frequencies that are intentionally slightly different but contained within a portion of the spectrum allotted for the operation;

"operational control communication" means communication required for the exercise of authority over the initiation continuation, diversion or termination of a flight in the interest of the safety of an aircraft and the regularity and efficiency of a flight;

"simplex" means a method in which telecommunication between two stations takes place in one direction at a time and when applied to the aeronautical mobile service, this method may be subdivided as follows —

(*a*) single channel simplex;

(*b*) double channel simplex; and

(*c*) offset frequency simplex;

"single channel simplex" means a simplex using the same frequency in each direction;

"VHF Digital Link (VDL)" means a constituent mobile sub network of the Aeronautical Telecommunication Network (ATN) operating in the aeronautical mobile VHF band; and

"VHF Omni-directional Radio Range (VOR)" means a short-range radio navigation aid that produces an infinite number of bearings that may be visualised as lines radiating from the beacon – the number of bearings, referred to as radicals (a radical is identified by its magnetic bearing from the VOR) can be limited to 360, one degree apart.

Application

3. These Regulations shall apply to any person providing a communications, navigation and surveillance facility service at an aerodrome and within a designated air space for civil aviation purposes.

Part II – *General Requirements*

Compliance with the Regulations

4. An air navigation service provider shall ensure that the minimum requirements for planning, installation, commissioning, training, operation and maintenance of a facility comply with these Regulations.

Certification of air navigation service provider Cap. 71:01 (Sub. Leg.)

5. A person shall not provide an air navigation service or operate a facility to support an air traffic service unless he or she holds an air navigation service provider certificate issued in accordance with the Civil Aviation (Certification of Air Navigation Services Providers) Regulations.

Approval by Authority

6. (1) A person shall not provide an air navigation service or operate a communications, navigation and surveillance facility or system in a designated aerodrome and airspace unless the facility or system is approved by the Authority.

(2) An air navigation service provider shall seek approval from the Authority for the installation, use, decommissioning, upgrading or relocation of a communications, navigation and surveillance facility in a designated aerodrome and airspace.

(3) For the purposes of subregulation (2), approval from the Authority shall be sought in accordance with the Civil Aviation (Certification of Air Navigation Service Providers) Regulations.

Notification requirement

7. An air navigation service provider shall notify the Authority of the air service provider's intention to procure, install, use, upgrade, decommission, or relocate a communications, navigation and surveillance facility in a designated aerodrome and airspace, 30 days prior to the commencement of the process.

Inspection and audit

8. (1) The Authority shall carry out a safety inspection on a communications, navigation and surveillance facility and audit an air navigation service provider's documents and records in order to determine the air navigation service provider's compliance with these Regulations.

(2) For the purposes of determining compliance with these Regulations, an inspector of the Authority shall have unrestricted access to the facilities, installations, records and documents of an air navigation service provider.

Siting and installation

9. (1) An air navigation service provider shall choose a site for the installation of a new communications, navigation and surveillance facility based on operational requirements, construction aspects and maintainability.

(2) An air navigation service provider shall establish procedures to ensure that a communications, navigation and surveillance system —

(*a*) is designed to meet the applicable operational specification for that facility;

(*b*) is installed and commissioned as required by the Authority;

(*c*) complies with applicable system characteristics and specification standards of the Authority; and

(*d*) is operated, maintained, available and reliable in accordance with the requirements of the Authority.

(3) A communications, navigation and surveillance facility shall be installed by an experienced ATSEP with the relevant rating for the facility.

Commission requirement

10. (1) An air navigation service provider shall establish procedures to ensure that —

(*a*) each new facility —

(i) is commissioned to meet the specifications for that facility, and

(ii) complies with applicable standards; and

(*b*) the system performance of a new facility has been validated by the necessary tests and that all parties involved with the operations and maintenance of the facility, including its maintenance contractors, have accepted and are satisfied with the test results.

(2) The procedures referred to in subregulation (1) shall include documentation of tests conducted on the facility prior to the commissioning of the facility, including tests that test the facility's compliance with applicable standards and any flight check required.

Availability and reliability of communications, navigation and surveillance (CNS) facility

11. (1) An air navigation service provider shall be responsible for the provision of communications, navigation and surveillance services and facilities to ensure that telecommunication information and data necessary for the safe, regular and efficient operation of air navigation is available.

(2) The functional specification of each of the air navigation service provider's telecommunication services shall include the following values or characteristics for each service —

(*a*) availability;

(*b*) reliability;

(*c*) accuracy;
(*d*) integrity;
(*e*) mean time between failure (MTBF); and
(*f*) mean time to repair (MTTF).

(3) The values referred to in subregulation (2) shall be derived or measured from either or both of the configuration of each service and the known performance of each service.

(4) An air navigation service provider shall describe in the operations manual the method used to calculate each of the values.

(5) For a radio navigation service, the air navigation service provider shall provide integrity values or characteristics for each kind of navigation aid and facility that forms part of the service.

(6) An air navigation service provider shall ensure that a communications, navigation and surveillance facility is installed with main and standby power supply as well as adequate air conditioning to ensure continuity of operation appropriate to the service being provided.

Monitoring, review and reporting of technical facility

12. An air navigation service provider shall monitor, review and report the performance of a technical facility in accordance with these Regulations.

Interface arrangement for support service

13. An air navigation service provider shall formalise interface arrangements with external organisations, where applicable, in the form of service level agreements, detailing —

(*a*) the interface and functional specifications of the support service;
(*b*) the service level of the support service such as availability, accuracy, integrity and recovery time of failure of service; and
(*c*) the monitoring and reporting of the operational status of the service to the service provider.

Keeping records

14. (1) An air navigation service provider shall maintain records which are necessary for the operation and maintenance of the air navigation service and establish procedures to identify, collect, index, store, maintain and dispose of such records.

(2) The procedures in subregulation (1) shall cover —

(*a*) the performance and maintenance history of each facility;
(*b*) the establishment of periodic test programmes for each facility;
(*c*) each item of test equipment required for the measurement of critical performance parameters;
(*d*) each reported or detected facility malfunction;
(*e*) each internal quality assurance review; and
(*f*) information about each person who is authorised to place facility into operational service.

(3) An air service provider shall ensure that data and voice for an air navigation service operational system are recorded continuously and that a procedure is established for the retention and utilisation of such recordings for analysis.

(4) An air navigation service provider shall keep records under the control of the relevant key personnel and control access to the records system to ensure appropriate security.

(5) Notwithstanding subregulation (4), an air navigation service provider may, where necessary, avail copies of records to personnel.

Keeping and retention of documents

15. (1) An air navigation service provider shall maintain documents which are necessary for the operation and maintenance of the air navigation service and establish a process for the control of such documents.

(2) Without prejudice to the generality of subregulation (1), an air service provider shall keep the following documents —

(*a*) a copy of these Regulations;
(*b*) a copy of the Civil Aviation Act;
(*c*) the air navigation service provider's Operations manual;
(*d*) ICAO Annex 10 Volumes I to V, ICAO doc 8071 – Manual on Testing of Radio Navigation Aids and other relevant ICAO documents;
(*e*) records of malfunction and safety incident reports;
(*f*) records of internal audit reports;
(*g*) agreements with other organisations;
(*h*) records of investigation into serious incidents;
(*i*) records of staff deployment, duty and leave rosters;
(*j*) records of equipment spares;
(*k*) records of job description, training programme and plan of each staff member;
(*l*) relevant equipment manuals;
(*m*) technical standards;
(*n*) instructions;
(*o*) maintenance procedures;
(*p*) site logbooks;
(*q*) system backup data;
(*r*) equipment and test gear inventory;
(*s*) all technical standards and technical material related to air navigation service developed by the Authority; and
(*t*) any other documentation necessary for the operation and maintenance of a communications, navigation and surveillance facility.

(3) Where a document is kept as an electronic record and a paper copy of such electronic record is made, the copy shall be subjected to the same controls as paper documents.

(4) A document retained in accordance with this regulation shall be kept for at least three years if paper based or 180 days if computer based.

(5) An air navigation service provider may, where necessary, avail a copy of a document maintained under this regulation to relevant personnel.

Amendment and authorisation of documents

16. (1) An air navigation service provider shall —

(*a*) establish a process to amend and authorise documents, where applicable, to ensure that —
  (i) documents are up to date,
  (ii) only current versions of the documents are available, and
  (iii) the identity of the person who authorised the creation or the revision of a document is readily identifiable; and
(*b*) ensure that documents are amended in accordance with the established principles of quality management.

Operations manual

17. (1) An air navigation service provider shall develop and maintain an operations manual which shall serve to demonstrate how the air navigation service provider shall comply with the requirements provided for under these Regulations.

(2) An operations manual shall contain —

(*a*) the information required of the air navigation service provider in accordance with the Civil Aviation (Certification of Air Navigation Services Providers) Regulations;

(*b*) an organisational chart of the air navigation service provider and its maintenance contractors, if any, that shows —

(i) the name and position of each personnel, and

(ii) the qualification, experience, duties and responsibilities of personnel who are responsible for ensuring the organisation's compliance with the requirements provided for under these Regulations;

(*c*) an overall operations and maintenance plan for the aeronautical telecommunication service;

(*d*) an operations and maintenance plan for each facility;

(*e*) information on the compliance of each facility with these Regulations;

(*f*) information on the compliance of each facility with applicable aeronautical telecommunication standards;

(*g*) the operation and maintenance instructions for each facility; and

(*h*) the system performance target for each facility such as its availability and reliability.

(3) An operations manual shall consist of —

(*a*) a main manual covering the main areas that need to be addressed;

(*b*) supporting documents; and

(*c*) other manuals such as the operations and maintenance plan of each facility.

(4) An air navigation service provider shall —

(*a*) control the distribution of the operations manual;

(*b*) amend the operations manual where necessary to maintain the accuracy of the information; and

(*c*) keep the contents of the operations manual up to date.

Operations and maintenance plan

18. (1) An air navigation service provider shall establish and maintain an operations and maintenance plan for each facility.

(2) The operations and maintenance plan shall include —

(*a*) a procedure for the periodic inspection and testing of each facility to verify that the facility meets the operational and performance specifications of that facility;

(*b*) the details of a flight test where necessary such as the standards and procedures to be used and a flight test interval which shall be in compliance with guidelines prescribed by the Authority;

(*c*) the interval between periodic inspection and flight test, the basis for the interval, and whenever the interval is changed, the reasons for such change;

(*d*) the operations and maintenance instructions for each facility;

(*e*) an analysis of the number of personnel required to operate and maintain each facility taking into account the workload required;

(*f*) the corrective plan and procedures for each facility including whether the repair of modules and components are undertaken in-house or by equipment manufacturers; and

(*g*) the spare support plan for each facility.

(3) The maintenance plan or the operating and maintenance instructions for each facility shall specify the test equipment requirements for all levels of operations and maintenance undertaken.

Periodic inspection and testing of CNS facility

19. (1) An air navigation service provider shall —

(*a*) establish a procedure for the periodic inspection and testing of the air navigation service provider's communications, navigation and surveillance systems to verify that each facility meets the applicable operational requirements and performance specifications for that facility;

(*b*) ensure —

(i) that appropriate inspection, measuring and test equipment is available for staff to maintain the operation of each facility, and

(ii) that the inspection, measuring and test equipment is controlled, calibrated and maintained so that such equipment has the precision and accuracy necessary for the measurements and tests to be performed; and

(*c*) make a test transmission if —

(i) the transmission is necessary to test a service, facility or equipment,

(ii) within a reasonable time before commencement of the transmission, the air navigation service provider informs the users about the transmission,

(iii) at the commencement of the transmission, the air navigation service provider identifies the transmission as a test transmission, and

(iv) the transmission contains information identifying it as a test transmission.

(2) For the purposes of paragraph (*a*), a periodic inspection shall include inspection of —

(i) the security of the facility and site,

(ii) adherence to the approved maintenance programme,

(iii) the upkeep of the equipment, building site and site service, and

(iv) the adequacy of the facility recordings and documentation.

Security of CNS facility

20. (1) An air navigation service provider shall establish a security programme for a communications, navigation and surveillance facility.

(2) The security programme referred to in subregulation (1) shall specify the physical security requirements, practices and procedures to be followed for the purposes of minimising the risk of destruction of, damage to, or interference with the operation of a communications, navigation and surveillance facility.

(3) An air navigation service shall ensure that —

(*a*) a communications, navigation and surveillance system and service are protected against cyber threats and attacks to a level consistent with the applicable service requirements; and

(*b*) an end system supporting air navigation security service is capable of —

(i) authenticating the identity of peer end systems,

(ii) authenticating the source of messages, and

(iii) ensuring the data integrity of the messages;

(*c*) strategies and best practices on the protection of critical information and communications technology systems used for civil aviation purposes are developed and implemented; and

(*d*) policies are established to ensure that, for critical aviation systems —

(i) system architectures are secure by design,

(ii) systems are resilient,

(iii) methods for data transfer are secured ensuring integrity and confidentiality of data,

(iv) system monitoring and incident detection and reporting methods are implemented, and

(v) forensic analysis of cyber incidents is carried out.

Flight inspection

21. An air navigation service provider shall ensure that a radio navigation aid is available for use by an aircraft engaged in air navigation and that the radio navigation aid is subjected to periodic ground and flight inspections.

Facility check after accident or incident

22. An air navigation service provider shall establish a procedure to check and accurately record the operating condition of any communications, navigation and surveillance facility that may have been used by an aircraft involved in an accident or incident.

Radio frequency management

23. (1) An air navigation service provider shall —

(*a*) establish a procedure for the management and protection of the aeronautical radio spectrum;

(*b*) designate a responsible person to control any frequency allocation within the aeronautical radio spectrum to ensure that there is no conflict or interference with any radio station or facility;

(*c*) ensure that there is no willful transmission of unnecessary or anonymous radio signals, messages or data by any of its radio stations; and

(*d*) keep up to date records of all allocated frequencies.

(2) Where an air navigation service provider suspects or has reasonable cause to suspect that the information that is being provided by a facility that provides radio signals is erroneous, the air navigation service provider shall ensure that such a facility is not allowed to operate.

Radio interference reporting

24. (1) An air navigation provider shall establish a procedure with the Botswana Communications Regulatory Authority (BOCRA) to address the occurrence of a radio frequency interference.

(2) Where a radio frequency interference occurs, an air navigation service provider shall —

(*a*) report the radio frequency interference to BOCRA;

(*b*) investigate the radio frequency interference occurrence; and

(*c*) take follow-up action to prevent recurrence.

CNS personnel training and other requirements

25. (1) A person shall not perform a function related to the installation, training, operation or maintenance of communications, navigation and surveillance system unless —

(*a*) that person has successfully completed training in the performance of that function in line with the ATSEP competency-based training requirements; and

(*b*) the air navigation service provider is satisfied that the technical person is competent in performing that function.

(2) An air navigation service provider shall —

(*a*) ensure that it employs a sufficient number of personnel who possess the skills and competencies required in the provision of an aeronautical telecommunication service;

(*b*) provide in the MANSOPS, an analysis of the personnel required to perform the communications, navigation and surveillance service for each facility taking into account the duties and workload required;

(*c*) develop job descriptions for each of its staff that depict the job purpose, key responsibilities and outcome to be achieved by each staff;

(*d*) develop an overall training policy and programme for the organisation;

(*e*) designate an officer who will be in charge of training or on the job training at the operational stations;

(*f*) maintain individual training records for staff;

(*g*) conduct a yearly review of the training plan for each staff at the beginning of the year to —

(i) identify any gaps in competency and changes in training requirement, and

(ii) prioritise the type of training required for the coming year.

(3) An officer referred to in subregulation (2) (*e*) shall have satisfactorily completed on the job training instructional techniques course.

(4) An air navigation service provider shall ensure that the training requirements under these Regulations similarly apply to its maintenance contractors.

Facility malfunction incident reporting

26. (1) An air navigation service provider shall report any serious service failure or safety incident to the Authority.

(2) An air navigation service provider shall establish procedures for the reporting, collection and notification of facility malfunction incidents and document such procedures in the MANSOPS.

(3) Where a safety incident occurs, an air navigation service provider shall investigate the incident to establish how and why the incident happened, including possible organisational contributing factors, and recommend actions to prevent recurrence.

(4) An air navigation service provider shall compile a report of a safety incident and review the report periodically with the air navigation service provider's maintenance contractors to —

(*a*) determine the cause of the incident and any adverse trends;

(*b*) implement corrective and preventive action where necessary to prevent recurrence of the incident; and

(*c*) implement any measure to improve the safety performance of the aeronautical telecommunication service.

Operational status of CNS system

27. An air service provider shall maintain information on the operational status of each communications, navigation and surveillance facility that is essential for the enroute, approach, landing, and take-off phases of a flight to meet the operational needs of the service being provided.

Safety case and service interruption

28. An air navigation service provider shall —

(*a*) cause a safety case or the equivalent to be conducted during the commissioning of a safety critical system including —

(i) an automated air traffic control system,

(ii) a communication system, or

(iii) an ILS;

(*b*) establish a procedure to be used —

(i) in the event of interruption to, or

(ii) when upgrading a communications, navigation and surveillance system;

(*c*) specify an acceptable recovery time for each service; and

(*d*) ensure that human factor principles are observed in the design, operation and maintenance of an aeronautical telecommunication facility.

Notification of aeronautical facility status

29. (1) An air navigation service provider shall, as soon as possible, forward to the Aeronautical Information Services information —

(*a*) concerning the operational details of any new facility for publication in the aeronautical information publication;

(*b*) concerning any change in the operational status of any existing facility for the issuance of a Notice to Airmen; and

(*c*) concerning any change in the operational status of any existing facility for the issuance of a Notice to Airmen as set out in the Civil Aviation (Aeronautical Information Services) Regulations.

Cap. 71:01 (Sub. Leg.)

(2) An air service provider shall ensure that the information that has to be published in terms of subregulation (1) is accurate.

Part III — *Distress Frequencies*

Frequencies for emergency locator transmitters (ELTs) for search and rescue Cap. 71:01 (Sub. Leg.)

30. An emergency locator transmitter carried out in compliance with the Civil Aviation (Aircraft Operations) Regulations shall operate on both 406 MHz and 121.5 MHz.

Search and rescue frequencies

31. (1) The frequencies 3 023 kHz and 5 680 kHz shall be employed where there is a requirement for the use of high frequencies for search and rescue scene of action coordination purposes.

(2) Where a specific frequency is required for communication between a rescue coordination center and an aircraft engaged in search and rescue operations, the specific frequency shall be selected regionally from the appropriate aeronautical mobile frequency bands in light of the nature of the provisions made for the establishment of a search and rescue aircraft.

Part IV — *Utilisation of Frequencies below 30 MHz*

Method of operations

32. In the aeronautical mobile service, a single channel simplex shall be used in a radio telephone communication utilising a radio frequency below 30 MHz in the band allocated exclusively to the aeronautical mobile (R) service.

Assignment of single sideband channel Cap. 71:01 (Sub. Leg.)

33. A single sideband channel shall be assigned in accordance with Schedule 1 of these Regulations and the Civil Aviation (Communication Systems) Regulations.

Assignment of frequency for aeronautical operational control communication

34. A frequency for an aeronautical operational control communication shall be assigned in accordance with Schedule 1 of the Regulations and the Civil Aviation (Communication Systems) Regulations.

Non-directional radio beacon frequency management

35. (1) The management of a non-directional radio beacon frequency shall take into account —

(*a*) the interference protection required at the edge of the rated coverage;

(*b*) the application of the figures shown for typical automatic direction finder equipment;

(*c*) the geographical spacing and the respective rated coverage; and

(*d*) the possibility of interference from spurious radiation generated by non -aeronautical sources.

(2) The assignment of a common frequency to both the inner locators shall be permitted in order to alleviate frequency congestion problems at locations where two separate ILS facilities serve opposite ends of a single runway:

Provided that —

(*a*) the operational circumstances permit;

(*b*) each locator is assigned a different identification signal; and

(*c*) arrangements are made whereby locators using the same frequency cannot radiate simultaneously.

Part V — *Utilisation of Frequencies above 30 MHz*

General allotment of frequency band 117.975 – 137.000 MHz

36. A block allotment of the frequency band 117.975 – 137.000 MHz shall be as set out under Schedule 2 of these Regulations.

Frequency separation and limit of assignable frequency

37. (1) In the frequency band 117.975 – 137.000 MHz, the lowest assignable frequency shall be 118.000 MHz and the highest assignable frequency shall be 136.975 MHz.

(2) The minimum separation between assignable frequencies in the aeronautical mobile (R) service shall be 8.33 kHz.

(3) The requirements for mandatory carriage of equipment specifically designed for —

(*a*) 8.33 kHz channel spacing;

(*b*) VDL Mode 2;

(*c*) VDL Mode 3; and

(*d*) VDL Mode 4,

shall be made on the basis of regional air navigation agreements which specify the airspace of operation and the implementation timescales for the carriage of equipment, including the appropriate lead time.

(4) The agreements referred to in subregulation (3) shall provide for at least 2 years' notice of mandatory carriage of airborne systems.

(5) The publication of an assigned frequency or channel of operation in a region where a 25 kHz channel spacing (DSBAM and VHF digital link (VDL)) and 8.33 kHz DSB-AM channel spacing are in operation, shall conform to the channel contained under Schedule 2 of these Regulations.

Frequencies used for particular function

38. (1) The emergency channel (121.500 MHz) shall only be used for the following emergency purposes —

(*a*) to provide a clear channel between an aircraft in distress or emergency and a ground station when the normal channel is being utilised by other aircrafts;

(*b*) to provide a VHF communication channel between an aircraft and an aerodrome not normally used by international air services in case of an emergency condition arising;

(*c*) to provide a common VHF communication channel between an aircraft, either civil or military, and between such aircraft and surface services involved in a common search and rescue operation prior to changing, when necessary, to the appropriate frequency;

(*d*) to provide air-ground communication with an aircraft when airborne equipment failure prevents the use of the regular channels;

(*e*) to provide for a channel for the operation of an emergency locator transmitter and for communication between a survival aircraft and an aircraft engaged in search and rescue operations; and

(*f*) to provide a common VHF channel for communication between —

(i) a civil aircraft and an intercepting aircraft or an intercepting control unit, and

(ii) a civil aircraft or an intercepting aircraft and an air traffic service unit, in the event of interception of the civil aircraft.

(2) The emergency channel (121.500 MHz) shall —

(*a*) be provided at —

(i) an area control and flight information center;

(ii) an aerodrome control tower;

(iii) an approach control office serving international aerodromes and international alternate aerodromes, and

(iv) any additional location designated by the appropriate air traffic safety (ATS) authority where the provision of that frequency is considered necessary to ensure immediate reception of distress calls or to serve the purposes specified in subregulation (1);

(*b*) be available —

(i) to intercept a control unit where necessary for the purpose specified in subregulation (1) (*f*), and

(ii) only with the characteristics as contained in the Civil Aviation (Communication Systems) Regulations;

(*c*) be guarded —

(i) continuously during the hours of service of the unit at which it is installed, and

(ii) on a single channel simplex operation basis.

(3) An air-to-air VHF communication channel on the frequency of 123.450 MHz shall be designated to enable an aircraft engaged in a flight over remote and oceanic areas out of range of VHF ground stations, to exchange necessary operational information and to facilitate the resolution of operational problems.

(4) In remote and oceanic areas out of range of VHF ground stations, an air-to-air VHF communications channel on the frequency 123.450 MHZ shall be available only with the characteristics as specified in the Civil Aviation (Communication Systems) Regulations.

(5) For the purposes of this regulation, ATS authority means the relevant authority designated by the State responsible for providing air traffic services in the airspace concerned.

Common signalling channel VDL mode 4

39. The frequencies 136.925 MHz and 113.250 MHz shall, in areas where VHF Data Link (VDL) Mode 4 is implemented, be provided as common signaling channels to the VHF digital link mode 4.

Auxiliary frequency for search and rescue operation

40. (1) Where a requirement is established for the use of a frequency auxiliary to the emergency channel (121.500 MHz) as contained in regulation 38 (1) (*c*), the frequency 123.100 shall be used.

(2) The auxiliary search and rescue channel 123.100 MHz shall be available only with the characteristics as specified in Civil Aviation (Communication Systems) Regulations.

41. A provision concerning the deployment of a VHF frequency and the avoidance of harmful interference shall be as set out under Schedule 3 of these Regulations.

Deployment of VHF frequency and the avoidance of harmful interference

42. (1) A single channel simplex operation shall be used in the frequency band 117.975 – 137 MHz at all stations providing a service for aircrafts engaged in international air navigation.

Method of operations

(2) The ground-to-air voice channel associated with a standard radio navigational aid shall be used, in addition to the channel referred to in subregulation (1), subject to regional agreement, for broadcast or communication purposes or both.

43. (1) A frequency in the band 117.975 - 137.000 MHz for use in an aeronautical mobile (R) service shall be selected from the list set out under Schedule 4 of these Regulations.

Plan of assignable VHF radio frequency for use in the international aeronautical mobile service

(2) A frequency for operational control communications that is required to enable an aircraft operating agency to meet the obligations under the Civil Aviation (Aircraft Operations) Regulations, shall be selected from a dedicated band which is determined regionally.

(3) A frequency allotted for use in the aeronautical mobile (R) service in a particular region shall be limited to the number determined as being necessary for operational needs in the region.

44. A block allotment for the frequency band 108 – 117.975 MHz shall be as follows —

Utilisation in the band 108 – 117.975 MHz

(*a*) for band 108 – 111.975 MHz —

(i) ILS in accordance with the Civil Aviation (Radio Navigation Aids) Regulations, and

Cap. 71:01 (Sub. Leg.)

(ii) VOR provided that —

(*aa*) no harmful adjacent channel interference is caused to ILS;

(*bb*) only frequencies ending in either even tenths or even tenths plus a twentieth of a megahertz are used; and

(*cc*) Global Navigation Satellite Systems ground-based augmentation system in accordance with Civil Aviation (Radio Navigation Aids) Regulations, provided that no harmful interference is caused to the ILS and VOR.

(*b*) for band 111.975 – 117.975 MHz —

(i) VOR, and

(ii) Global Navigation Satellite Systems ground based augmentation system in accordance with the Civil Aviation (Radio Navigation Aids) Regulations, provided that no harmful interference is caused to VOR.

45. (1) The frequency for an ILS facility for regional assignment planning shall be selected in the following order —

Regional assignment planning

(*a*) a localiser channel ending in odd tenths of a megahertz and its associated glide path channels; and

(*b*) a localiser channel ending in odd tenths plus a twentieth of a megahertz and its associated glide path channel.

(2) An ILS channel identified by a localiser frequency ending in an odd tenth plus one twentieth of a megahertz in the band 108 – 111.975 MHz shall be permitted for use on the basis of a regional agreement.

(3) For the purposes of regional assignment planning, a frequency for a VOR facility shall be selected in the following order —

(*a*) a frequency ending in odd tenths of a megahertz in the band 111.975 – 117.975 MHz;

(*b*) a frequency ending in even tenths of a megahertz in the band 111.975 – 117.975 MHz;

(*c*) a frequency ending in even tenths of a megahertz in the band 108 – 111.975 MHz;

(*d*) a frequency ending in 50 kHz in the band 111.975 – 117.975 MHz, except as set out in subregulation (4); and

(*e*) a frequency ending in even tenths plus a twentieth of a megahertz in the band 108 – 111.975 MHz except as set out in subregulation (4).

(4) A frequency for a VOR facility ending in even tenths plus a twentieth of a megahertz in the band 108 – 111.975 MHz and a frequency ending in 50 kHz in the band 111.975 – 117.975 MHz, shall be permitted for use on the basis of a regional agreement, when it becomes applicable, in accordance with the following –

(*a*) in the band 111.975 – 117.975 MHz for restricted use;

(*b*) in the band 111.975 – 117.975 MHz for general use, at a date fixed by the International Civil Aviation Council but at least one year after the approval of the regional agreement concerned; and

(*c*) in the band 108 – 111.975 MHz for general use, at a date fixed by the Council but allowing a period of two years or more after the approval of the regional agreement concerned.

(5) For the purposes of this regulation, Council means the International Civil Aviation Council.

Airborne equipment protection while deploying VOR system

46. An existing VOR system within an interference range of a facility utilising 50 kHz channel spacing shall be modified to comply with the provisions of Civil Aviation (Radio Navigation Aids) Regulations, in order to protect the operation of airborne equipment during the initial stages of deploying a VOR system utilising 50 kHz channel spacing, in an area where the existing facility does not fully conform with the Civil Aviation (Radio Navigation Aids) Regulations.

Frequency deployment

47. (1) A geographical separation between facilities operating on the same and adjacent frequencies shall be determined regionally and shall be based on the following criteria —

(*a*) the required functional service radii of the facilities;

(*b*) the maximum flight altitude of the aircraft using the facilities; and

(*c*) the desirability of keeping the minimum instrument flight region altitude as low as the terrain will permit.

(2) The assignment of an identical ILS localiser and a glide path paired frequency shall be allowed to alleviate a frequency congestion problem at a location where two separate ILS facilities serve opposite ends of the same runway or different runways at the same airport:

Provided that —

(*a*) the operational circumstances permit;

(*b*) each localiser is assigned a different identification signal; and

(*c*) an arrangement is made whereby the localiser and the glide path which is not in operational use cannot radiate.

48. (1) A distance measuring equipment operating channel bearing the suffix "X" or "Y" as contained in the Civil Aviation (Radio Navigation Aids) Regulations shall be chosen on a general basis without restriction. Utilisation in the band 960 – 1 215 MHz for distance measuring equipment

(2) A distance measuring equipment operating channel bearing the suffix "W" or "Z" as contained in the Civil Aviation (Radio Navigation Aids) Regulations shall be chosen on the basis of a regional agreement when the distance measuring equipment operating channel becomes applicable.

(3) A channel for distance measuring equipment associated with the ILS for regional assignment planning shall be selected from under Schedule 5 of these Regulations.

49. (1) A distance measuring equipment channel in Groups 1 to 5 shall be permitted for general use. Distance measuring equipment channels groups 1 to 5

(2) When selecting a channel for an assignment purpose where a distance measuring equipment is intended to operate on a runway in association with an ILS, the distance measuring equipment channel, where possible, shall be selected from Group 1 or 2 and paired with the ILS frequency as indicated in the distance measuring equipment channeling and pairing table under the Civil Aviation (Radio Navigation Aids) Regulations.

50. A distance measuring equipment channel in Groups 6 to 10 shall be permitted for use on the basis of a regional agreement where it becomes applicable in accordance with the conditions set out in regulation 49 (2). Distance measuring equipment channels groups 6 to 10

Part VI — *Exemptions*

51. (1) A person may apply in writing to the Authority for an exemption from any provision of these Regulations. Application for exemption

(2) An application in subregulation (1) shall —

(*a*) contain the applicant's —

(i) name,

(ii) physical address and mailing address,

(iii) telephone and facsimile numbers, and

(iv) email address;

(*b*) include —

(i) a citation of the specific requirement from which the applicant seeks exemption,

(ii) an explanation of why the exemption is needed,

(iii) a description of the type of operations to be conducted under the proposed exemption,

(iv) the proposed duration of the exemption,

(v) an explanation of how the exemption would be in the public interest, and

(vi) a detailed description of the alternative means by which the applicant will ensure a level of safety equivalent to that established by the regulation in question; and

(*c*) specify the time period within which the Authority shall expect the aviation service provider to be fully compliant with these Regulations.

52. The Authority shall review and publish a granted exemption as a means of notification of the exemption. Review and publication of exemption

Drug and alcohol testing

53. (1) A person who performs any function provided by these Regulations, directly or by contract, may be tested for drug or alcohol usage.

(2) A person who —

(*a*) refuses to submit to a test to indicate the percentage by weight of alcohol in the blood; or

(*b*) refuses to submit to a test to indicate the presence of a narcotic drug, marijuana, or depressant or stimulant drug or substance in the body when requested by a law enforcement officer or the Authority, or refuses to furnish or to authorise the release of the test results requested by the Authority shall —

(i) be denied any licence, certificate, rating, qualification, or authorisation issued under these Regulations for a period of up to one year from the date of that refusal, or

(ii) have their licence, certificate, qualification or authorisation issued under these Regulations suspended or revoked.

Change of name

54. (1) A holder of an air navigation service provider certificate issued under these Regulations may apply to the Authority for —

(*a*) a replacement of the certificate if lost or destroyed;

(*b*) a change of name on the certificate; or

(*c*) an endorsement on the certificate.

(2) When making an application under subregulation (1), the holder of a certificate shall submit to the Authority —

(*a*) the original certificate; or

(*b*) a copy in the case of a loss of the original; and

(*c*) a court order or other legal documents verifying the name change.

(3) The Authority shall return to the holder of a certificate, with the appropriate changes applied for, if any, the originals specified in subregulation (2) and, where necessary, retain copies of the certificate.

Change of address

55. (1) A holder of an air navigation service provider certificate issued under these Regulations shall notify the Authority of a change in his or her physical and mailing address within 14 days of such change.

(2) A person who fails to notify the Authority of a change in his or her physical or mailing address within the time frame specified in subregulation (1) shall not exercise the privileges of that certificate.

Replacement of documents

56. A person may apply to the Authority in Form A as set out under Schedule 6 for the replacement of a document issued under these Regulations where such a document is lost or destroyed.

Use and retention of documents and records

57. (1) A person shall not —

(*a*) use any certificate or exemption issued or required by or under these Regulations which has been forged, altered, cancelled, or suspended, or to which he is not entitled;

(*b*) forge or alter any certificate or exemption issued or required by or under these Regulations;

(*c*) lend any certificate or exemption issued or required by or under these Regulations to any other person;

(*d*) make any false representation for the purpose of procuring for himself or herself or any other person the grant, issue, renewal or variation of any such certificate or exemption; or

(*e*) mutilate, alter, render illegible or destroy any records, or any entry made therein, required by or under these Regulations to be maintained, or knowingly make, or procure or assist in the making of, any false entry in any such record, or willfully omit to make a material entry in such record.

(2) All records required to be maintained by or under these Regulations shall be recorded in a permanent and indelible material.

(3) A person shall not issue any certificate or exemption under these Regulations unless he or she is authorised to do so by the Authority.

(4) A person shall not issue any certificate referred to in subregulation (3) unless he or she has satisfied himself or herself that a statement contained in the certificate is correct and that the applicant is qualified to hold that certificate.

Report of violation

58. (1) Any person who knows of or suspects a violation of these Regulations shall report it to the Authority.

(2) For purposes of subregulation (1), the Authority shall determine the nature and type of investigation or enforcement action that needs to be taken.

Part VIII — *Offences and Penalties*

Offences and penalties

59. (1) A person who contravenes any provision of these Regulations, commits an offence, and is liable to a fine not exceeding P100 000 or to imprisonment for a term not exceeding six months, or to both, and in the case of a continuing contravention, each day of the contravention shall constitute a separate offence.

(2) Notwithstanding subregulation (1), where it is proved that an act or omission of any person which would otherwise have been a contravention by that person of these Regulations was due to any cause not avoidable by the exercise of reasonable care by that person, the act or omission shall be deemed not to be a contravention by that person of these Regulations.

Appeal
Cap. 71:01

60. A person aggrieved by the decision of the Authority under these Regulations may, within 14 days of such decision, appeal to the Appeals Tribunal established under section 79 of the Act.

Savings provision

61. (1) Any communications, navigation and surveillance facility and equipment that was installed and operated before the commencement of these Regulations shall remain operational.

(2) Notwithstanding subregulation (1), the Authority may require that a facility and equipment installed and operated before the commencement of these Regulations be subjected to an assessment to determine the extent to which it complies with these Regulations.

(3) Where the outcome of an assessment under subregulation (2) shows non-compliance with these Regulations, the air navigation service provider may be required to perform corrective action to rectify the anomalies or to cease operation of such facility or equipment.

SCHEDULES

Schedule 1

Assignment of single sideband channels

(regs. 33 & 34)

1.1.1. For the operational use of the channels concerned, an administration shall take into account the provisions of 27/19 of Appendix 27 of the International Telecommunications Union (ITU) Radio Regulations.

1.1.2. The use of an aeronautical mobile (R) frequency below 30 MHz for an international operation should be coordinated as specified in Appendix 27 of the ITU Radio Regulations as follows—

(*a*) 27/19 The International Civil Aviation Organization (ICAO) coordinates radio communications of the aeronautical mobile (R) service with international aeronautical operations and this Organisation shall be consulted in all appropriate cases in the operational use of the frequencies in the Plan.

1.1.3. Where international operating requirements for HF communications cannot be satisfied by the Frequency Allotment Plan at Part 2 of Appendix 27 to the ITU Radio Regulations, an appropriate frequency may be assigned as specified in Appendix 27 by the application of the following provisions —

(*a*) 27/20 It is recognised that not all the sharing possibilities have been exhausted in the Allotment Plan contained in this Appendix. Therefore, in order to satisfy particular operational requirements which are not otherwise met by this Allotment Plan, administrations may assign frequencies from the aeronautical mobile (R) bands in areas other than those to which they are allotted in this Plan. However, the use of the frequencies so assigned must not reduce the protection to the same frequencies in the areas where they are allotted by the Plan below that determined by the application of the procedure defined in Part I, Section II B of this Appendix;

(*b*) 27/21 When necessary to satisfy the needs of international air operations, administrations may adapt the allotment procedure for the assignment of aeronautical mobile (R) frequencies, which assignments shall then be the subject of prior agreement between administrations affected; and

(*c*) 27/22 The coordination described in No. 27/19 shall be effected where appropriate and desirable for the efficient utilisation of the frequencies in question, and especially when the procedures of No. 27/21 are unsatisfactory.

1.1.4. The use of classes of emission J7B and J9B shall be subject to the following provisions of Appendix 27 —

(*a*) 27/12 For radiotelephone emissions the audio frequencies will be limited to between 300 and 2 700 Hz and the occupied bandwidth of other authorized emissions will not exceed the upper limit of J3E emissions. In specifying these limits, however, no restriction in their extension is implied in so far as emissions other than J3E are concerned, provided that the limits of unwanted emissions are met (see Nos. 27/73 and 27/74);

(*b*) 27/14 On account of the possibility of interference, a given channel shall not be used in the same allotment area for radiotelephony and data transmissions; and

(*c*) 27/15 The use of channels derived from the frequencies indicated in 27/18 for the various classes of emissions other than J3E and H2B will be subject to special arrangements by the administrations concerned and affected in order to avoid harmful interference which may result from the simultaneous use of the same channel for several classes of emission.

1.2. Assignment of frequencies for aeronautical operational control communications

1.2.1. Worldwide frequencies for aeronautical operational control communications are required to enable aircraft operating agencies to meet the obligations contained in Civil Aviation (Operations of Aircraft) Regulations. Assignment of these frequencies shall be in accordance with the following provisions of Appendix 27 —

(*a*) 27/9 A world-wide allotment area is one in which frequencies are allotted to provide long distance communications between an aeronautical station within that allotment area and aircraft operating anywhere in the world; and

(*b*) 27/217 The world-wide frequency allotments appearing in the tables at No. 27/213 and Nos. 27/218 to 27/231, except for carrier (reference) frequencies 3 023 kHz and 5 680 kHz, are reserved for assignment by administrations to stations operating under authority granted by the administration concerned for the purpose of serving one or more aircraft operating agencies. Such assignments are to provide communications between an appropriate aeronautical station and an aircraft station anywhere in the world for exercising control over regularity of flight and for safety of aircraft. World-wide frequencies are not to be assigned by administrations for MWARA, RDARA and VOLMET purposes. Where the operational area of an aircraft lies wholly within a RDARA or sub-RDARA boundary, frequencies allotted to those RDARAs and sub-RDARAs shall be used.

Schedule 2
(regs. 36 & 37)

1.1 Table 1-1: Allotment table

	Block allotment frequencies (MHz)	Worldwide utilization	Remarks
a)	118.000 – 121.450 inclusive	International and National Aeronautical Mobile Services	Specific international allotments will be determined in the light of regional agreement.
b)	121.500	Emergency frequency	In order to provide a guard band for the protection of the aeronautical emergency frequency, the nearest assignable frequencies on either side of 121.500 MHz are 121.450 MHz and 121.550 MHz.
c)	121.550 – 121.9917 inclusive	International and National Aeronautical Mobile Services	Reserved for ground movement, pre-flight checking, air traffic services, clearances, and associated operations.
d)	122.000 – 123.050 inclusive	National Aeronautical Mobile Services	Reserved for national allotments.
e)	123.100	Auxiliary frequency SAR	In order to provide a guard band for the protection of the aeronautical auxiliary frequency, the nearest assignable frequencies on either side of 123.100 MHz are 123.050 MHz and 123.150 MHz.
f)	123.150 – 123.6917 inclusive	National Aeronautical Mobile Services	123.450 MHz which is also used as an air-to-air communications channel (see g))
g)	123.450	Air-to-air communications	Designated for use as provided under these Regulations
h)	123.700 – 129.6917 inclusive	International and National Aeronautical Mobile Services	Specific international allotments will be determined in light of regional agreement
i)	129.700 – 130.8917 inclusive	National Aeronautical Mobile Services	Reserved for national allotments but may be used in whole or in part, subject to regional agreement.
j)	130.900 – 136.875 inclusive	International and National Aeronautical Mobile Services	Specific international allotments will be determined in light of regional agreement.
k)	136.900 – 136.975 inclusive	International and National Aeronautical Mobile Services	Reserved for VHF air-ground data link communications.

1.2 Table 1-2: Channeling/frequency pairing table (*reg. 34*)

Frequency (MHz)	Time slot	Channel Spacing (MHz)	Channel
118.0000		25	118.000
118.0000	A	25	118.001
118.0000	B	25	118.002
118.0000	C	25	118.003
118.0000	D	25	118.004
118.0000		8.33	118.005
118.0083		8.33	118.010
118.0167		8.33	118.015
118.0250	A	25	118.021
118.0250	B	25	118.022
118.0250	C	25	118.023
118.0250	D	25	118.024
118.0250		25	118.025
118.0250		8.33	118.030
118.0333		8.33	118.035
118.0417		8.33	118.040
118.0500		25	118.050
118.0500	A	25	118.051
118.0500	B	25	118.052
118.0500	C	25	118.053
118.0500	D	25	118.054
118.0500		8.33	118.055
118.0583		8.33	118.060
118.0667		8.33	118.065
118.0750	A	25	118.071
118.0750	B	25	118.072
118.0750	C	25	118.073
118.0750	D	25	118.074
118.0750		25	118.075
118.0750		8.33	118.080
118.0833		8.33	118.085
118.0917		8.33	118.090
118.1000		25	118.100

Schedule 3
(reg. 41)

Deployment of VHF frequencies and the avoidance of harmful interference

1.1 Provisions concerning the deployment of VHF frequencies and the avoidance of harmful interference.

1.1.1 The geographical separation between facilities operating on the same frequency shall, except where there is an operational requirement for the use of common frequencies for groups of facilities, be such that the protected service volume of one facility is separated from the protected service volume of another facility by a distance not less than that required to provide a desired to undesired signal ratio of 20 dB or by a separation distance not less than the sum of the distances to the associated radio horizon of each service volume, whichever is smaller.

1.1.2 For areas where frequency assignment congestion is severe or is anticipated to become severe, the geographical separation between facilities operating on the same frequency shall, except where there is an operational requirement for the use of common frequencies for groups of facilities, be such that the protected service volume of one facility is separated from the protected service volume of another facility by a distance not less than that required to provide a desired to undesired signal ratio of 14 dB or by a separation distance not less than the sum of the distances to the associated radio horizon of each service volume, whichever is smaller. This provision shall be implemented on the basis of a regional air navigation agreement.

1.1.3 The application of the minimum separation distance based on the sum of the radio horizon distance of each facility assumes that it is highly unlikely that two aircraft will be at the closest points between and at the maximum altitude of the protected service volume of each facility.

1.1.4 The distance to the radio horizon from a station in an aircraft is normally given by the formula:

$D = K\sqrt{h}$

where D = distance in nautical miles;

h = height of the aircraft station above earth;

K = (corresponding to an effective earth's radius of 4/3 of the actual radius);

= 2.22 when h is expressed in metres; and

= 1.23 when h is expressed in feet.

1.1.5 In calculating the radio line-of-sight distance between a ground station and an aircraft station, the distance from the radio horizon of the aircraft station computed from Note 3 must be added to the distance from the radio horizon of the ground station. In calculating the latter, the same formula is employed, taking for h the height of the ground station transmitting antenna.

1.1.6 The geographical separation between facilities operating on adjacent channels shall be such that points at the edge of the protected service volume of each facility are separated by a distance sufficient to ensure operations free from harmful interference.

1.1.7 The protection height shall be a height above a specified datum associated with a particular facility, such that below it, harmful interference is improbable.

1.1.8 The protection height to be applied to functions or to specific facilities shall be determined regionally, taking into consideration the following factors —

(*a*) the nature of the service to be provided;

(*b*) the air traffic pattern involved;

(*c*) the distribution of communication traffic;

(*d*) the availability of frequency channels in airborne equipment; and
(*e*) probable future developments.

1.1.9 Where the protected service volume is less than operationally desirable, separation between facilities operating on the same frequency shall not be less than that necessary to ensure that an aircraft at the upper edge of the operational service volume of one facility does not come above the radio horizon with respect to emissions belonging to the service of adjacent facilities.

1.1.10 The effect of 1.1.9 is to establish a geographical separation distance below which harmful interference is probable.

1.1.11 The geographical separation between VHF VOLMET stations shall be determined regionally and shall be such that operations free from harmful interference are secured throughout the protected service volume of each VOLMET station.

1.1.12 In the frequency band 117.975 – 137.000 MHz, the frequencies used for National Aeronautical Mobile Services, unless worldwide or regionally allotted to this specific purpose, shall be so deployed that no harmful interference is caused to facilities in the International Aeronautical Mobile Services.

1.1.13 The problem of inter-State interference shall be resolved by consultation between the States concerned.

1.1.14 The communication coverage provided by a VHF ground transmitter shall, in order to avoid harmful interference to other stations, be kept to the minimum consistent with the operational requirement for the function.

Schedule 4
(*reg. 43*)

Assignable frequencies

1.1 List of assignable frequencies shall be —

1.1.1 List A – assignable frequencies in regions or areas where 25 kHz frequency assignments are deployed

118.000 – 121.450 MHz in 25 KHz steps
121.550 – 123.050 MHz in 25 KHz steps
123.150 – 136.975 MHz in 25 KHz steps

1.1.2 List B – assignable frequencies in regions or areas where 8.33 kHz frequency assignments are deployed

118.000 – 121.450 MHz in 8.33 kHz steps
121.550 – 123.050 MHz in 8.33 kHz steps

Schedule 5
(*reg. 48*)

Channels for DME associated with ILS and VOR

1.1 Table 1-1: Channels for DME associated with ILS/VOR

Group	DME channels	Associated paired VHF channels	Remarks	Assignment procedure
1	EVEN 18X to 56X	ILS 100 kHz spacings		For general use
2	EVEN 18Y to 56Y	ILS 50 kHz spacings		For general use
3	EVEN 80Y to 118Y	VOR 50 kHZ spacings Odd tenths of a MHz		For general use
4	ODD 17Y to 55Y	VOR 50 kHz spacings		For general use
5	ODD 81Y to 119Y	VOR 50 kHZ spacings Even tenths of a MHz		For general use
6	EVEN 18W to 56W	No associated paired VHF channel		For later use
7	EVEN 18Z to 56Z	No associated paired VHF channel		For later use
8	EVEN 80Z to 118Z	No associated paired VHF channel		For later use
9	ODD 17Z to 55Z	No associated paired VHF channel		For later use
10	ODD 81Z to 119Z	No associated paired VHF channel		For later use

Note. DME channels in Groups 1 and 2 may be used in association with ILS and/or MLS. DME channels in Groups 3, 4 and 5 may be used in association with VOR or MLS.

Schedule 6
Form A
(*reg. 56*)

Application for a duplicate document

1. Name of Applicant:.....
   Address:.....
   Telephone/Fax No.:.....
   Email address:.....

2. Original document number:.....
   Date of first issue:..... Place of first issue:.....
   (DD/MM/YY)

3. Reasons for applying for a duplicate
.....
.....
.....

Types of services for which document is required

Types of Air Navigation Services	**Location**	**Type of Service (s) (for ATS only) (The service to be provided within a particular airspace or controlled aerodrome designated to the provider by the Authority)**

4. Location at which service is to be provided .....

I apply for the grant of a duplicate document based on the information provided in this Form.

Signature .....

Name (BLOCK LETTERS) .....

Date:..... Place:.....

MADE this 12th day of April, 2022.

TIIULAGANO M. SEGOKGO,
Minister of Transport and Public Works.