

TWENTY-FOURTH “A” SCHEDULE (Regulations 195 - 214)

AIR TRAFFIC SERVICES

SUBPART A: GENERAL	1
24.001 Applicability	1
24.003 Definitions	2
24.005 Use of English.....	12
24.007 Laws, requirements and procedures	12
24.009 Procedure compliance	12
SUBPART B: OBJECTIVES AND DIVISION OF THE AIR TRAFFIC SERVICES	12
24.011 Objective of air traffic services	12
24.013 Division of air traffic services	13
SUBPART C: ATS OPERATIONS SPECIFICATIONS REQUIREMENTS	13
24.015 Applicability	13
24.017 Application for Operations Specifications	13
24.019 Issue of ATS Operations Specifications	14
24.023 Privileges of ATS Operations Specifications	14
24.025 Amendment and Revocation of ATS Operations Specifications	15
24.027 Duration of approval	15
24.029 Renewal of Operations Specifications	16
24.031 Establishment or transfer of service	16
24.033 Withdrawal or transfer of service	16
SUBPART D: SURVEILLANCE AND REVALIDATION	16
24.035 Continuing Validation of the Certification Basis Required	16
24.037 Access for Inspection.....	17
24.039 Changes to ATS provider’s organization	18
24.041 Subsequent Certification Requirement	19
SUBPART E: AIR TRAFFIC SERVICE MANUALS & DOCUMENTATION	19
24.043 Organisation Master Plan	19
24.045 ATS Manuals of Operations and Unit Specific Manuals	20
24.047 Equipment Maintenance Control Manual	23
24.049 Equipment Operating Manuals	24

24.051	Submission and Revision of Manuals	24
24.053	Operational Documentation	25
24.055	Aeronautical Publications	26
24.057	Checklists	26
SUBPART F: SAFETY AND QUALITY MANAGEMENT SYSTEMS		26
24.059	Safety management system	26
24.061	Quality Management System	28
SUBPART G: COMMUNICATION NAVIGATION AND SURVEILLANCE EQUIPMENT MAINTENANCE		30
24.063	Authorized Equipment	30
24.065	Maintenance Quality System	30
24.067	Equipment Service and Maintenance Records.....	31
24.069	Deferred Defects Summary.....	31
SUBPART H: AIR TRAFFIC SERVICE ORGANIZATION		
24.071	Applicability.....	31
24.073	Key Personnel	31
24.075	Personnel Qualifications	33
24.076	Proficiency Checks	33
24.077	Training and assessment	34
24.079	Facility requirements.....	35
24.081	Security	37
SUBPART I: AIR TRAFFIC SERVICE REQUIREMENTS FOR INFORMATION.....		38
24.083	General information requirements.....	38
24.085	Time in air traffic services	39
24.087	Notification of facility status	40
24.089	Meteorological information and reporting.....	40
24.091	Altimeter setting procedures.....	40
SUBPART J: SHIFT ADMINISTRATION.....		41
24.093	General	41
24.095	Watch log	41
SUBPART K: PREVENTION OF FATIGUE		42
24.097	General	42
24.099	Variation of Operational and Duty Time	43
24.101	Fatigue Risk Management System.....	43

24.103	Air traffic controller Responsibilities: Prevention of Fatigue	44
24.109	Single Person Operations	44
24.111	Air traffic service provider Responsibilities	44
24.113	Manual of Operations.....	45
SUBPART L: COORDINATION REQUIREMENTS		45
24.115	Coordination	45
24.117	Co-ordination requirements.....	45
24.119	Co-ordination of activities potentially hazardous to civil aircraft.....	46
24.121	Airport Collaborative Decision Making (A-CDM).....	47
SUBPART M: SERVICE DISRUPTIONS AND CONTINGENCY PLANNING		47
24.123	Service disruptions	47
24.125	Contingency plans	48
SUBPART N: RECORDS REQUIREMENTS		49
24.127	Communication and Data Recordings	49
24.129	Records.....	49
24.131	Voice and Data Recordings.....	50
24.133	Retention and Maintenance of Personnel Records.....	51
24.135	Equipment Maintenance Personnel Qualification and Currency Records	52
24.137	Air Traffic Service Personnel Qualification and Currency Records.....	52
24.139	Form and Format of retention	52
SUBPART O: Operational Standards.....		52
24.141	Provision of Air Traffic Services	52
24.143	Regional Supplementary Procedures	53
24.145	Human Factors	53
24.147	Automation.....	53
24.149	Separation standards.....	54
24.151	Runway Safety Programme.....	55
24.153	Incidents and accidents.....	55
24.155	Drug and Alcohol Testing.....	55
24.157	Deviation from standards	55
Appendix 1 to 24.065: ATS provider's Additional Quality System for Equipment Maintenance		60
Appendix 1 to 24.067: Contents of the Equipment Technical Log.....		61

Appendix 1 to 24.069: Contents of the Deferred Defects Log	61
Appendix 1 to 24.073: Duties and Responsibilities of Key Personnel.....	62
Appendix 1 to 24.079 : ATS Unit Communication Requirements.....	65
Appendix 1 to 24.083: ATS requirement for Information	69
Appendix 1 to 24.097: Prescriptive Operational and Duty Hour Requirements	72
Appendix 1 to 24.123: Operational and Duty Time records	73

SUBPART A: GENERAL

24.001 Applicability

- (a) The requirements of this schedule applies to all Air Traffic Service (ATS) providers, including any Air Traffic Service provider that currently provides or has submitted an application to the Authority to provide any kind of Air Traffic Service and any of its sub-contractors.
- (b) This Schedule prescribes requirements governing:
 - (1) the operation of organizations providing air traffic services in the Sovereign airspace of Jamaica that are:
 - (i) Within the flight information region administered by another ICAO Contracting State in accordance with the terms of a Regional Air Navigation Agreement; or
 - (ii) the subject of a written agreement between an organization responsible for the provision of ATS service in adjacent airspace which delegates the provision of ATS service to that organization; and
 - (2) The provision of air traffic services within the Sovereign airspace of Jamaica; and
 - (3) The operating standards for the provision of air traffic services.
- (c) An Air Traffic Service provider shall comply with the operating standards for the provision of Air Traffic Services contained in the Manual of Air Traffic Service standards.
- (d) An Air Traffic Service provider's failure to comply with any of the requirements of these regulations or provisions of any Manual of Standard issued thereunder may:
 - (1) Constitute a breach of the Civil Aviation Regulations of Jamaica; and
 - (2) Result in proceedings for any such breaches; or
 - (3) Result in the refusal of an application for renewal of an approval; or
 - (4) Result in action to suspend, revoke or impose conditions in respect of the ATS provider's Operations Specifications.
- (e) The ATS provider shall comply with these regulations and any other applicable national legislation

in force at any point during the certification process once such process has begun.

- (f) Any reference in this Schedule to an Annex to the Convention includes the differences notified to ICAO by Jamaica in respect of the Standards specified in that Annex and published in the AIP of Jamaica.

24.003 Definitions

(a) For the purpose of the Schedule, the following definitions shall apply:

1. **“Accepting unit.”** Air Traffic control unit next to take control of an aircraft.
2. **“Accident.”** An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until such time as all persons have disembarked, in which a person is fatally or seriously injured as a result of:
 - (i) being in the aircraft, or
 - (ii) direct contact with any part of the aircraft, including parts which have become detached from the aircraft or
 - (iii) direct exposure to jet blast, except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew; or the aircraft sustains damage or structural failure which:
 - (iv) adversely affects the structural strength, performance or flight characteristics of the aircraft, and
 - (v) would normally require major repair or replacement of the affected component, except for engine failure or damage, when the damage is limited to the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tires, brakes, fairings, small dents or puncture holes in the aircraft skin; or
 - (vi) the aircraft is missing or is completely inaccessible.
3. **“Accuracy.”** A degree of conformance between the estimated or measured value and the true value.
4. **“Advisory airspace.”** An airspace of defined dimensions, or designated route, within which air traffic advisory service is available.
5. **“Advisory route.”** A designated route along which air traffic advisory service is available.
6. **“Aerodrome.”** A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.
7. **“Aerodrome control service.”** Air traffic control service for aerodrome traffic.
8. **“Aerodrome control tower.”** A unit established to provide air traffic control service to aerodrome traffic.
9. **“Aerodrome traffic.”** All traffic on the maneuvering area of an aerodrome and all aircraft flying in the vicinity of an aerodrome.

10. **“Aeronautical: fixed service (AFS).”** A telecommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air service.
11. **“Aeronautical information publication (AIP).”** A publication issued by or with the Authority of a state and containing aeronautical information of a lasting character essential to air navigation;
12. **“Aeronautical mobile service (RR S1.32).”** A mobile service between aircraft stations, in which survival craft stations may participate, emergency position-indicating radio beacon stations may also participate in this service on designated distress and emergency frequencies.
13. **“Aeronautical telecommunication station.”** A station in the aeronautical telecommunication service.
14. **“Airborne collision avoidance system (ACAS).”** An aircraft system based on secondary surveillance radar (SSR) transponder signals which operates independently of ground-based equipment to provide advice to the pilot on potential conflicting aircraft that are equipped with SSR transponders.
15. **“Aircraft.”** Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth’s surface.
16. **“Air-ground communication.”** Two-way communication between aircraft and stations or locations on the surface of the earth.
17. **“AIRMET information.”** Information issued by an meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of low-level aircraft operations and which was not already included in the forecast issued for low-levels flights in the flight information region concerned or sub-area thereof.
18. **“Air-taxiing.”** Movement of a helicopter/VTOL above the surface of an aerodrome, normally in ground effect and at a ground speed normally less than 37 km/h (20 kt).
19. **“Aeronautical information service (AIS).”** A service established in a defined area of coverage that is responsible for the provision of aeronautical information or data necessary for the safety, regularity and efficiency of air navigation, and includes personnel and facilities employed to provide information pertaining to the availability of air navigation services and their associated procedures necessary for the safety, regularity and efficiency of air navigation (i.e. AIP, AIC, NOTAM etc.);
20. **“Airport control service.”** Air traffic control service in respect of airport traffic;
21. **“Airport control tower.”** A unit established to provide air traffic control service to airport traffic;
22. **“Airport traffic.”** All traffic on the maneuvering area of an airport and all aircraft flying in the vicinity of an airport;
23. **“Airport traffic zone.”** Airspace of defined dimensions established around an airport for the protection of airport traffic;
24. **“Air Traffic.”** All aircraft in flight or operating on the maneuvering area;

25. **“Air traffic advisory service.”** A service provided within advisory airspace to ensure separation, insofar as is practical, between aircraft which are operating on IFR flight plans;
26. **“Air traffic control clearance.”** An authorisation for an aircraft to proceed under conditions specified by an air traffic control unit;
27. **“Air traffic control instruction.”** A directive issued by the air traffic control service for the purpose of requiring a pilot to take specific action;
28. **“Air traffic control service.”** A service provided for the purpose of:
 - (a) preventing collisions
 - (i) between aircraft; and
 - (ii) on the manoeuvring area between aircraft and obstructions; and
 - (b) expediting and maintaining an orderly flow of air traffic;
29. **“Air traffic control unit.”** Various, area control unit, approach control unit or airport (aerodrome) control tower;
30. **“Air traffic flow management (ATFM).”** A service established with the objective of contributing to a safe, orderly and expeditious flow of air traffic by ensuring that ATC capacity is utilized to the maximum extent possible and that the traffic volume is compatible with the capacities declared by the appropriate ATS authority.
31. **“Air traffic services or "ATS" .** Air traffic control services, air traffic advisory services, alerting services or flight information services;
32. **“Air traffic services airspaces”** means airspaces of defined dimensions, alphabetically designated within which specific types of flights may operate and for which air traffic services and rules of operation are specified;
33. **“Air traffic reporting office.”** A unit established for the purpose of receiving reports concerning air traffic services and flight plans submitted before departure.
34. **“Air traffic services unit.”** A generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office.
35. **“Airway.”** A control area or portion thereof established in the form of a corridor.
36. **“ALERFA.”** The code word used to designate an alert phase.
37. **“Alerting service.”** A service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.
38. **“Alert phase.”** A situation wherein apprehension exists as to the safety of an aircraft and its occupants.

39. **“Alternate aerodrome.”** An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to a or to land at the aerodrome of intended landing. Alternate aerodromes include the following:
40. **“Take-off alternate”** An alternate aerodrome at which an aircraft can land should this become necessary shortly after take-off and it not possible to use the aerodrome of departure.
41. **“En-route alternate”** An aerodrome at which an aircraft would be able to land after experiencing an abnormal or emergency condition while en route.
42. **“ETOPS en-route alternate”** A suitable and appropriate alternate aerodrome at which an aeroplane would be able to land after experiencing an engine shutdown or other abnormal or emergency condition while en route in an ETOPS operation.
43. **“Destination alternate”** An alternate aerodrome to which an aircraft may proceed should it become either impossible or inadvisable to land at the aerodrome of intended landing.
- Note: The aerodrome from which a flight departs may also be an en-route or a destination alternate aerodrome for that flight.*
44. **“Altitude.”** The vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL);
45. **“Approach control service.”** Air traffic control service for arriving or departing controlled flights.
46. **“Approach control unit.”** A unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more airports;
47. **“Appropriate ATS authority.”** The relevant authority designated by the State responsible for providing air traffic services in the airspace concerned;
48. **“Apron.”** A defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance.
49. **“Apron management service.”** A service provided to regulate the activities and the movement of aircraft and vehicles on an apron.
50. **“Area control center.”** A unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction.
51. **“Area control service.”** Air traffic service for controlled flights in control areas.
52. **“Area navigation (RNAV).”** A method of navigation which permits aircraft operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these.
53. **“Area navigation route.”** An ATS route established for the use of aircraft capable of employing area navigation.
54. **“ATS route.”** A specified route designated for channeling the flow of air traffic as necessary for the provision of air traffic services;
55. **the Authority.** In this Schedule, Means the Director General, Directors and Inspectors with the Jamaica

Civil Aviation Authority responsible for regulatory oversight as empowered under the Civil Aviation Act and the applicable Delegations of Functions Order.

56. **“Automatic dependant service (ADS).”** A surveillance technique in which aircraft automatically provide, via a data link, data derived from on-board navigation and position-fixing systems, including aircraft identification, four dimensional position and additional data as appropriate;
57. **“Automatic terminal information service (ATIS).”** The automatic provision of current, routine information to arriving and the departing aircraft throughout 24 hours or a specified portion thereof;
58. **“Data link-automatic terminal information service (D-ATIS).”** The provision of ATIS via data link.
59. **“Voice-automatic terminal information service (Voice-ATIS)”**: The provision of ATIS by means of continuous and repetitive voice broadcasts.
60. **“Base Turn.”** A Turn executed by the aircraft during the initial approach between the end of the outbound track and the beginning of the intermediate or final approach track. The tracks are not reciprocal.
61. **“Calender.”** Discrete temporal reference system that provides the basis for defining temporal position to a resolution of one day (ISO 19108).
62. **“Change-over point.”** The point at which an aircraft navigating on an ATS route segment defined by reference to very high frequency omnidirectional radio ranges is expected to transfer its primary navigational reference from the facility behind the aircraft to the next facility ahead of the aircraft.
63. **“Clearance limit.”** The point to which an aircraft is granted an air traffic control clearance.
64. **“Conference communications.”** Communication facilities whereby direct speech conversation may be conducted between three or more locations simultaneously.
65. **“Control Area.”** The controlled airspace that is specified in the Jamaica AIP and that extends from a specified limit above the earth;
66. **“Controlled aerodrome.”** An aerodrome at which air traffic control service is provided to aerodrome traffic.
67. **“Controlled airspace.”** means an airspace of defined dimensions that is so specified in the Jamaica AIP and within which an air traffic control service is provided in accordance with the airspace classification;
68. **“Controlled flight.”** Any flight which is subject to an air traffic control clearance.
69. **“Controller-pilot data link communications (CPDLC).”** A means of communication between controller and pilot, using data link for ATC communications.
70. **“Control zone.”** The controlled airspace that is so specified in the Jamaica AIP and that extends upwards vertically from the surface of the earth up to a specified upper limit;
71. **“Cruising level.”** A level maintained during a significant portion of a flight.
72. **“Cyclic redundancy check (CRC).”** A mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data.
73. **“Data link communications.”** A form of communication intended for the exchange of message via a data link.
74. **“Data quality.”** A degree or level of confidence that the data provided meets the requirements of the data user in terms of accuracy, resolution and integrity.

75. **“Datum.”** Any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities (ISO 19104*).
76. **“Declared capacity.”** A measure of the ability of the ATC system or any of its subsystems or operating positions to provide service to aircraft during normal activities. It is expressed as the number of aircraft entering a specified portion of airspace in a given period of time, taking due account of weather, ATS unit configuration, staff and equipment available, and any other factors that may affect the workload of the controller responsible for the airspace.
77. **“DETRESFA.”** The code word used to designate a distress phase.
78. **“Distress phase.”** A situation wherein there is reasonable certainty that an aircraft and its occupants are threatened by grave and imminent danger or require immediate assistance.
79. **“Downstream clearance.”** A clearance issued to an aircraft by an air traffic control unit that is not the current controlling authority of that aircraft.
80. **“Emergency phase.”** A generic term meaning, as the case may be, uncertainty phase, alert phase or distress phase.
81. **“Final approach.”** That part of an instrument approach procedure which commences at the specified final approach fix or point, or where such a fix or point is not specified.
- (a) at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified:
 - (b) at the point of interception of the last track specified in the approach procedure; and ends at a point in the vicinity of an aerodrome from which:
 - (i) a landing can be made: or
 - (ii) a missed approach procedure is initiated.
82. **“Flight crew member.”** A licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period.
83. **“Flight Information Centre.”** A unit established to provide flight information service and alerting service.
84. **“Flight information region.”** An airspace of defined dimensions within which flight information service and alerting service are provided
85. **“Danger area.”** An airspace of defined dimensions that is so specified in the Jamaica AIP within which activities dangerous to the flight of aircraft may exist at specified times;
86. **“Duty Period”.** period during which an Air Traffic Controller License holder is required to carry out any task associated with the ATC service provider, including breaks and any extension of duty.
87. **“Emergency assistance services.”** Services provided for the purpose of:
- (a) assisting aircraft in a state of emergency, including aircraft in uncertainty, alert and distress phases;
 - (b) assisting aircraft involved in a hijacking; or

- (c) alerting rescue coordination agencies of missing or overdue aircraft;
1. **“Flight information service.”** A service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights;
 2. **“Flight Level (FL).”** A surface of constant atmospheric pressure which is related to a specific pressure datum, 1013.2 hectopascals, and is separated from other such services by specific pressure intervals;
 3. **“Flight plan.”** Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.

Note: -Specifications for flight plans are contained in Annex 2. When the expression “Flight plan form” is used it denotes the model flight plan form at Appendix 2 to the PANS-ATM

4. **“Forecast.”** A statement of expected meteorological conditions for a specified time or period, and for a specified area or portion of airspace.
5. **“Geodetic datum.”** A minimum set of parameters required to define location and orientation of the local reference system with respect to the global reference system/frame/.
6. **“Gregorian calendar.”** Calendar in general use: first introduced in 1582 to define a year that more closely approximates the tropical year than the Julian calendar (ISO 19108*).
7. **“Height.”** The vertical distance of a level, a point or an object considered as a point, measured from a specified datum;
8. **“Human Factors principles.”** Principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.
9. **“Human performance.”** Human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.
10. **“High level airspace.”** Airspace above FL 245
11. **“ICAO Doc. 4444.”** Doc. 4444-RAC/501 (Procedures for Air Navigation Services – Air Traffic Management) approved and published by decision of the Council of the International Civil Aviation Organisation, as in force from time to time;
12. **“ICAO Doc. 7030.”** Doc. 7030 (Regional Supplementary Procedures) approved and published by decision of the Council of the International Civil Aviation Organisation, as in force from time to time;
13. **“IFR.”** Instrument flight rules.
14. **“IFR air traffic control message.”** A message that contains an air traffic control clearance or instruction, a position report or procedure related to the conduct of an IFR flight;
15. **“IFR flight.”** A flight conducted in accordance with the instrument flight rules;
16. **“IMC.”** The symbol used to designate instrument meteorological conditions.

17. **“INCERFA.”** The code word used to designate an uncertainty phase.
18. **“Incident.”** An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.
19. **“Instrument meteorological conditions (IMC).”** Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions.

Note: The specified minima for visual meteorological conditions are contained in Annex 2.
20. **“Integrity (aeronautical data).”** A degree of assurance that an aeronautical data and its value has not been lost nor altered since the data origination or authorized amendment.
21. **“International NOTAM office.”** An office designated by a State for the exchange of NOTAM internationally.
22. **“Instrument approach procedure.”** A series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix, or where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply;
23. **“Level.”** The vertical position of an aircraft in flight and meaning variously, height, altitude or flight level;
24. **“Low level airspace.”** Airspace at or below FL 245;
25. **“Manoeuvring area.”** That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.
26. **“Meteorological office.”** An office designated to provide meteorological service for international air navigation.
27. **“Movement area.”** That part of an aerodrome to be used for the take-off, landing and landing and taxiing of aircraft, consisting of the manoeuvring area and the apron(s).
28. **“Night.”** The hours between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise, as may be prescribed by the appropriate authority.
29. **“Night Shift.”** Any duty period equal to or greater than four (4) hours during any period of Night
30. **“NOTAM.”** A notice to airmen concerning the establishment or condition of, or change in, any aeronautical facility, service or procedure, or any hazard affecting aviation safety, the knowledge of which is essential to personnel engaged in flight operations;

31. **“Obstacle.”** All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that are located on an area intended for the surface movement of aircraft or that extend above a defined surface intended to protect aircraft in flight.
32. **“Operator.”** A person, organization or enterprise engaged in or offering to engage in an aircraft operation.
33. **“Operational duty.”** The period during which an air traffic controller is actually exercising the privileges of the controller’s license at an operational position.
34. **“Pilot-in-command.”** The pilot designated by the operator, or in the case of general aviation, the owner, as being in command and charged with the safe conduct of a flight.
35. **“Printed communications.”** Communications which automatically provide a permanent printed record at each terminal of a circuit of all messages which pass over such circuit.
36. **“Operational location.”** The physical location of an operational air traffic control unit or flight service station;
37. **“Operational Time/Hour”** The period which an ATCO is actually exercising the privileges of the ATCO's licence at an operational position.
38. **“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;
39. **“Radio telephony.”** A form of radio communication primarily intended for the exchange of information in the form of speech;
40. **“Reporting point.”** A specified geographical location in relation to which the position of an aircraft can be reported.
41. **“Required navigation performance (RNP).”** A statement of the navigation performance necessary for operation within a defined airspace.
42. **“Rescue coordination center (RCC).”** A unit responsible for promoting efficient organization of search and rescue services and for coordinating the conduct of search and rescue operations within a search and rescue region.
43. **“RNP type.”** A containment value expressed as a distance in nautical miles from the intended position within which flights would be for at least 95 per cent of the total flying time.
44. **“Runway.”** A define rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.
45. **“Runway visual range (RVR).”** The range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line.
46. **“Safety programme.”** An integrated set of regulations and activities aimed at improving safety.
47. **“Safety management system.”** A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

48. **“Standby Duty.”** A period during which, by prior arrangement, a controller is required to be available to report to any Air Traffic Service unit with the intention of providing an air traffic control service. Standby duty is calculated at half period of duty time.
49. **“SIGMET information.”** Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather phenomena which may affect the safety of aircraft operations.
50. **“Significant points.”** A specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes
51. **“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;
52. **“Special VFR flight.”** VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC;
53. **“Station declination.”** An alignment variation between the zero degree radial of a VOR and true north, determined at the time the VOR station is calibrated.
54. **“SARPs.”** Standards and Recommended Practices
55. **“Taxiing.”** Movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing.
56. **“Terminal control area.”** An airspace of fixed dimensions that is so specified in the Jamaica AIP and within which an air traffic control service for IFR flights is provided;
57. **“Track.”** The projection on the earth’s surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid).
58. **“Traffic avoidance advice.”** Advice provided by an air traffic services unit specifying manoeuvres to assist a pilot to avoid a collision;
59. **“Traffic information.”** Information issued by an air traffic services unit to alert a pilot to other known or observed air traffic which may be in proximity to the position or intended route of flight and to help the pilot avoid a collision;
60. **“Transfer of control point.”** A defined point located along the flight path of an aircraft, at which the responsibility for providing air traffic control service to the aircraft is transferred from one control unit or control position to the next.
61. **“Transferring unit.”** Air traffic control unit in the process of transferring the responsibility for providing air traffic control service to an aircraft to the next air traffic control unit along the route of flight.
62. **“Uncertainty phase.”** A situation wherein uncertainty exists as to the safety of an aircraft and its occupants.

63. **“Transition altitude.”** The altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes;
64. **“Transponder airspace.”** An airspace of fixed dimensions which aircraft shall not enter while in flight unless the aircraft is equipped with a serviceable and functioning transponder and VFR flight means visual flight rules;
65. **“VFR.”** Visual Flight Rules;
66. **“VFR flight.”** A flight conducted in accordance with the visual night rules.
67. **“Visual meteorological conditions (VMC).”** Meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima.
68. **“VMC.”** Visual Meteorological Conditions.
69. **“Waypoint.”** A specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation. Waypoints are identified as either.
- (b) Every other term shall have the same meaning as contained in the Chicago Convention and ICAO Document 9713, “International Civil Aviation Vocabulary.”

24.005 Use of English

All documentation, written communications and data (electronic or otherwise) for submission to the Authority or in support of an application for an approval shall be provided in English.

24.007 Laws, requirements and procedures

The ATS provider shall take all actions necessary to ensure that all persons employed, engaged or contracted by the holder are familiar with the safety and security requirements of all appropriate sections of Civil Aviation and National legislation, the requirements of this Schedule, all related Manuals of Standards, any applicable conditions of the ANS Certificate and the procedures specified in the ATS provider’s safety assurance documentation, Quality System and Master Plan.

24.009 Procedure compliance

Each person performing duties in the ATS provider’s organization shall comply with the applicable procedures specified in the appropriate Manuals which authorise the operation.

SUBPART B: OBJECTIVES AND DIVISION OF THE AIR TRAFFIC SERVICES

24.011 Objective of air traffic services

The objectives of the Air Traffic Services shall be to:

- (a) Preventing collisions between aircraft;
- (b) Prevent collisions between aircraft on the manoeuvring area of an aerodrome and obstacles on that area;
- (c) Expedite and maintain an orderly flow of air traffic;

- (d) Provide advice and information useful for the safe and efficient conduct of flights;
- (e) Notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.

24.013 Division of air traffic services

- (a) Air traffic services shall comprise three services identified as follows:
 - (1) Air traffic control service, comprising one or more of the following:
 - (i) Area control service: the provision of air traffic control service for controlled flights, except for those parts of such flights described in paragraphs 24.013(a)(1)(ii) and (iii); or
 - (ii) Approach control service: the provision of air traffic control service for those parts of controlled flights associated with arrival or departure; or
 - (iii) Aerodrome control service: the provision of air traffic control service for aerodrome traffic, except for those parts of flight described in paragraph 24.013(a) (1) (ii) and (iii).
 - (2) Flight information service;
 - (3) alerting service.
- (b) Any air traffic control service shall include provision of flight information and alerting services.
- (c) The naming and identification of air traffic service units and airspace shall be in accordance with the provisions of ICAO Annex 11.

SUBPART C: ATS OPERATIONS SPECIFICATIONS REQUIREMENTS

24.015 Applicability

- (a) No person shall provide a service which the Authority deems to be an air traffic service except under the Authority of, and in accordance with the provisions of, any ATS approval issued under this Schedule.
- (b) Each person authorised to provide an ATS before the entry into force of these regulations, may continue to do so, subject to compliance with the requirements of this Schedule.

24.017 Application for Operations Specifications

- (a) An applicant for the grant of ATS Operations Specifications shall apply to the Authority in the form and manner required by the Authority and at least 90 days before the date of intended operation, except the MANOPs and Equipment Maintenance Control Manual which may be submitted later than but not less than 60 days before the date of intended operation, supplying:
 - (1) The applicant's name and address; and
 - (2) The specific air traffic service or services to be provided; and
 - (3) The aerodrome location or airspace designation at, or within which, the service will be

provided; and

- (4) The Master Plan and proof of Financial Capacity and Liability; and
 - (5) Payment of any applicable fee required by the appropriate requirements; and
 - (6) Such other particulars relating to the applicant and the intended service as may be required by the Authority
- (b) An applicant who is requesting to operate a Flight Information Service Unit shall make application at least 30 days prior to the dated of intended operation.

24.019 Issue of ATS Operations Specifications

- (a) An applicant may be granted an ATS Operations Specifications if the Authority is satisfied that:
- (1) The applicant meets the requirements of this Schedule or any other requirements of these Regulations; and
 - (2) The applicant, and the applicant's key person or persons, are fit and proper persons and are deemed acceptable by the Authority; and
 - (3) The organization has the Financial Capacity and Liability Coverage required for it to execute its functions; and
 - (4) The granting of the approval is not contrary to the interests of aviation safety and security.

24.021 Demonstration Sessions

- (a) No person may operate an air traffic service unless it first conducts satisfactory demonstration sessions as required by the Authority.
- (b) Subject to the provision in paragraph (d) of this Subsection, no person may provide any air traffic service following any major change(s) and/or re-certification unless it conducts a satisfactory demonstration session for the Authority.
- (c) Demonstration sessions required by paragraph (a) of this Subsection shall be conducted in accordance with the regulations applicable to the type of operation, equipment used and services provided.
- (d) The Authority may authorize deviations from this Subsection if the Authority finds that special circumstances make full compliance with this section unnecessary.

24.023 Privileges of ATS Operations Specifications

- (a) ATS Operations Specifications shall state:
- (i) The aerodrome or airspace at, or within which, the service may be provided; and
 - (ii) The type of air traffic service which may be provided.

- (b) An air traffic service Operations Specifications may include such conditions as the Authority may consider appropriate.
- (c) The ATS provider issued with ATS Operations Specifications under this Subpart shall provide the air traffic service in accordance with the provisions of this Schedule and with any conditions attached to the approval.

24.025 Amendment and Revocation of ATS Operations Specifications

- (a) The Authority may amend any Air Navigation Service (ANS) Certificate with ATS Operations Specifications or amend the conditions under which any person authorised to provide an ATS before the entry into force of these regulations may continue to provide the service if:
 - (1) The Authority determines that aviation safety and the public interest require the amendment; or
 - (2) The ATS provider applies for an amendment.
- (b) The Authority may, if the requirements of this Schedule are met, amend ATS Operations Specifications, where there is a change in the services provided.
- (c) If the Authority stipulates in writing that an emergency exists requiring immediate amendment in the public interest with respect to aviation safety, such an amendment is effective without stay on the date the ATS provider receives notice.
- (d) The ATS provider may appeal the amendment, but shall operate in accordance with it, unless it is subsequently withdrawn.
- (e) Amendments proposed by the Authority, other than emergency amendments, become effective thirty (30) days after notice to the ATS provider, unless the Certificate holder appeals the proposal in writing prior to the effective date. The filing of an appeal stays the effective date until the appeal process is completed.
- (f) Amendments proposed by any such ATS provider shall be made at least 30 days prior to the intended date of the start of any service under that amendment.
- (g) No person may provide an ATS that is not included in a current and valid ANS Certificate and related ATS Operations Specifications and for which an amendment to such Operations Specifications is required, unless it has received notice of approval from the Authority.

24.027 Duration of approval

- (a) ATS approval Operations Specifications shall be valid for a period not exceeding one (1) calendar year from the date of issuance until midnight of the date of expiry.
- (b) ATS Operations Specifications shall remain in force until it is suspended or revoked.
- (c) The holder of an ANS Certificate with ATS Operations Specifications that has been suspended or revoked shall forthwith surrender such certificate to the Authority.
- (d) The holder of ATS Operations Specifications shall make any payment required by the appropriate requirements in respect of continued validity or amendment of the approval.

24.029 Renewal of Operations Specifications

- (a) The application for the renewal of ATS Operations Specifications shall be in a form and manner prescribed by the Authority.
- (b) The application shall be submitted to the Authority not less than 30 days before the certificate expiry date.

24.031 Establishment or transfer of service

- (a) An applicant for the grant of ATS Operations Specifications shall include with the application:
 - (1) For each aerodrome and airspace, a schedule of the proposed hours of service; and
 - (2) In respect of an aerodrome or airspace not currently provided with an air traffic service, a summary of safety factors considered before seeking approval.
- (b) An applicant for the grant of ATS Operations Specifications that intends to assume responsibility for providing any air traffic service from an existing ATS provider shall include with its application full details of transitional arrangements endorsed by the Accountable Managers of both organizations.

24.033 Withdrawal or transfer of service

- (a) The holder of ATS Operations Specifications who wishes permanently to withdraw an air traffic service shall give the Authority at least 90 days' notice of the proposal and include in that notice a summary of factors considered in arriving at the decision to withdraw the service.
- (b) The holder of ATS Operations Specifications who intends permanently to reduce the hours of operation of an air traffic service shall provide to the Authority advance notice of, and the reasons for, the proposed reduction.
- (c) The holder of ATS Operations Specifications who is the outgoing provider of an air traffic service shall provide all necessary assistance in the preparation and execution of the transitional arrangements.

SUBPART D: SURVEILLANCE AND REVALIDATION**24.035 Continuing Validation of the Certification Basis Required**

- (a) The holder of ATS Operations Specifications shall be subject to a continuing system of surveillance administered by the Authority to validate the original certification basis and the organization's continued eligibility to hold its approval.
- (b) The holder of ATS Operations Specifications shall allow the Authority to conduct tests and inspections, at any time or place, to determine whether a holder of ATS Operations Specifications is complying with the applicable laws, regulations and approval terms and conditions.
- (c) The holder of ATS Operations Specifications shall:

- (1) continue to meet the standards and comply with the requirements of this Schedule; and
- (2) comply with all procedures and programmes detailed in its approved Master Plan and Manual of Operations ; and
- (3) provide, at each location covered by the Master Plan, in hard copy, electronic or other form acceptable to the Authority:
 - (i) all portions of its current Air Navigation Service Certificate and ATS Operations Specifications;
 - (ii) all portions and sufficient copies of the Manual of Operations that are readily accessible by all personnel who may need to refer to it.
 - (iii) all applicable portions of its Equipment Maintenance Manuals; and
 - (iv) at least one current copy of the relevant sections of its Master Plan applicable to the operation; and
 - (v) a current listing that includes the location and individual positions responsible for each record, document and report required to be kept by an ANS Certificate holder with ATS Operations Specifications under the applicable aviation law, regulations or standards.
- (d) The ATS provider shall make its records available to the Authority upon request, either at the Authority's offices or other location stipulated by the Authority.
- (e) Failure by the ATS provider to make available to the Authority upon request, any or all portions of the Operations Specifications, Operations and Equipment Maintenance Manuals and any required record, document or report is grounds for suspension of all or part of the Operations Specifications and associated ANS Certificate.

24.037 Access for Inspection

- (a) To determine continued compliance with the applicable regulations, the ATS provider shall –
 - (1) grant the Authority free and uninterrupted access to and co-operation with any of its organizations, facilities and equipment;
 - (2) ensure that any person authorised by the Authority shall have free and uninterrupted access to any documentation relating to activities associated with the approval.
 - (3) ensure that the Authority is granted access to and co-operation with any organization or facilities that it has contracted for services associated with any air navigation service and equipment maintenance for those services; and
 - (4) grant the Authority free and uninterrupted access to any ATS unit at any time during operations.
 - (5) be responsible for ensuring that, if requested to do so by an Authorized Person, documentation is produced within a period prescribed by the Authority.

- (b) The ATS provider shall provide to the Authority an observer's position at each operating position in any ATS unit which the appropriate ATS personnel actions and conversations may be easily observed whenever required by the Authority.

(Note: The suitability of the seat location and the ability to monitor ATS personnel actions, conversations and radio communications is determined by the Authority.)

24.039 Changes to ATS provider's organization

- (a) The holder of ATS Operations Specifications shall ensure that its Master Plan is amended so as to remain a valid description of the holder's current and planned organization and services.
- (b) The ATS provider shall ensure that any amendments made to the holder's Master Plan:
 - (1) meets the applicable requirements of this Schedule; and
 - (2) complies with the amendment procedures contained in the holder's Master Plan.
- (c) Subject to sub-paragraph (d) below, the ATS provider shall provide the Authority with a copy of each amendment to the holder's Master Plan as soon as practicable after its incorporation into the Master Plan as follows:
 - (1) printed amendments, at least 15 working days in advance of their effective date; and
 - (2) amendments of an urgent or immediate nature, without delay, and no later than the date on which they are effective.
- (d) Prior notification to and acceptance by the Authority is required whenever The ATS provider proposes to make a change to any of the following:
 - (1) The Accountable Manager; or
 - (2) Any of the listed key persons; or
 - (3) Any aspect of air traffic management that may have an adverse effect on air traffic services provided by agencies responsible for adjacent airspace.
- (e) No significant safety-related change to the ATS system, including the implementation of a reduced separation minimum or a new procedure, shall be effected after a safety assessment has demonstrated that an acceptable level of safety will be met and users have been consulted. When appropriate, the responsible authority shall ensure that adequate provision is made for post-implementation monitoring to verify that the defined level of safety continues to be met.
- (f) The Authority may prescribe conditions under which the ATS provider may operate during or following any of the changes specified in this paragraph and the ATS provider shall comply with those conditions.
- (g) Where any of the changes referred to in this paragraph require an amendment to the Operations Specifications, the ATS provider shall forward the documentation describing the changes to the Authority for review as soon as practicable.
- (h) The ATS provider shall make such amendments to the holder's Master Plan as the Authority may consider necessary in the interests of aviation safety.

24.041 Subsequent Certification Requirement

The Authority may require that a full certification process be completed prior to the implementation of any major change in any aspect of the ATS provider's service provision described in 24.039 or as prescribed by the Authority.

SUBPART E: AIR TRAFFIC SERVICE MANUALS & DOCUMENTATION

24.043 Organisation Master Plan

- (a) An applicant for the grant of ATS Operations Specifications shall provide the Authority with a master plan that shall be approved by the Authority and covers a minimum period of five years.
- (b) The master plan shall contain:
 - (1) A set of overall aims and goals of the ATS provider and its strategy towards achieving them in consistency with any overall longer term plan of the provider and any other requirements prescribed by the Authority.
 - (2) Appropriate performance objectives in terms of quality and level of service, safety and cost – effectiveness.
 - (3) A statement signed by the Accountable Manager on behalf of the applicant's organization confirming that the master plan and the appropriate Manual of Operations:
 - (i) defines the organization and demonstrate its means and methods for ensuring safe air traffic services are provided to aircraft and continuing compliance with this and any other applicable Schedule; and
 - (ii) Are required to be complied with by its personnel at all times; and
- (c) The titles and names of the key person or persons required by this Schedule; and
 - (1) the duties and responsibilities of the key person or persons specified in this Schedule including matters for which they have responsibility to deal directly with the Authority on behalf of the organization; and
 - (2) an organization chart showing lines of responsibility of the key personnel and extending to each location approved by the Authority; and
 - (3) The location of the each ATS unit, airspace or aerodrome being served; and
 - (4) a list of the air traffic services to be provided; and
 - (5) Details of the applicant's staffing structure for each ATS unit; and
 - (6) details of procedures regarding the competency, qualifications, maintenance of current operating practice and fitness of personnel; and
 - (7) Details of procedures regarding the training and assessment of ATS personnel and the qualifications of ATS training personnel; and
 - (8) Details of procedures regarding the observation of Human Factors Principles in all systems, procedures, documentation and programmes

- (9) Details of the systems, procedures, and programmes regarding the safety and quality management system; and
 - (10) Details of the systems, procedures and programmes regarding the organization's Security Programme as required under the Twentieth Schedule; and
 - (11) Details of the maximum number of hours to be worked by ATS staff; and
 - (12) Procedures to control amend and distribute the plan.
- (d) The holder of ATS Operations Specifications shall:
- (1) hold at least one complete, current copy of its Master Plan at each ATS unit listed in its Master Plan, except that parts relating solely to a particular place need only be held at principal locations and the place concerned; and
 - (2) amend or revise the plan, as is necessary, to ensure that the information contained therein is kept up to date;
 - (3) incorporate in the master plan, any material as the Authority may require;
 - (4) Comply with all procedures and standards detailed in its Master Plan; And
 - (5) Make each applicable part of its Master Plan available to personnel who require those parts to carry out their duties; and
 - (6) Continue to meet the standards and comply with the requirements under this Schedule; and
 - (7) Notify the Authority promptly of any change of address for service, telephone number or facsimile number prior to and within 30 days of the intended date of the change.

24.045 ATS Manuals of Operations and Unit Specific Manuals

- (a) The ATS provider shall prepare and keep current for compliance by its personnel, a Manual of Operations (MANOPs) that contains the procedures and policies for the use and guidance of its personnel in the provision of the services listed in its Master Plan.
- (b) The ATS provider whose Operations Specifications provide for the provision ATS or other services from more than one location shall provide a separate Unit Specific Manual (USM) to be used in conjunction with the MANOPs. The USM shall contain procedures and instructions of a local nature which are either subject to frequent change or limited in application, but are, in all cases, supplementary to the provisions of the MANOPs.
- (c) The accountable manager shall sign a MANOPs or USM submitted to the Authority for approval.
- (d) the MANOPs and USMs shall be deemed acceptable by the Authority and amended or revised as directed by the Authority and as otherwise necessary to ensure that the information contained therein is appropriate and kept up-to-date.
- (e) The ATS provider shall control the distribution of the MANOPs and USMs, or pertinent portions, together with all amendments and revisions to ensure their provision to all personnel that are required to use them.
- (f) No person may provide for use of its personnel in the provision of ATS, any MANOPs, USM or any portion of such manual which has not been reviewed and found acceptable or approved by the Authority.
- (g) The MANOPs shall describe the overall (general) company policies and procedures regarding the provision of air traffic services listed in the Master Plan. The contents of the MANOPs shall include but is not limited to:

- (1) the information regarding hours of service, the establishment of an air traffic service and any transitional arrangements; and
- (2) personnel requirements and their responsibilities; and
- (3) details of the procedures regarding the control of documentation; and
- (4) details of the systems and procedures regarding general information requirements; and
- (5) details of the procedures regarding the notification of facility status; and
- (6) details of the systems and procedures regarding meteorological information and reporting; and
- (7) details of altimeter setting procedures; and
- (8) details of the procedures regarding the keeping of watch logs; and
- (9) Procedures regarding shift administration; and
- (10) Procedures to mitigate the effects of fatigue; and
- (11) details of the procedures regarding responsibility for control; and
- (12) details of the systems and procedures regarding co-ordination requirements; and
- (13) details of the procedures regarding contingency plan(s) ; and
- (14) details of the procedures to assist and to safeguard strayed or unidentified aircraft.
- (15) details of the procedures regarding incidents and accidents; and
- (16) details of the procedures regarding search and rescue and co-ordination with the designated search and rescue organization;
- (17) details of the procedures relating to the requirements of the ATS security programme, including provisions to protect against cyber-security threats;
- (18) details of systems and procedures regarding the retention and management of records; and
- (19) details of the procedures required in accordance with the Safety Management and Quality Management systems;
- (20) details of the procedures regarding disruptions to service.
- (21) details of the procedures for issuing ATC clearances and obtaining a correct read- back of clearances and safety-related information; and
- (22) details of systems and procedures regarding the provision of approach control services, where applicable; and
- (23) details of systems and procedures regarding the provision of aerodrome control service, where applicable; and
- (24) details of systems and procedures to ensure separation between controlled flights and

active special use airspace; and

- (25) principles, use and limitations of automation equipment associated with the service provision;
- (26) details of the procedures regarding the application of priorities; and
- (27) details of the procedures regarding flow control; and
- (28) details of systems and procedures regarding the provision of flight information service; and
- (29) details of systems and procedures regarding the provision of an aerodrome flight information service; and
- (30) details of systems and procedures regarding the provision of alerting service; and
- (31) details of the systems and procedures for reporting radio frequency interference and other occurrences of interference regarding any air navigation facility
- (32) details of the procedures regarding the processing of flight plans; and
- (33) details of the procedures regarding time system and accuracy in the provision of ATS; and
- (34) details of the procedures to ensure that information on the operational status of navigational aids is promptly forwarded to appropriate ATS units.
- (35) details of the procedures regarding the exchange of information between all users and operators including the Meteorological Services, Aeronautical Information Services, Aerodrome Operators and Air Operators; and
- (36) details of the radio and telephone procedures; and
- (37) details of the procedures regarding the provision of ATS surveillance services, where applicable; and
- (38) details of the procedures regarding aircraft emergencies and irregular operation; and
- (39) details of the arrangements in place for provision of AIS; and
- (40) details of the systems and procedures governing ATIS broadcasts; and
- (41) details of the procedures regarding the reporting of suspected infringements of legislation.
- (42) details of steps taken to prevent emission of laser beams from adversely affecting flight operations.
- (43) any other information required by the Authority.

(h) The MANOPs shall also contain:

- (i) a chart depicting the ATS provider's organizational structure and shows the accountable manager and the position of each key person along with the name, qualification, experience, duties and responsibilities of each key person and all other personnel involved in service provision.
- (ii) information on the status of the ATS provider's compliance with the applicable requirements

of these regulations and the Manual of Standards – Air Traffic Services and any deviations approved by the Authority.

- (i) The contents of each USM shall include but is not limited to:
 - (i) detailed unit operational procedures and requirements;
 - (ii) detailed unit administrative requirements, including the responsibilities of each operating position;
 - (iii) amplification and/or explanation of provisions of the MANOPs, where necessary.

24.047 Equipment Maintenance Control Manual

- (a) The ATS provider shall provide to the Authority an equipment maintenance control manual and subsequent amendments, for the use and guidance of equipment maintenance and operational personnel concerned, containing details of the organization's structure including –
 - (1) the accountable manager and designated person(s) responsible for the equipment maintenance system;
 - (2) procedures to be followed to satisfy the maintenance responsibility of these regulations and manufacturer specifications.
 - (3) procedures for the reporting of failures, malfunctions, and defects to the Authority, and the manufacturer within 24 hours of discovery; in addition, items that warrant immediate notification to the Authority by telephone/telex/fax, with a written follow-on report as soon as possible but no later than within 72 hours of discovery, are –
 - (i) failure of any piece of surveillance equipment resulting in partial or complete failure;
 - (ii) partial or complete communication system failure;
 - (iii) failure of any component of the aeronautical fixed network ;
 - (iv) failure or malfunction of any automation system;
 - (iv) failure or malfunction of any automatic voice or data recording system;
 - (v) any software or hardware malfunction resulting in a disruption to the safe provision of air traffic services;
 - (vi) any other condition considered an imminent hazard to safety.
- (b) This manual shall be amended or revised as is necessary to ensure that the information contained therein is kept up-to-date.
- (c) The ATS provider shall furnish the Manual described in this section, or pertinent portions, together with all amendments and revisions to all personnel and organizations that are required to use it.
- (d) No person may provide for use of its personnel in the provision of any air traffic service any Equipment Maintenance Control Manual or portion of this manual which has not been reviewed and approved for the ATS provider by the Authority.

(See Appendix 1 to 24.047 for the required contents of the Equipment Maintenance Control Manual.)

- (e) Upon receipt of material the Authority prescribes as mandatory for inclusion in any portion of the Equipment Maintenance Control Manual, the ATS provider shall make the necessary amendments as soon as reasonably possible.

24.049 Equipment Operating Manuals

- (a) Subject to paragraph (d) of this Subsection, the ATS provider or applicant shall submit proposed equipment operating manuals for each type and variant of equipment used, containing the normal, abnormal and emergency procedures relating to their use for approval by the Authority.
- (b) Every equipment operating manual shall be based upon the equipment manufacturer's data for the specific equipment type and variant used by the ATS provider and shall include specific operating parameters, details of the equipment systems, and of any other operating instructions or information applicable to the operations of the ATS provider that are approved by the Authority.
- (c) The design of the manual shall observe human factors principles.
- (d) The equipment operating manual shall be issued to all persons assigned operational control functions using any piece of equipment used by the ATS provider.

24.051 Submission and Revision of Manuals

- (a) Each manual required by this Schedule must –
 - (1) include instructions and information necessary to allow the personnel concerned to perform their duties and responsibilities with a high degree of safety;
 - (2) be in a form that is easy to revise and contains a system which allows personnel to determine the current revision status of each manual;
 - (3) have a date of the last revision on each page concerned;
 - (4) not be contrary to any requirement under these regulations and/or as prescribed by any Authorized Person and the ATS provider's Operations Specifications; and
 - (5) Observe Human Factors Principles in their design and utilization
- (b) No person may use or cause the use of any policy and procedure for any air navigation function prior to co-ordination with or approval by the Authority.
- (c) The ATS provider shall ensure that hard and soft copies of the manuals required under this Schedule and any other manual outlining any policy or procedure arrive at the Authority:
 - (i) For initial reviews: No later than 60 business days prior to the intended date of publication
 - (ii) For all other reviews: No later than 30 business days
- (d) A report that demonstrates compliance with the applicable Civil Aviation Regulations, the requirements of this Schedule and the procedures contained in the Manual of Standards – Air Traffic Services shall accompany all manuals submitted to the Authority as appropriate. The compliance

document shall be deemed acceptable and appropriate to the Authority

- (e) The MANOPs and Unit Specific Manuals shall be kept up to date and any requests for amendments thereto shall be forwarded to the Authority:
 - (i) At least 15 working days in advance of their effective date; or
 - (ii) in the case of amendments of an urgent or immediate nature, without delay, and no later than the date on which they are effective.
- (f) Operations personnel shall be expeditiously informed of the amendments to the manual of operations applying to their duties as well as of their entry into force.
- (g) Upon receipt of material the Authority prescribes as mandatory for inclusion in any portion of any manual required under these regulations, the ATS provider shall make the necessary amendments as soon as reasonably possible or at a time specified by the Authority.
- (h) The ATS provider shall ensure that the contents of the MANOPs and USM includes at least those subjects prescribed by the Authority that are applicable to the ATS provider's operations, including any additional materials made mandatory by the Authority.

(Note: In complying with sub-paragraph (f) above, The ATS provider shall ensure that a procedure is established to control the distribution of amendments to all manuals that includes a distribution list and describes the means by which the ATS provider confirms that each amendment is received and acknowledged by all members of staff affected by the amendment.)

24.053 Operational Documentation

- (a) The ATS provider shall hold copies of the relevant manuals and any other document necessary for the provision and operation of the services listed in its Master Plan.
- (b) The ATS provider shall establish a procedure to control all the documentation required under this Schedule which shall ensure that:
 - (1) All incoming documentation, including amendments, are reviewed, and actioned as required by Authorized Personnel; and
 - (2) All documentation is reviewed and authorised before issue; and
 - (3) all obsolete documentation shall be removed promptly from all points of issue or use; and
 - (4) any obsolete documents retained as archives are suitably identified as obsolete; and
 - (5) changes to documentation are reviewed and approved by an Inspector of the Flight Safety Division who shall have access to pertinent background information upon which to base their review and approval; and
 - (6) safety-significant changes are assessed in accordance with the safety management system; and
 - (7) the current version of each item of documentation can be identified to preclude the use of out-of-date editions.
- (c) current issues of the following documents shall be made available to personnel at all locations where they need access to such documentation for the provision of ATS. These documents shall include but not limited to:

- (1) the Civil Aviation Act and Civil Aviation Regulations of Jamaica
 - (2) the Manual of Standards – Air Traffic Services;
 - (3) the MANOPs and USM;
 - (4) Aerodrome Manual of Operations, where applicable;
 - (5) Relevant ICAO Annexes and Documents
- (d) The ATS provider shall ensure that where documents are held as computer based records and where paper copies of computer based records are made, they are subjected to the same control as paper documents.

24.055 Aeronautical Publications

- (a) The ATS provider shall provide for the use of all persons assigned operational functions during the performance of their duties, aeronautical charts and other publications approved by the Authority.
- (b) The aeronautical charts and other publications shall be current and appropriate for the proposed types and areas of operations to be conducted by the ATS provider.

24.057 Checklists

- (a) The ATS provider shall issue and or display at each operating position, as appropriate, a condensed checklist of procedures approved by the Authority as applicable for use during Normal, Abnormal, Emergency or Contingency procedures as prescribed by the Authority.
- (b) The ATS provider shall ensure that approved procedures include each item necessary for operational personnel to safely Takeover and Handover watches and for abnormal and emergency operations.
- (c) The ATS provider shall make the approved procedures readily useable at each operating position and the operations personnel shall be required to follow them when required by any operational manual submitted to the Authority.
- (d) The ATS provider shall ensure that the checklist procedures are designed so that operations personnel will not need to rely upon their memory for items to be checked, unless such items are required by an emergency check list.
- (e) The design and utilization of checklists shall observe relevant Human Factors Principles.

SUBPART F: SAFETY AND QUALITY MANAGEMENT SYSTEMS

24.059 Safety management system

- (a) The ATS provider shall establish a safety management system appropriate to the size and complexity of the operation, for the proactive management of safety, that integrates the management of operations and technical systems with financial and human resource management, and that reflects quality assurance principles.

- (b) The safety management system shall include policy and objectives for continuous improvement to the organization's overall safety performance.
- (c) As a part of the continuous safety improvements mentioned in sub-paragraph (b) above, The holder of ATS Operations Specifications shall ensure that:
 - (1) safety reviews of ATS units are conducted on a regular and systematic basis by personnel qualified through training, experience and expertise and having a full understanding of relevant Civil Aviation legislation, Procedures contained in the Manual of Standards – Air Traffic Services, safe operating practices and Human Factors principles; and
 - (2) Any actual or potential hazard related to the provision of ATS within an airspace or at an aerodrome, whether identified through an ATS safety management activity or by any other means, shall be assessed and classified by the appropriate ATS authority for its risk acceptability.
- (c) The safety management system shall clearly define lines of safety accountability throughout the operator's organization, including a direct accountability for safety on the part of senior management.
- (d) The safety management system shall include, as a minimum, the following:
 - (1) Processes to identify actual and potential safety hazards and assess the associated risks; and
 - (2) Processes to develop and implement remedial action necessary to maintain agreed safety performance; and
 - (3) Provision for continuous monitoring and regular assessment of the safety performance; and
 - (4) Recurring processes for continuous improvement of the performance of the safety management system; and
 - (5) Quality assurance processes to:
 - (i) Identify applicable requirements, regulations and standards and demonstrate compliance with them; and
 - (ii) Ensure technical manuals, checklists and other documentation are appropriately maintained and incorporate the latest amendments; and
 - (iii) Ensure that training programmes maintain staff proficiency and competency.
- (e) The safety management system shall be described in relevant documentation, and shall be acceptable to the Authority.
- (f) The programme referred to in paragraph (a) shall have an accountable manager that –
 - (1) has direct access to the Chief Executive Officer or Accountable Manager, on operational system safety matters;
 - (2) Conducts risk assessments of current and proposed operational policies, plans and procedures; and
 - (3) Coordinates the collection and analysis of operational risk related data
- (g) Before introducing any change to an ATS system which may have safety implications, the ATS provider shall:
 - (1) Conduct safety assessment in respect of proposals for significant airspace reorganizations,

for significant changes in the provision of ATS procedures applicable to an airspace or an aerodrome, and for the introduction of new equipment, systems or facilities; and

- (2) Consult users as far as practicable about the intended change; and
- (3) Ensure that hazard identification as well as risk assessment and mitigation are systematically conducted for any changes to those parts of the Air Traffic Management (ATM) functional system and supporting arrangements within managerial control, in a manner, which addresses:
 - (i) the complete life cycle of the constituent part of the ATM functional system under consideration, from initial planning and definition to post-implementation operations, maintenance and de-commissioning
 - (ii) the airborne, ground and, if appropriate, spatial components of the ATM functional system, through cooperation with responsible parties; and
 - (iii) the equipment, procedures and human resources of the ATM functional system, the interactions between these elements and the interactions between the constituent part under consideration and the remainder of the ATM functional System.
- (4) Demonstrate that an acceptable level of safety will be achieved as a result of the intended change, taking into account any associated effects of the change.
- (h) In relation to any change referred to in sub-paragraph (g) of this section and notwithstanding any actions taken in respect of those changes, the holder of an air traffic service shall ensure that adequate provision is made for monitoring after implementation to verify whether or not the expected levels of safety are being met.
- (i) The safety management system shall be integrated with the safety management systems of all related services for which coordination is required or otherwise beneficial for the safety of air navigation.

(Note (1) See Appendix 1 to 24.059 for specific requirements pertaining to the SMS.

(2) See the Manual of Standards – Air Traffic Services for further information and requirements regarding Air Traffic Service safety management and Safety Reviews)

24.061 Quality Management System

- (a) the ATS provider shall establish a quality management system within two (2) years after the issuance of any operational approval by the Authority and designate technically qualified auditor(s) who will monitor compliance with, and adequacy of, procedures required to ensure safe operational practices.
- (b) the quality management system shall be in conformity with the International Organization for Standardization (ISO) 9000 series of quality assurance standards and shall be certified by the National standards body of Jamaica.
- (c) the quality management system and the quality manager shall be approved by the Authority.
- (d) the ATS provider shall describe the quality management system in relevant documentation.
- (e) the Authority may accept the nomination of two quality management persons, one for ATS operations and one for equipment maintenance.
- (f) the quality management system shall cover all services being provided and shall include—
 - (1) a quality policy and safety policy designed to meet the needs of all the different users as closely as possible;

- (2) a quality assurance program that contains procedures designed to verify that all operations are being conducted in accordance with applicable requirements, standards and procedures.
- (3) procedures to demonstrate the functioning of the quality system by means of manuals and monitoring documents and other quality indicators.
- (4) an audit programme to audit the organization for compliance with the quality policy and remedial actions as appropriate
- (5) a procedure for preventive action to ensure that potential causes of problems that have been identified within the system are remedied;
- (6) management reviews of the quality management system to ensure compliance with, and adequacy of, procedures to ensure safe and efficient operational practices.

(Note: Compliance monitoring shall include a feedback system to the accountable manager to ensure corrective action as necessary)

- (g) The safety policy procedures shall ensure that the safety policy is understood, implemented, and maintained at all levels of the organization.
- (h) The procedure for corrective action shall specify how—
 - (1) to correct an existing problem; and
 - (2) to follow up a corrective action to ensure the action is effective; and
 - (3) to amend any procedure required by this Schedule as a result of a corrective action; and
 - (4) management will measure the effectiveness of any corrective action taken.
- (i) The procedure for preventive action shall specify how—
 - (1) to correct a potential problem; and
 - (2) to follow-up a preventive action to ensure the action is effective; and
 - (3) to amend any procedure required by this Schedule as a result of a preventive action; and
 - (4) management will measure the effectiveness of any preventive action taken.
- (j) The internal quality audit programme shall—
 - (1) specify the frequency and location of the audits taking into account the nature of the activity to be audited; and
 - (2) ensure audits are performed by trained auditing personnel who are independent of those having direct responsibility for the activity being audited; and
 - (3) ensure the results of audits are reported to the personnel responsible for the activity being audited and the manager responsible for internal audits; and
 - (4) require preventive or corrective action to be taken by the personnel responsible for the activity being audited if problems are found by the audit; and
 - (5) ensure follow up audits to review the effectiveness of any preventive or corrective action taken.
- (k) The procedure for management review shall—
 - (1) specify the frequency of management reviews of the quality assurance system taking into account the need for the continuing effectiveness of the system; and
 - (2) identify the responsible manager who shall review the quality assurance system; and

- (3) ensure the results of the review are evaluated and recorded.
- (l) The key person who has the responsibility for internal quality assurance shall report directly to the Chief Executive or the Accountable Manager on matters affecting the safe provision of any air traffic service provided

SUBPART G: COMMUNICATION NAVIGATION AND SURVEILLANCE EQUIPMENT MAINTENANCE

24.063 Authorized Equipment

- (a) No person may operate any equipment listed in the ATS provider's Equipment Control Manual unless that equipment is in a serviceable condition as prescribed by the manufacturer and meets the applicable manufacturer requirements for all operations that require the equipment so specified.
- (b) No person may use or cause to be used any specific type of equipment until it has completed satisfactory initial certification and lists that type of equipment in the approved EMCM.
- (c) No person may operate additional or replacement equipment of a type and/or specification for which it is currently authorized unless it can show that each piece of equipment has completed an evaluation process for inclusion in the ATS provider's equipment inventory.

24.065 Maintenance Quality System

- (a) Subject to paragraph (d) of this Subsection, for maintenance purposes, the ATS provider shall establish a maintenance quality system that shall include at least the following functions –
 - (1) monitoring the activities that are being performed in accordance with the accepted procedures;
 - (2) ensure that all contracted maintenance is carried out in accordance with the contract;
 - (3) monitoring the continued compliance with the maintenance requirements; and
 - (4) monitoring compliance with, and adequacy of, procedures required to ensure safe maintenance practices and serviceable equipment.

(Note: Compliance monitoring must include a feedback system to the accountable manager to ensure corrective action as necessary.)

- (b) The ATS provider's equipment maintenance quality system shall include a quality assurance programme that contains procedures designed to verify that all maintenance operations are being conducted in accordance with all applicable requirements, standards and procedures.
- (c) Where the ATS provider also maintains its own equipment, the ATS provider's quality management system may be combined with the requirements of an approved equipment maintenance program and submitted for approval and acceptance to the Authority.

(See Appendix 1 to 24.065 for additional quality system requirements for maintenance activities.)

(d) The ATS provider may have a system of quality assurance that is at variance with the requirements of paragraph (a) of this Subsection when prescribed or approved by the Authority.

24.067 Equipment Service and Maintenance Records

- (a) The ATS provider shall have an equipment technical log that contains the record of all maintenance records on that equipment during the course of its operations in a form prescribed by the Authority.
- (b) This log, its contents, layout and the procedures for its use shall be approved by the Authority prior to its use in the provision of ATS.
- (c) Each page shall be identifiable to the ATS provider, separately numbered with a unique number and shall be arranged chronologically in a bound document.
- (d) Each page shall be provided in at least duplicate with each copy being a different colour, carbonless and detachable.
- (e) This uniquely numbered, bound document will be assigned to a specific piece of equipment operated by the ATS provider until all pages are used.
- (f) This document shall be retained by the ATS provider in safe custody as long as the equipment is operated or for three months, whichever is longer.
- (g) If the ATS provider desires to use a different methodology, it must submit the forms and procedures to the Authority for technical evaluation and approval, prior to use of the different methodology in the provision of ATS.

(See Appendix 1 to 24.067 for the contents of the Equipment Technical Log.)

24.069 Deferred Defects Summary

- (a) The ATS provider shall have for each piece of equipment, a log of the deferred defects for that equipment that is attached to or aligned with the Equipment Technical Log.
- (b) This log may be included in the printed Equipment Technical Log or attached in some manner to the cover of that log and will include the information prescribed by the Authority.
- (c) This document shall be retained by the ATS provider in safe custody as long as the equipment is included in the organization's equipment inventory.
- (d) The maximum period of deferral with respect to any equipment or component of any such equipment that is used by the ATS provider shall be as prescribed by the manufacturer or as approved by the Authority, whichever is shorter.

(See Appendix 1 to 24.069 for the contents of the Deferred Defects Log.)

SUBPART H: AIR TRAFFIC SERVICE ORGANIZATION

24.071 Applicability

This Subpart provides those certification requirements that apply to management of air traffic service operations personnel and their functions.

24.073 Key Personnel

- (a) The ATS provider shall have recruit a sufficient number of appropriately skilled and qualified

personnel with proven competency in civil aviation to manage, support, supervise and ensure the provision of ATS in a safe, efficient continuous and sustainable manner relevant to the services provided.

- (b) The ATS provider shall engage, employ or contract:
- (1) A key person identified as the Chief Executive Officer or Accountable Manager, acceptable to the Authority, who has the corporate authority within the applicant's organization to ensure that each air traffic service listed in its Master Plan:
 - (i) Provides a safe service to aircraft to the highest degrees of safety standards required by the Authority; and
 - (ii) Can be adequately and continuously financed and resourced; and
 - (iii) Is provided in accordance with the requirements prescribed by this Schedule.
 - (2) A key person or persons who are responsible for ensuring that the applicant's organization provides a safe service to aircraft and complies with the requirements of this Schedule. Such nominated person or persons shall be ultimately responsible to the Chief Executive Officer or Accountable Manager; and
- (c) Persons mentioned in 24.065 (b) (2) shall be available and serve in the following positions or their equivalent –
- (1) Director of Operations;
 - (2) Operations Manager;
 - (3) Director of Safety
 - (4) Safety Manager
 - (5) Quality Manager
 - (6) Chief Equipment Maintenance Engineer
- (See Appendix 1 to 24.073 for a description of the qualifications and responsibilities of key personnel employed to the ATS organization)*
- (d) the persons occupying the positions specified in sub-paragraph (c) above shall report to the accountable manager
- (e) The ATS provider shall ensure that all the functions and responsibilities identified in Appendix 1 to 24.073 and allocated to the positions indicated in (a) above are assigned.
- (Note: Large organizations may prefer to use titles other than those above. However, the ATS provider must demonstrate to the Authority that the responsibilities and job functions identified have been appropriately allocated.)*
- (f) The job descriptions and minimum qualifications for all positions in the ATS organization shall be subject to the approval of the Authority.
- (g) The Authority may approve positions or numbers of positions, other than those listed, if the ATS provider is able to show that it can perform the operation with the highest degree of safety under the direction of fewer or different categories of management personnel due to—
- (1) the kind of operations involved;

- (2) the scope of service provision; and
- (3) the area(s) of operation.

24.075 Personnel Qualifications

- (a) The ATS provider shall ensure that all operations personnel are properly instructed in their duties and responsibilities and the relationship of such duties to the operation as a whole.
- (b) The ATS provider shall establish procedures to ensure that those personnel who provide the air traffic services hold appropriate current licences and ratings issued under the Eighth “A” Schedule and in particular that:
 - (1) personnel giving instruction in an operational environment hold an appropriate and current ATS instructor qualifications; and
 - (2) personnel carrying out assessment for the issue of licences or the issue or validation of ratings, hold an appropriate current ATS instructor or examiner qualifications as specified by the Authority; and
 - (3) facilitate, for validated air traffic service licence holders, compliance with the recent requirements of the Eighth “A” and “B” Schedules.
- (c) The ATS provider shall ensure that all ATS Electronics Personnel or other personnel engaged, in the operation, maintenance and installation activities of ATS equipment listed in the organizational Master Plan or otherwise required to provide any Air Traffic Service, whether employed directly or sub-contracted, shall be qualified for their job functions in accordance with ICAO Training Manual, Document 7192 Part-E2 or any equivalent document issued by the Authority.
- (d) The ATS provider shall ensure, as far as practicable, that licence holders do not exercise the privileges of the licence:
 - (1) Unless they are familiar with all relevant and current information; and
 - (2) Unless they are in possession of current medical certificates and comply with any endorsements specified therein; or
 - (3) While under the influence of any psychoactive substance; or
 - (4) When any decrease in their medical fitness might render them unable safely to exercise the licence privileges.
- (e) ensure that any incidence of an individual granted a licence under schedule 8 “A” who has reported for performs duties while suspected of being under the influence of any psychoactive substance is immediately suspended from duty and submits without delay, a report of the details of the case to the Authority.

24.076 Proficiency Checks

- (a) As part of the quality system, the ATS provider shall assess the proficiency of the personnel under his employment.
- (b) A formal proficiency assessment shall be carried out to assess whether the applicant has achieved and is maintaining the required level of competence.

- (c) At each facility the ATS provider shall nominate a person to establish and maintain unit proficiency standards;
- (d) specific senior officers shall be appointed and tasked by the person responsible for the services as proficiency assessment officers for each discipline;
- (e) at units where operational staff are multi - disciplined, the person responsible for the services shall appoint and task at least one proficiency assessment officer. Proficiency assessment officers may be appointed and tasked for each discipline although operating within a multi- disciplined environment.
- (f) At each major facility, the appropriate manager shall appoint and task an ATS officer responsible for satellite units as the proficiency assessment officer.
- (g) A person assessed as unsatisfactory shall not be permitted to continue in the assessed discipline without supervision. If after a reasonable period a person is unable to pass the proficiency check, all details pertaining to the unsatisfactory assessment shall be assembled and sent to the Authority.
- (h) Proficiency assessment officers shall prepare proficiency check rosters so that all operational staff are screened on a regular basis. Personnel shall be given advanced notice of a real time annual proficiency check so that adequate preparation, mentally and functionally, can be made.
- (i) In addition to the requirements of sub-paragraph (h), a formal assessment shall be carried out at least every 12 months to determine whether all operational personnel are maintaining the required level of competence in the positions for which a valid rating is held. Routine assessments should be conducted on an on - going basis during duty assignment.
- (j) Personnel shall be assessed in key elements of the performance areas detailed on an assessment form.
- (k) An assessment shall be made of both the quality of work and the level of knowledge of the elements assessed.
- (l) The Manual of Operations shall also include the procedures for:
 - (1) ATS personnel to undertake remedial training; and
 - (2) updating ATS personnel skills when introducing new equipment into service and any change of procedures or other operationally significant change.
- (m) Proficiency and training records shall be maintained for all ATS personnel.

24.077 Training and assessment

- (a) The ATS provider shall establish policies and procedures that are approved by the Authority, for the recruitment and training of all personnel.
- (b) The training programmes and procedures established in accordance with sub-paragraph (a) above shall be designed to assess and ensure the initial and continuing competence of operational personnel including continued competence in using new equipment procedures, updated communications and record keeping policies.
- (c) The programmes and procedures in sub-paragraph (b) shall ensure that operational personnel are trained, given regular recurrent training, at least annually, in normal and emergency procedures and are assessed on such.

- (d) The ATS provider shall conduct a yearly review of the training plan for each staff at the beginning of the year to identify any gaps in competency, changes in training requirement and prioritize the type of training required for the coming year.
- (e) The Authority may issue interim training programme approval in order to permit the conduct of required training subject to such conditions as may be stipulated. Following evaluation of the programme by the Authority, the results of which are satisfactory, final training programme approval will be issued.
- (f) The ATS provider shall submit to the Authority any revision to an approved training programme, and shall receive written approval from the Authority before that revision can be used.

24.079 Facility requirements

- (a) Each ATS provider shall establish the following facilities that are appropriate to the air traffic services it provides:
 - (1) aerodrome control towers;
 - (2) approach control offices;
 - (3) area control centres;
 - (4) aerodrome flight information offices;
 - (5) flight information centres;
 - (6) dedicated training and assessment facilities.

(Note. 1- Guidance on ATS facility requirements are described in ICAO Air Traffic Services Planning Manual, ICAO Doc. 9426 and shall, where applicable, be observed during the construction and design of the ATS facilities mentioned in sub-paragraph (a))

- (b) An applicant for approval of an aerodrome control service or an aerodrome flight information service, shall establish procedures to ensure that any aerodrome control tower or aerodrome flight information office, including any mobile tower or office is:
 - (1) Constructed and situated to provide a suitable environment which gives:
 - (i) unrestricted visibility of all runways, taxiways and aprons; and
 - (ii) the maximum practicable visibility of traffic flying in the vicinity of the aerodrome; and
 - (iii) protection from glare and reflection;
 - (iv) assurance that an acceptable level of security is assured in accordance with the organization's Security Programme; and
 - (v) protection from noise and extremes of temperature.

(Note: Selection of structural materials used for control tower construction shall take into account the operational acoustic requirements of the tower cab)

- (2) Safeguarded from any development that would affect the requirements of paragraph sub-paragraph (1) above; and
- (3) At solo watch locations, provided with amenities that ensure the minimum possible interruption to, or degradation of, air traffic services; and

- (4) Equipped so as to permit rapid, clear and reliable two-way voice communication with:
- (i) aircraft in or adjacent to airspace for which the applicant has responsibility; and
 - (ii) aircraft, vehicles and persons, on or adjacent to the manoeuvring area; and
- (5) Provided with the following minimum equipment, appropriately located:
- (i) a display system or systems designed to show the disposition of current and pending aerodrome traffic together with ancillary information for individual aircraft; and
 - (ii) appropriate power supplies; and
 - (iii) appropriate and current maps and charts; and
 - (iv) binoculars; and
 - (v) a clock displaying UTC in hours and minutes; and
 - (vi) a watch log; and
 - (vii) an outside temperature indicator; and
 - (viii) a display showing the aerodrome QNH that is obtained from an AWOS or other meteorological device approved by the Authority, that uses independent readings from an aneroid barometer or barometric altimeter; and
 - (ix) a signal lamp capable of showing green, red and white directed beams; and
 - (x) telephone communications; and
 - (xi) status monitors for any approach and landing aids and any road or rail signalling equipment affecting the use of a runway; and
 - (xii) visibility and cloud height checkpoints; and
 - (xiii) voice and data recording equipment; and
 - (xiv) wind direction and speed display; and
 - (xv) an audible alarm to alert the emergency services; and
 - (xvi) an aeronautical fixed network terminal, where provided for in a written agreement with another agency, an alternative means of reception and transmission of information normally conveyed via the aeronautical fixed network; and
 - (xvii) airfield lighting controls and indication panel.

(Note: See Appendix 1 to 24.079 for a complete listing of communication requirements)

- (c) An applicant for an approval which includes an approach control service shall establish procedures to ensure that approach control offices are provided with:
- (1) equipment enabling to the fullest extent practical, two-way voice communication; and
 - (2) the following minimum equipment, appropriately located:
 - (i) a display system or systems designed to show the disposition of current and pending flights together with ancillary information for individual aircraft; and
 - (ii) appropriate power supplies; and
 - (iii) appropriate and current maps and charts; and
 - (iv) a clock; and
 - (v) a watch log; and
 - (vi) a display of the appropriate pressure settings; and
 - (vii) status monitors as appropriate for navigation, approach, and landing aids; and
 - (viii) telephone communications; and
 - (ix) voice and data recording equipment; and
 - (x) an aeronautical fixed service terminal or, where provided for in a written agreement with another agency, an alternative means of reception and transmission of information normally conveyed via the aeronautical fixed service;

and

- (xi) for approach control operating positions for an aerodrome at which or in relation to which ground based navigational aids are installed and utilized for instrument approaches, status monitors at the approach control or approach control radar operating position for that aerodrome; and
- (xii) a display of wind direction, speed, visibility or, where applicable, runway visual range, that is fed from the same source as the corresponding equipment in the aerodrome control operating position.

(See Appendix 1 to 24.079 for a complete listing of communication requirements)

- (d) At units where approach control and aerodrome control are performed as a combined function in the same office, the facilities required in sub-paragraphs (b) and (c) need not be duplicated solely as a consequence of appearing in both paragraphs. Any duplication may be limited to those elements that are necessary for any particular operating position.
- (e) The applicant shall establish procedures to ensure that the aeronautical telecommunications equipment required by sub-paragraphs (b) and (c) are installed, commissioned, operated and maintained in accordance with manufacturer specifications, the requirements of these regulations, ICAO Annex 10 to the Convention and any other requirement of the Authority.
- (f) The applicant shall establish procedures to ensure that visual display units used by air traffic services are positioned and the information presented with due regard to the relative importance of such information displayed and ease of use by the staff concerned.
- (g) The equipment required by under this section shall have a level of reliability, availability and equipped with appropriate redundancies as applicable and maintained in accordance with manufacturer specifications, the requirements of these regulations, ICAO Annex 10 to the Convention and any other requirement of the Authority.
- (h) Appropriate procedures for direct-speech communications shall be developed, in respect of each ATS facility listed in sub-paragraph (a), to permit immediate connections to be made between all units, operators or agencies which exchange information with any ATS unit for very urgent calls concerning the safety and security of aircraft, and the interruption, if necessary, of less urgent calls in progress at the time.
- (i) The applicant shall establish procedures to ensure that the status monitors required by sub-paragraphs (b)(5)(xi) and (c)(2)(vii) and (xi) are fitted with:
 - (1) an audible signal to indicate a change of status; and
 - (2) a visual indication of the current status.

24.081 Security

- (a) The ATS provider shall establish a security programme which shall specify the physical security, practices and procedures to be followed to minimise the risk of destruction of, damage to, or interference with the operation of any ATS facility where such destruction, damage or interference is likely to endanger the safety of aircraft.
- (b) The security programme shall conform to all requirements prescribed in the Twentieth Schedule
- (c) The security programme shall include and specify such physical security requirements, practices and procedures that may be necessary:

- (1) to ensure that all appropriate personnel are familiar, and comply with, the relevant requirements of all national security programmes.
- (2) to ensure that all employees are acquainted with preventive security measures and techniques in regards to all related air transport operations so that they may contribute to the prevention of acts of sabotage or other forms of unlawful interference;
- (3) to ensure that these personnel are able to take appropriate action to prevent acts of unlawful interference such as sabotage or unlawful seizure of aircraft and to minimize the consequences of such events should they occur;
- (4) to make a report of unlawful interference from any crewmember is made, without delay, to the designated local authority and the Authority in the State of the operator;
- (5) to ensure that all operating positions contain a checklist of the procedures to be followed in the event of unlawful interference or other security provisions. All checklists shall observe Human Factors Principles and shall be supported by guidance –

(i) On the course of action to be taken should a bomb or suspicious object be found; and

(ii) To ensure that access to permanent ATS facilities operated by the applicant are subject to control to prevent unauthorised entry; and

(iii) To protect personnel on duty; and

(iv) to secure operational Information and data that is received or produced or otherwise employed, so that access to it is restricted only to those authorized; and

(v) To be followed in the event of a bomb threat or other threat of violence against an ATS unit; and

(vi) to monitor unattended ATS unit buildings to ensure that any intrusion or interference is detected; and

(vii) to conduct security risk assessments and mitigation, security monitoring and improvement, security reviews and lesson dissemination; and

(viii) to contain the effects of security breaches and to identify recovery action and mitigation procedures to prevent re- occurrence.

- (d) The ATS provider shall ensure the security clearance of its personnel as required under the Twentieth Schedule and coordinate with the relevant authorities to ensure the security of its facilities, personnel, information and data.

SUBPART I: AIR TRAFFIC SERVICE REQUIREMENTS FOR INFORMATION

24.083 General information requirements

- (a) The ATS provider shall establish systems and procedures to ensure that each ATS unit, as appropriate to the area of responsibility, is kept informed of the operational status of:
- (1) non-visual navigation aids; and
 - (2) visual aids essential for take-off, departure, approach, and landing procedures; and

- (3) visual and non-visual aids essential for surface movement.
- (b) The ATS provider approved to provide a service at an:
 - (1) aerodrome control unit; or
 - (2) approach control unit; or
 - (3) aerodrome flight information service unit:
- (c) shall establish and procedures and agreement(s) with other ATS units, meteorological agencies and other interested organizations to ensure the unit is kept informed of operationally significant conditions on the movement area. This shall include information on the existence of temporary hazards and the operational status of any associated facilities at the aerodrome. The elements of information to be provided shall at a minimum, cover those elements prescribed in the Manual of Standards – Air Traffic Services.
- (d) The ATS provider shall establish procedures for the receipt and use of information on the following activities where the activity could affect airspace used by flights within the applicant's area of responsibility:
 - (1) any activities requiring approval subject to an assessment regarding the impact on navigable airspace; and
 - (2) pre-eruption volcanic activity; and
 - (3) volcanic eruptions; and
 - (4) volcanic ash-cloud; and
 - (5) release into the atmosphere of radioactive materials or toxic chemicals.
- (e) Procedures required by this paragraph shall include procedures and agreements regarding distribution and transmission of information to aircraft, other ATS units, meteorological agencies and other interested organizations.

(Note: See Appendix 1 to 24.083 for An ATS unit requirements for information)

24.085 Time in air traffic services

- (a) ATS unit shall use Coordinated Universal Time (UTC) and shall express the time in hours and minutes and, when required, seconds of the 24-hour day beginning at midnight.
- (b) ATS units clocks required in 24.079 shall display the time in hours, minutes and seconds in accordance with sub-paragraph (a) above and be clearly visible from each operating position in the unit concerned.
- (c) ATS unit clocks and other time-recording devices shall be checked as necessary to ensure correct time to within plus or minus 30 seconds of UTC. Wherever data link communications are utilized by an air traffic services unit, clocks and other time-recording devices shall be checked as necessary to ensure correct time to within 1 second of UTC.
- (d) The correct time shall be obtained from a standard time station or, if not possible, from another unit which has obtained the correct time from such station.

- (e) Aerodrome control towers shall, prior to an aircraft taxiing for take-off, provide the pilot with the correct time, unless arrangements have been made for the pilot to obtain it from other sources. ATS units shall, in addition, provide aircraft with the correct time on request. Time checks shall be given to the nearest half minute.

24.087 Notification of facility status

- (a) The ATS provider shall establish procedures to notify users of its services of relevant operational information and of any changes in the operational status or availability of each facility or service listed in the applicant's Master Plan.
- (b) The procedures shall ensure, as a minimum, that:
 - (1) operational information for each of the applicant's air traffic services is forwarded to the aeronautical information service responsible for the AIP; and
 - (2) ATS units and the users of the air traffic services provided by them are notified without delay of any change in operational status of the facility or service that may affect the safety of air navigation and, except where the change is temporary in nature, information concerning any change in operational status is forwarded to the aeronautical information service for promulgation by NOTAM.

(Note: See Appendix 1 to 24.083 for An ATS unit requirements for information)

24.089 Meteorological information and reporting

- (a) The ATS provider shall establish systems, procedures and agreements to ensure satisfactory provision of meteorological information to ATS units. The meteorological information shall be that necessary for the performance of their respective functions, in a form that requires a minimum of interpretation by ATS personnel.
- (b) The applicant shall establish procedures to ensure that equipment used in the compilation of routine or special weather reports:
 - (1) supplies data representative of the area for which the measurements are required; and
 - (2) where that equipment consists of multiple wind direction and speed indicators, identifies the runway, or section of the runway, monitored by each instrument.
- (c) The ATS provider shall establish a procedure to ensure that the information contained in a meteorological bulletin remains unchanged through onward transmission.
- (d) Procedures shall not prohibit the transmission to aircraft of meteorological information from a source other than those specified in sub-paragraph (a) above where it is in the interests of safety, provided that the origin of the information is made clear when doing so.

24.091 Altimeter setting procedures

- (a) The ATS provider shall establish a procedure to ensure that:
 - (1) Altimeter settings are available in both hectopascals/millibars and inches of mercury; and

- (2) Altimeter settings given in hectopascals/millibars are rounded down to the nearest whole hectopascal/millibar; and
- (3) the appropriate aerodrome or area QNH setting is provided to all aircraft on initial radio contact, including aircraft that advise having received the current applicable ATIS broadcast; and
- (4) ATS units provide an aircraft, on request, the current applicable aerodrome or area QNH setting; and
- (5) The requirements of these regulations and ICAO Annex 5 are met.

SUBPART J: SHIFT ADMINISTRATION

24.093 General

- (a) The ATS provider shall establish a procedure to ensure that adequate time is provided:
 - (1) At the beginning and end of each shift, for the performance of those duties required:
 - (i) Before providing an air traffic service; and
 - (ii) After ceasing to provide an air traffic service;
- (b) The duties mentioned in sub-paragraph (a) (1) above shall cover all takeover and handover of watch procedures outlined in the Manual of Operations.

24.095 Watch log

- (a) An air traffic service ATS provider shall ensure that a watch log, with sequentially numbered pages, is kept at each ATS unit or where a unit has physically separate operations areas at each such location within the unit.
- (b) The watch log procedures shall ensure that:
 - (1) the watch log is maintained by the watch supervisor, or the person that has assumed responsibility for watch at a particular operating position; and
 - (2) the watch log is maintained throughout the hours of watch of the unit or operations room; and
 - (3) all entries include the time of entry; and
 - (4) the person responsible for maintaining the watch log signs 'Take Over Watch' and 'Hand Over Watch' and that transfer of responsibility is indicated by successive 'Take Over Watch' and 'Hand Over Watch' entries; and
- (c) Watch log entries shall be:
 - (1) in chronological sequence and in indelible ink; and
 - (2) without erasure, defacement, or obliteration; and
 - (3) corrected by drawing a single line through the erroneous information and initialling the correction; and

- (d) actual times of opening and closing watch are recorded in the watch log, together with the reason for every variation from published hours of service; and
- (e) Significant items affecting any operational position is recorded accurately in the watch log; and
- (f) Watch logs are retained for a period of three (3) years from the date of final entry.

SUBPART K: PREVENTION OF FATIGUE

24.097 General

- (a) The ATS provider shall establish suitable procedures to mitigate the effects of fatigue on ATS operational staff.
- (b) The ATS provider may, in compliance with sub-paragraph (a) above and for the purposes of managing its fatigue-related safety risks, establish either:
 - (1) Operating position time, duty period and rest period limitation that are within the prescriptive fatigue management regulations of this section; or
 - (2) a Fatigue Risk Management System (FRMS) in compliance with 24.101 for all operations; or
 - (3) an FRMS in compliance with 24.101 for part of its operations and the requirements of sub-paragraph (b) (i) for the remainder of its operations.
- (c) The procedures required pursuant to paragraph (a) of this Subsection shall be approved by the Authority where the ATS provider has set out procedures to ensure that Air Traffic Control Officers are not assigned to duty during operational time while fatigued, taking into consideration -
 - a. the numbers of sectors to be manned during each assignment;
 - b. change in work schedule between consecutive assignments;
 - c. Single person operations
 - d. night time operations;
 - e. standby and reserve duty periods;
 - f. any other duty assignments.
- (d) The ATS provider is required to receive approval of the policy mentioned in sub-paragraph (a) above from the Authority as well as any procedures and record completion and retention for the duty time scheme it uses with respect to its operations personnel.
- (e) Where the ATS provider operates or intends to operate in accordance with sub-paragraph (b) (i) above, the ATS provider shall:
 - (1) Establish and include the maximum number of hours worked in a given period or minimum number of rest periods in the Organizational Master Plan prescribed in these regulations.
 - (2) Maintain a record of each Air Traffic Control Officer's assigned and actual duty times and minimum rest periods in accordance with a system set out and approved by the Authority in its MANOPs.
- (f) When requested by an Air Traffic Control Officer, the ATS provider shall, with five working days of the request being made, provide ATS personnel with a copy of the record required by paragraph (c) of this subsection

- (g) The ATS provider shall ensure that the required records for tracking operational and duty times and rest periods are maintained in a manner so that an updated record is available before a person begins their duty day or their first operational duty assignment of the day.
- (h) The ATS provider shall ensure that the required records have been updated to the day on which an Air Traffic Control Officer begins duty.
- (i) Where the ATS provider adopts prescriptive fatigue management regulations for part or all of its operations, the Authority may approve, in exceptional circumstances, temporary variations to these regulations on the basis of a risk assessment provided by the ATS provider. Approved variations shall provide a level of safety equivalent to, or better than that achieved through the prescriptive fatigue management regulations. Any temporary variation issued under this sub-paragraph shall be subject to any conditions prescribed by the Authority.

(Note (1). See Appendix 1 to 24.097 for regulatory duty and operational time limitations)

Note (2).- Application for any variation of the prescriptive requirements in accordance with 24.097 (h) above shall be sent no in sufficient time to allow a comprehensive evaluation of the risk assessment by the Authority)

24.099 Variation of Operational and Duty Time

No person shall adversely vary or cause any adverse variation of the limitations prescribed in Appendix 1 to 24.097, within normal operations or otherwise without the prior consent of the Authority.

(See Appendix 1 to 24.097 for the contents of the duty time records and minimum rest periods)

24.101 Fatigue Risk Management System

- (a) Where the ATS provider establishes or intends to establish a FRMS in accordance with 24.097 (b) (2) or (3), the Authority shall approve the ATS provider's FRMS before it may take the place of any or all of the prescriptive fatigue management requirements under these regulations.
- (b) An approved FRMS shall provide a level of safety equivalent to, or better than, the prescriptive fatigue management regulations.
- (c) In order to obtain operational approval for the use of any FRMS, the ATS provider shall:
 - (1) establish maximum values for operating position times and duty period(s), and minimum values for rest periods. These values shall be based upon scientific principles and knowledge, subject to safety assurance processes acceptable to the Authority;
 - (2) mandate a decrease in maximum values and an increase in minimum values in the event that the ATS provider's data indicates these values are too high or too low, respectively; and
 - (3) approve any increase in maximum values or decrease in minimum values only after evaluating the ATS provider's justification for such changes, based on accumulated FRMS experience and fatigue related data.
- (d) Where The ATS provider implements a FRMS to manage fatigue-related safety risks, the operator shall, as a minimum:
 - (1) incorporate scientific principles and knowledge within the FRMS;
 - (2) identify fatigue-related safety hazards and the resulting risks on an on-going basis;
 - (3) ensure that remedial actions, necessary to effectively mitigate the risks associated with the hazards, are implemented promptly;

- (4) provide for continuous monitoring and regular assessment of the mitigation of fatigue risks achieved by such actions; and
- (5) provide for continuous improvement to the overall performance of the FRMS.

(e) Where The ATS provider elects to adopt a FRMS, it shall be integrated with the SMS.

24.103 Air traffic controller Responsibilities: Prevention of Fatigue

- (a) Where an Air Traffic Control Officer is relieved of duties he shall -
 - (1) while away from the principal operational location, use the period to obtain adequate rest prior to next reporting for duty; and
 - (2) take all measures necessary to report to duty in a rested condition following the relief from duty period.
- (b) Where an air traffic controller acts in an air traffic controller position for more than one ATS provider, that air traffic controller shall provide each ATS provider with an accurate record of all operational and duty time assignments.
- (c) Where an air traffic controller changes their place of employment as an air traffic controller, that air traffic controller shall provide a record of operational time for the last 12 months to his new employer.

24.109 Single Person Operations

- (a) The ATS provider shall not schedule or otherwise cause an Air Traffic Controller to, nor shall any Air Traffic Controller otherwise, provide any air traffic service at an operational position or sector within any ATS unit staffed by only that person unless the ATS provider establishes and maintains procedures approved by the Authority for such operations.
- (b) The procedures required by sub-paragraph (a) above shall, at a minimum, covering the following:
 - (1) sector capacity and work load
 - (2) distractions
 - (3) fatigue
 - (4) staff redundancy
 - (5) ATS unit security
 - (6) incident reporting procedures
 - (7) contingency plan should any person required by the operation becomes incapacitated
- (c) The ATS provider shall conduct a risk assessment pursuant to the requirements of the ATS provider's Safety Management System or any other system established for the conduct of risk assessments prior to implementing any single person operations. The results of the risk assessment and mitigation measures developed thereto shall accompany any application required under sub-paragraph (a) to introduce single person operations within the ATS holder's organization.

24.111 Air traffic service provider Responsibilities

- (a) Where the ATS provider relieves an air traffic controller from duty at an operational location other than the air traffic controller's principal operational location, the ATS provider shall provide suitable accommodation for rest.
- (b) The ATS provider shall not assign an air traffic controller to duty where the assignment would result in an air traffic controller exceeding the operational time limitations of these Regulations;
- (c) The ATS provider shall not assign an air traffic controller to reserve or standby duty for a period of more than 12 hours in any 24 hour period.

24.113 Manual of Operations

- (a) The ATS provider conducting ATS operations on a 24-hour basis shall describe all measures and procedures regarding the prevention of fatigue in the Manual of Operations.

SUBPART L: COORDINATION REQUIREMENTS**24.115 Coordination**

- (a) The ATS provider shall establish procedures to ensure that any controlled flight is under the control of only one ATC operating position at any given time.
- (b) The ATS provider shall establish procedures to ensure that responsibility for the control of all aircraft operating within a given block of airspace is vested in a single operating position. Control of an aircraft or groups of aircraft may be delegated to other operating positions provided that coordination between all affected operating positions is assured.
- (c) The ATS provider shall establish procedures for the transfer of responsibility for the control of an aircraft which shall ensure that:
 - (1) Transfer arrangements are:
 - (i) Agreed between ATS units responsible for adjacent airspaces and published in ATS letters of agreement; and
 - (ii) In place for separate operating positions within an ATS unit and promulgated in the holder's Manual of Air Traffic Services; and
 - (2) Responsibility for control of an aircraft is not transferred from one ATS unit to another without:
 - (1) Communication of appropriate parts of the current flight plan; and
 - (2) Any relevant control information; and
 - (3) The consent of the accepting unit.

24.117 Co-ordination requirements

- (a) The ATS provider shall establish systems and procedures to ensure, where applicable, effective two-way co-ordination between each ATS unit listed in the organizational Master Plan and at least the following agencies:
 - (1) each ATS unit responsible for adjoining airspace, and
 - (2) any other ATS unit with which regular operational co-ordination may be required; and
 - (3) aeronautical telecommunication service organizations; and
 - (4) aviation meteorological services; and
 - (5) aeronautical information services; and
 - (6) air operators; and
 - (7) search and rescue authorities; and
 - (8) military authorities; and
 - (9) where the ATS unit is an aerodrome control or aerodrome flight information unit:
 - (i) The aerodrome operator; and
 - (ii) The apron management service, if that service is not provided by the aerodrome control unit; and
 - (iii) The aerodrome rescue and fire fighting service.

- (10) any other agency specified by the Authority.
- (b) Procedures shall facilitate both regular and ad-hoc communication and take account of any urgent need to pass information.
- (c) The procedures shall:
 - (1) Detail such matters as are necessary for effective co-ordination between the parties; and
 - (2) Be kept current; and
 - (3) Be supported by a letter of agreement signed by senior representatives of the parties involved; and
 - (4) Be part of the applicant's Manual of Air Traffic Services.

(Note: letters of agreement between the Air Traffic Service provider and the providers of Aeronautical Information Services and Aeronautical Meteorological Services shall, where applicable, conform to the guidance contained in ICAO Document 9377 "Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services")

- (d) The procedures shall ensure in particular that ATS units and aircraft operators, where they require the information, are provided, through the exchange of ATS messages, with details of:
 - (1) The intended movement of each aircraft for which a flight plan has been filed, and any amendments to that flight plan; and
 - (2) Current information on the progress of the flight.
- (f) ATS messages shall be prepared and transmitted in accordance with the procedures detailed in the Manual of Standards - Air Traffic Services.

24.119 Co-ordination of activities potentially hazardous to civil aircraft

- (a) The ATS provider shall establish procedures to ensure the safe coordination of activities potentially hazardous to aircraft.
- (b) In determining these arrangements the following should be applied:
 - (1) the locations or areas, times and durations for the activities should be selected to avoid closure or realignment of established ATS routes, blocking of the most economic flight levels, or delays of scheduled aircraft operations, unless no other options exist;
 - (2) the size of the airspace designated for the conduct of the activities should be kept as small as possible;
 - (3) direct communication between the appropriate ATS authority or air traffic services unit and the organization or unit conducting the activities should be provided for use in the event that civil aircraft emergencies or other unforeseen circumstances require discontinuation of the activities.
- (c) The appropriate ATS authorities shall be responsible for initiating the promulgation of information regarding the activities.

24.121 Airport Collaborative Decision Making (A-CDM)

- (a) the ATS provider shall, where applicable, establish and maintain procedures to collaborate with all aerodrome operators and related aerodrome partners with an aim to improve the overall safety and efficiency of operations at an airport by reducing delays, streamlining the predictability of events during the progress of a flight and optimising the utilisation of resources.

(Note: The procedures developed in accordance with the requirements of this section shall involve coordination between airport operators, aircraft operators, ground handlers and air traffic control in order to allow such agencies to working together more efficiently and transparently and sharing data in real time.)

- (b) The procedures established in accordance with sub-paragraph (a) above shall incorporate procedures that as a minimum, covers the following areas:
- (1) airport Collaborative Decision Making (CDM) information sharing
 - (2) milestone approach for the turn-around process
 - (3) variable taxi times
 - (4) pre-departure sequencing
 - (5) airport CDM in adverse conditions
 - (6) collaborative management of flight updates

(Note: Guidance on the development and implementation of A-CDM procedures is contained in EUROCONTROL Airport CDM Implementation Manual and related guidance material)

SUBPART M: SERVICE DISRUPTIONS AND CONTINGENCY PLANNING

24.123 Service disruptions

- (a) Each ATS provider shall establish procedures, to:
- (1) Advise the Authority immediately of any planned disruption to the provision of air traffic services that could affect safety; and
 - (2) Investigate any unplanned disruption to the provision of air traffic services; and
 - (3) report to the Authority, within 48 hours of the occurrence, the circumstances surrounding any unplanned disruption to air traffic services when the disruption affected, or could have affected, the safety of air traffic.
- (b) Disruptions reportable under paragraph sub-paragraph (a) shall include, but are not limited to, any:
- (1) Failure to open watch within 10 minutes of the promulgated opening time; and
 - (2) Any interruption to the normal provision of an air traffic service; and
 - (3) Curtailment or extension of watch, by greater than 30 minutes, from the promulgated hours of service.

24.125 Contingency plans

- (a) Within one year after initial certification, the ATS provider shall establish contingency plans approved by the Authority that shall be used in the event of emergencies including degradation, disruption or potential disruption of air traffic services and related supporting services in airspace for which they intend to be responsible for providing such services.
- (b) At minimum the plan shall cover:
- (1) Air Traffic Flow and Capacity Management (AFTCM)
 - (2) the actions to be taken by personnel responsible for providing the service during;
 - (i) Emergency situations and;
 - (ii) Degraded modes of operation
 - (3) hand-over and service continuity procedures during facility emergency evacuations
 - (4) provisions to protect against cyber related threats
 - (5) provisions for unplanned Single Person Operations
 - (6) security assessment of emergency/degraded modes
 - (7) determination of the need for service continuity including arrangements for cross-border provision of services if applicable;
 - (8) maximum agreed period of service disruption
 - (9) human Factors considerations and;
 - (10) the arrangements for resuming normal operations.
 - (11) any other requirement prescribed by the Authority
- (c) Contingency plans shall be developed with the assistance of ICAO or any other regional body or agency as necessary and in close co-ordination with the air traffic services authorities responsible for the adjacent portions of airspace and, as far as practicable, with airspace users concerned and with any civil or military agencies which may be affected or whose participation is necessary for effective implementation of the plan.
- (d) Contingency plans shall take into account the Authority's guidance material as may be available from time to time, the Manual of Standards – Air Traffic Services and the guidance contained in Attachment C of ICAO Annex 11. A plan shall also ensure that procedures are established for radio communication contingencies and where applicable, emergency separation. These procedures shall also be entered into the MANOPS.
- Note 1.— Contingency plans may constitute a temporary deviation from the approved regional air navigation plans; such deviations are approved, as necessary, by the President of the ICAO Council on behalf of the Council.*
- (e) The plans shall include provision for notifying appropriate personnel of its existence, amendments to it and the means of activating and terminating it.
- (f) Contingency plans shall be reviewed at frequent intervals and when any operational change is planned to ensure their currency and continued efficacy.
- (g) Contingency plans shall require that Human Factors principles be observed in all communications between ATS units and aircraft in the event of an emergency, degradation, disruption or potential disruption of air traffic services

SUBPART N: RECORDS REQUIREMENTS

24.127 Communication and Data Recordings

No person shall provide any air traffic service unless the equipment mentioned in this section are serviceable in accordance with the ATS provider's equipment maintenance program and manufacturer specifications.

24.129 Records

- (a) Each ATS provider shall establish systems and procedures to identify, collect, file, store securely, maintain, access and dispose of records necessary for:
 - (1) The operational provision of air traffic services; and
 - (2) The purpose of assisting with any accident or incident investigation.
- (b) No person shall provide or cause to be provided any air traffic service unless or until all voice and data recording equipment are in serviceable condition as prescribed by manufacturer specifications and the ATS provider's equipment maintenance control manual.
- (c) The ATS provider shall ensure that its procedures for providing information to the persons designated to complete a specific record are provided in a timely way so that the record is continuously up-dated and available for consideration for the planning and provision of air navigation services.
- (d) The person(s) designated to complete a specific record shall be given that designation in writing and provided training and written policy guidance for the completion of the document with respect to timing and accuracy.
- (e) Every person designated to complete and/or sign a record required under these regulations shall make the required entries accurately and in a timely manner so that the record used for planning and provision of air traffic service reflects the true situation at the time of use.
- (f) Every record required for the ATS provider's operations and equipment maintenance purposes shall be completed in ink or indelible pen, unless otherwise approved by the Authority.
- (g) Access to recorder equipment and tapes shall be restricted to only the authorized personnel listed in the ATS provider's MANOPs and or Unit Specific Manuals or as prescribed by the Authority.

(Note: (1) The air traffic service facility shall normally feature a room designed specifically for the review of digital audio and data recordings.

(2) Where a room described in (1) above is provided, a separate playback equipment room may be provided to permit personnel to listen to recordings for training purposes.

(3) No voice recordings that are the part of open investigations shall be included in any recordings mentioned in (2) above for training or any other purpose.)

- (h) Any ATS provider that withholds any records described under this subsection following any request from any Authorized person shall be guilty of an offence.

(Note: The withholding of any recordings, voice, data or otherwise shall be grounds for the immediate suspension of a certificate issued under these regulations)

24.131 Voice and Data Recordings

- (a) The ATS provider which operates any equipment required to have voice and data recorders installed shall –
- (1) conduct operational checks and evaluations of all recordings to ensure the continued serviceability of the recorders;
 - (2) retain the most recent data recorder calibration, including the recording medium from which this calibration is derived; and
- (b) The factory specifications of all air traffic service communication and data equipment shall include the capacity for the automatic digital recording of all communications and data involved in the provision of any air navigation service. The records shall include:
- (1) telephone communications; and
 - (2) radio broadcasts and communications; and
 - (3) air-ground digital data exchanges, where appropriate; and
 - (4) Information derived from any situation display that is used in the provision of any air traffic service based on surveillance; and
 - (5) filed flight plans including standard and repetitive plans; and
 - (6) flight progress strips; and
 - (7) staff duty time rosters; and
 - (8) appropriate meteorological and aeronautical information, except where the information is retained for an equivalent period by a meteorological or AIS organization.
 - (9) a record of each internal quality assurance review carried out under the procedures outlined in the ATS provider's Quality Management System.

(Note: The record shall detail the activities reviewed and any necessary follow-up corrective and preventive actions.)

- (c) The ATS provider shall establish systems and procedures to ensure the electronic recording, in sufficient clarity to enable events to be reconstructed, of:
- (1) All ATS radio and telephone communications; and
 - (2) All air-ground communications; and
 - (3) Where appropriate, all relevant data from primary and secondary radar equipment or obtained through Automatic Dependent Surveillance (ADS) or any other method of surveillance that may be used from time to time in providing or supporting an Air Traffic Service; and
 - (4) All inter and intra air traffic service unit communications.
 - (5) Any transfer and acceptance of control process not conducted by telephone; and

(Note: (1)The information required under (c)(iii) above should as a minimum, include position indications, map information required to provide ATS surveillance services, information concerning the identity of the aircraft and the aircraft level.

(2) The recorded information mentioned in (iii) above shall also include any aural or visual alarms associated with any alert capability built into the air traffic service automation system

(3) The equipment shall record all human inputs and all other interactions and automated actions involved in the provision of air traffic services)

- (d) In the event that the equipment was involved directly or indirectly in any accident, serious incident or occurrence requiring immediate notification of the Authority, the ATS provider shall remove and keep recorded information from the voice recorder and data recorder in safe custody pending their disposition as determined by the Authority.
- (e) The ATS provider shall establish systems and procedures to ensure that for all electronic records required by paragraph (c)—
 - (1) Time recordings shall be checked to ensure correct time to within plus or minus 30 seconds of UTC.
 - (2) Where data-link communications are utilized, clocks and other time-recording devices shall produce time stamps accurate to within 1 second of UTC.
 - (3) The recordings shall either—
 - (i) Replicate the voice communications, and, if applicable, the surveillance display applying at the particular operating position; or
 - (ii) Are accompanied by a statement fully describing the differences between the recording supplied and a recording in accordance with subparagraph (i).
- (f) For the purposes of sub-paragraph (c)(3) the picture includes any visual presentation of aircraft position, however derived.
- (g) The option provided by sub-paragraph (e)(3)(ii) shall apply only to equipment in service on the date this Schedule comes into force.
- (h) The ATS provider shall establish systems and procedures to ensure that all records, except where replication is required by sub-paragraph (e)(3)(i), are of sufficient clarity to convey the required information.
- (i) The ATS provider shall establish procedures to ensure that the records referred to in sub-paragraph (b) are retained for at least 30 days from the date of entry, except for:
 - (1) Staff duty rosters; and
 - (2) Written records associated with the requirements of paragraph 24.129 (a) (2) and which shall be retained for 2 years; or
 - (3) Any record required under ICAO Annex 13 to be kept for a longer period following an accident or incident.

24.133 Retention and Maintenance of Personnel Records

- (a) The ATS provider shall maintain current records which detail the qualifications and training of all its employees, including contract employees, involved in all air traffic service operations and equipment maintenance of the ATS provider.

- (b) The ATS provider shall maintain records for those employees performing air traffic service operational duties in sufficient detail to determine whether the employee meets the experience and qualification for duties in ATS operations as prescribed under these Regulations.
- (c) This record, its contents, layout and the procedures for its use shall be approved by the Authority prior to its use in the provision of air traffic services.
- (d) This record shall be identifiable to the ATS provider and the specific individual.
- (e) This record shall be retained by the ATS provider in safe custody for at least six months after the individual is no longer employed by the ATS provider.
- (f) The Authority will also consider approval of a computer-based method for keeping any portion of this information. Without this approval, any such computer records used by the ATS provider shall be secondary to the approved method in priority of updating and usage at the operational level.

24.135 Equipment Maintenance Personnel Qualification and Currency Records

The ATS provider shall have a record of the equipment maintenance person's qualification and currency with respect to all Schedule requirements for these persons.

24.137 Air Traffic Service Personnel Qualification and Currency Records

- (a) The ATS provider shall have a record of all personnel qualification and currency with respect to all Schedule requirements for these personnel.
- (b) All personnel shall be provided a current summary record showing the completion of his or her initial, recurrent, upgrade and re-qualification, as applicable, qualification requirements.

24.139 Form and Format of retention

Any records that are required under these regulations shall be retained in a form and format that is deemed acceptable to the Authority.

SUBPART O: Operational Standards

24.141 Provision of Air Traffic Services

- (a) The ATS provider shall not provide an air traffic service unless that service is provided in accordance with –
 - (1) The Operation Specifications and any other terms of a current Air Navigation Service Certificate and conditions of issuance, including equipment maintenance requirements in order to hold that certificate and approval.

(Note: The conditions of issuance include all written approvals granted to meet the certification requirements of this Schedule, including letters of designation, letters of approval, approval of a manual's list of effective pages.)

- (b) Unless otherwise provided for in this schedule or agreed by the Authority, air traffic services shall be provided and operated in accordance with:
 - (1) Civil Aviation Regulations; and
 - (2) The procedures to be applied by all operational personnel in providing the various air traffic services to aircraft as set out in The Manual of Standards – Air Traffic Services.
 - (3) All related Standards and Recommended Practices (SARPS) of ICAO including the SARPs contained in ICAO Annex 11 to the Convention; and
 - (4) Any other requirement as prescribed by the Authority
- (c) Detailed procedures to be employed by the ATS unit concerned, with any applicable limitations, shall be set out in the unit's Manual of Air Traffic Services.

24.143 Regional Supplementary Procedures

- (a) Where a regional supplementary procedure set out in ICAO Doc.7030 relates to an air traffic service that the provider provides, the provider must also ensure that the service is provided in accordance with that procedure.
- (b) The provider referred to in paragraph (b) may deviate from a procedure or rule mentioned in the Manual of Standards – Air Traffic Services, or a regional supplementary procedure, where an emergency, or other circumstance arises that makes the deviation necessary in the interest of aviation safety.
- (c) As soon as practicable, the provider must give an account of the deviation to the Authority and inform the Authority of the deviation and how long it is likely to last.

24.145 Human Factors

- (a) The ATS provider shall ensure that Human Factors (HF) aspects are taken into account in all aspects of service provision.
- (b) Areas to be considered include organizational issues, safety management concepts including the management of change and learning from incident data.

24.147 Automation

- (a) Automation in ATS shall be introduced at a level appropriate to the services being provided with the objective of improving the safe, orderly and efficient provision of ATS.
- (b) Automation shall be implemented in accordance with a detailed operational plan covering the time it will take to implement the automated system and the considerations during the transition towards increasing degrees of automation in the provision of ATS. The operational plan must contain a detailed specification of the procedures and working method.
- (c) The operational plan required under sub-paragraph (b) shall be developed collaboratively within an appropriately allocated multi-disciplinary group of experts in the fields of ATS, Human Factors, CNS

and Information and Communication Technology and any other discipline as required.

- (d) The operation plan required under sub-paragraph (b) shall be integrated into the organizational Master Plan required under 24.043.
- (e) The transition period during the implementation of higher degrees of automation within the ATS system shall be subject to the change management mechanisms included in the ATS provider's Safety Management System required under 25.059.

24.149 Separation standards

- (a) Except as permitted by sub-paragraph (b) of this section the standard departure, vertical, lateral, longitudinal and surveillance separation set out in the Manual of Standards - Air Traffic Services, subject to any modifications in Doc 7030, shall be used as appropriate by ATS units between aircraft which are required to be separated in accordance with the Manual of Standards – Air Traffic Services.
- (b) Where the Manual of Standards – Air Traffic Services permits a reduction in the standard separation in specified circumstances, the Authority may approve such reduced separation standards subject to any additional conditions it thinks fit.
- (c) The ATS provider that submits an application to the Authority for the reduction of separation standards in sub-paragraph (b) above shall:
 - (1) Carry out a safety assessment to determine whether an acceptable level of safety will be maintained; and
 - (2) Consult users about the proposed reduction, as may be required by the Authority; and
 - (3) provide the Authority with the results of the assessment and consultation and with any other information he may consider relevant.
- (d) The safety assessment in paragraph sub-paragraph (c) (1) shall take account of:
 - (1) the availability, reliability, accuracy and performance of ground-based or aircraft equipment which may permit such reduced separation; and
 - (2) The reliability and performance of communications systems upon which the applicable equipment in paragraph 24.079 or the flight crew or ATS personnel rely; and
 - (3) The effects of wake vortex; and
 - (4) Where applicable, Aerodrome layout; and
 - (5) The provisions of any applicable regional air navigation agreement including any conditions and limitations specified in it; and
 - (6) In the case of reduced separation which relies on visual methods, any actual or potential environmental factors which may limit the procedure.
- (e) The ATS provider shall ensure that adequate provision is made for post-implementation monitoring to verify that the defined level of safety continues to be met.
- (f) Any approved reduction in separation standards with any limitations on its use shall be incorporated into the ATS unit's Manual of Air Traffic Services.

24.151 Runway Safety Programme

- (a) The ATS provider shall develop a runway safety programme.
- (b) The runway safety programme shall include provisions regarding the use of radiotelephony, phraseology, language proficiency, ATS procedures, aerodrome lighting and marking, situational awareness and human factors.

24.153 Incidents and accidents

- (a) The ATS provider shall establish procedures to be adopted following an incident or accident.
- (b) The procedures shall cover:
 - (1) The action required to determine whether any air navigation facilities may have contributed to the event and any subsequent action; and
 - (2) The notification, investigation and reporting of incidents and accidents in accordance with ICAO Annex 13; and
 - (3) The preservation of records required under Annex 13 to be kept to assist any investigation; and
 - (4) The forwarding of facility malfunction reports to the applicable aeronautical telecommunication service provider.
- (c) The ATS provider shall establish procedures to report all known or suspected instances of radio frequency interference to the Authority and the Spectrum Management Authority. Procedures shall also be established to report to the Authority and the applicable Communication Navigation and Surveillance organization, all other incidents involving interference with any other Air Navigation facility.

24.155 Drug and Alcohol Testing

The ATS provider shall comply with all of the appropriate Drug and Alcohol testing requirements prescribed in the First Schedule

24.157 Deviation from standards

- (a) The ATS provider may only deviate from the requirements of this section or the operational standards prescribed in the Manual of Standards - Air Traffic Services or this schedule if an emergency or other circumstance arises that makes the deviation necessary in the interest of aviation safety.
- (b) The ATS provider shall notify the Authority in writing and submit the details of such occurrence within 48 hours of the deviation.

Appendix 1 to 24.047: Contents of the Maintenance Control Manual

The ATS provider's EMCM shall contain the following information which may be issued in separate parts –

- (1) a description of the required maintenance procedures, including –
 - (i) a description of the administrative arrangements between the ATS provider and the approved equipment maintenance organization; and
 - (ii) a description of the maintenance procedures and the procedures for completing and signing a maintenance release when maintenance is based on a system other than that of an approved equipment maintenance organization;
- (2) the names and duties of the person or persons required to ensure that all maintenance is carried out in accordance with the EMCM;
- (3) a reference to the required maintenance programme(s);
- (4) a description of the methods for completion and retention of the required ATS provider's maintenance records;
- (5) a description of establishing and maintaining a system of analysis and continued monitoring or the performance and efficiency of the maintenance programme, in order to correct any deficiency in that programme;
- (6) a description of the procedures for obtaining and assessing information and implementing any resulting actions for all communication, navigation and surveillance equipment, from their respective manufacturers, and shall implement such actions considered necessary by the State of Manufacture;
- (7) a description of procedures for assessing continuing equipment serviceability information and implementing any resulting actions;
- (8) a description of the procedures for implementing action resulting from mandatory continuing equipment serviceability information;
- (9) a description of the procedures for monitoring, assessing and reporting maintenance and operational experience for all communication, navigation and surveillance equipment;
- (10) a description of communication, navigation and surveillance equipment to which the manual applies;
- (11) a description of procedures for ensuring that unserviceabilities affecting the provision of any air traffic service is recorded and rectified;
- (12) a description of the procedures for advising the state of manufacture of significant in-service occurrences;
- (13) a description of the procedures to ensure each piece of equipment required for the safe, orderly and efficient provision of any air traffic service is continuously operable;
- (14) a description of the procedures to ensure that all equipment mentioned under the organization's contingency plan is continuously serviceable;
- (15) a description of the procedures for the introduction of new equipment to the inventory;
- (16) a description of the procedures for assessment of contractor capabilities;
- (17) a description of the procedures for control and approval of major repairs and alterations;
- (18) the ATS provider's manual must contain the required programmes that must be followed in performing maintenance, preventive maintenance, and alterations of the ATS provider's communication, navigation and surveillance equipment as applicable and must include at least the following –
 - (i) the method of performing routine and non-routine maintenance (other than required inspections, preventive maintenance, and alterations);
 - (ii) a designation of the items of maintenance and alterations that must be inspected (required inspections), including at least those that could result in a failure, malfunction, or defect endangering the safe provision of air traffic services, if not performed properly or if improper parts or materials are used;
 - (iii) procedures for performing duplicate inspections;

- (iv) procedures, standards and limits necessary for acceptance or rejections of the items required to be inspected and for periodic inspection and calibration of precision tools, measuring devices and test equipment;
- (v) instruction to prevent any person who performs any item of work from performing any required inspection of that work;
- (vi) instructions and procedures to prevent any decision of an inspector, regarding any required inspection from being countermanded by persons other than supervisory personnel of the inspection unit, or a person at that level of administrative control that has overall responsibility for the management of both the required inspection functions and the other maintenance, preventive maintenance and alteration functions;
- (vii) procedures to ensure that required inspection, other maintenance, preventive maintenance and alterations that are not completed as a result of shift changes or similar work interruptions are properly completed before the provision of any air traffic service;
- (viii) a description of the procedures for preparing the Certificate of Release to Service and the circumstances under which the release is to be signed; and
- (ix) a list of personnel authorized to sign the Certificate of Release to Service and the scope of their authorization.

(Note: The manual may be put together in any subject order and subjects combined so long as all applicable subjects are covered in this manual.)

Appendix 1 to 24.059: Safety Management System requirements

(ii) General Safety Requirements

The provider of any air traffic service shall, as an integral part of the management of its services, have in place a safety management system (SMS) which:

- i. Ensures a formalized, explicit and proactive approach to systematic safety management in meeting its safety responsibilities within the provision of its services; operates in respect of all its services and the supporting arrangements under its managerial control; and includes, as its foundation, a statement of safety policy defining the organization's fundamental approach to managing safety (safety management),
- ii. Ensures that everyone involved in the safety aspects of the provision of air traffic services has an individual safety responsibility for their own actions, that managers are responsible for the safety performance of their respective departments or divisions and that the top management of the provider carries an overall safety responsibility (safety responsibility),
- iii. Ensures that the achievement of satisfactory safety in air traffic services shall be afforded the highest priority (safety priority),
- iv. Ensures that while providing air traffic services, the principal safety objective is to minimize its contribution to the risk of an aircraft accident as far as reasonably practicable (safety objective).

(iii) Safety Achievement

Within the operation of the SMS, a provider of air traffic services shall:

- i. Ensure that personnel are adequately trained and competent for the job they are required to do, in addition to being properly licensed if so required and satisfying applicable medical fitness requirements (competency)

- ii. ensure that a safety management function is identified with organizational responsibility for development and maintenance of the safety management system; ensure that this point of responsibility is independent of line management, and accountable directly to the highest organizational level. However, in the case of small organizations where combination of responsibilities may prevent sufficient independence in this regard, the arrangements for safety assurance shall be supplemented by additional independent means; and ensure that the top management of the service provider organization is actively involved in ensuring safety management (safety management responsibility),
 - iii. ensure that, wherever practicable, quantitative safety levels are derived and are maintained for all functional systems (quantitative safety levels),
 - iv. Ensure that the SMS is systematically documented in a manner, which provides a clear linkage to the organization's safety policy (SMS documentation),
 - v. Ensure adequate justification of the safety of the externally provided services and supplies, having regard to their safety significance within the provision of its services (external services and supplies),
 - vi. Ensure that risk assessment and mitigation is conducted to an appropriate level to ensure that due consideration is given to all aspects of the provision of ATM (risk assessment and mitigation). As far as changes to the ATM functional system are concerned, the provisions of part (E) of this Appendix shall apply,
 - vii. Ensure that ATM operational or technical occurrences, which are considered to have significant safety implications, are investigated immediately, and any necessary corrective action is taken (safety occurrences). It shall also demonstrate that it has implemented the requirements on the reporting and assessment of safety occurrences in accordance with this schedule.
- (iv) Safety Assurance

Within the operation of the SMS, a provider of air traffic services shall ensure that:

- (i) safety surveys are carried out as a matter of routine, to recommend improvements where needed, to provide assurance to managers of the safety of activities within their areas and to confirm compliance with the relevant parts of the SMS (safety surveys),
 - (ii) methods are in place to detect changes in functional systems or operations which may suggest any element is approaching a point at which acceptable standards of safety can no longer be met, and that corrective action is taken (safety monitoring)
 - (iii) safety records are maintained throughout the SMS operation as a basis for providing safety assurance to all associated with, responsible for or dependent upon the services provided, and to the Authority (safety records).
- (v) Safety Promotion

Within the operation of the SMS, a provider of air traffic services shall ensure that:

- (i) all personnel are aware of the potential safety hazards connected with their duties (safety awareness)
 - (ii) the lessons arising from safety occurrence investigations and other safety activities are disseminated within the organization at management and operational levels (lesson dissemination)
 - (iii) all personnel are actively encouraged to propose solutions to identified hazards, and changes are made to improve safety where they appear needed (safety improvement).
- (vi) Hazard identification, risk assessment and mitigation

The hazard identification, risk assessment and mitigation processes shall include:

- (i) A determination of the scope, boundaries and interfaces of the constituent part being considered, as well as the identification of the functions that the constituent part is to perform

and the environment of operations in which it is intended to operate;

- (ii) A determination of the safety objectives to be placed on the constituent part, incorporating:
 - an identification of ATM-related credible hazards and failure conditions, together with their combined effects,
 - an assessment of the effects they may have on the safety of aircraft, as well as an assessment of the severity of those effects, using the severity classification scheme provided in Section 4,
 - a determination of their tolerability, in terms of the hazard's maximum probability of occurrence, derived from the severity and the maximum probability of the hazard's effects, in a manner consistent with ICAO Annexes 2, 10 and 11 to the convention;
- (iii) The derivation, as appropriate, of a risk mitigation strategy which:
 - specifies the defences to be implemented to protect against the risk-bearing hazards,
 - includes, as necessary, the development of safety requirements potentially bearing on the constituent part under consideration, or other parts of the ATM functional system, or environment of operations, and
 - presents an assurance of its feasibility and effectiveness;
- (iv) Verification that all identified safety objectives and safety requirements have been met:
 - prior to its implementation of the change,
 - during any transition phase into operational service,
 - during its operational life, and
 - during any transition phase until decommissioning.

The results, associated rationales and evidence of the risk assessment and mitigation processes, including hazard identification, shall be collated and documented in a manner which ensures that:

- complete arguments are established to demonstrate that the constituent part under consideration, as well as the overall ATM functional system are, and will remain tolerably safe by meeting allocated safety objectives and requirements. This shall include, as appropriate, specifications of any predictive, monitoring or survey techniques being used,
- all safety requirements related to the implementation of a change are traceable to the intended operations/-functions.

(vii) Hazard identification and severity assessment

- (i) A systematic identification of the hazards shall be conducted. The severity of the effects of hazards in a given environment of operations shall be determined using the classification scheme shown in the following table, while the severity classification shall rely on a specific argument demonstrating the most probable effect of hazards, under the worst-case scenario.
- (ii) In order to deduce the effect of a hazard on operations and to determine its severity, the systematic approach/-process shall include the effects of hazards on the various elements of the ATM functional system, such as the air crew, the air traffic controllers, the aircraft functional capabilities, the functional capabilities of the ground part of the ATM functional system, and the ability to provide safe air traffic services.

(viii) Risk Classification Scheme

- (i) Safety objectives based on risk shall be established in terms of the hazards maximum probability of occurrence, derived both from the severity of its effect, and from the

maximum probability of the hazard's effect.

- (ii) As a necessary complement to the demonstration that established quantitative objectives are met, additional safety management considerations shall be applied so that more safety is added to the ATM system whenever reasonable.

(ix) Safety Requirements for engineering and technical personnel undertaking operational safety related tasks

- (i) A provider of air traffic services shall ensure that technical and engineering personnel including personnel of subcontracted operating organizations who operate and maintain ATM equipment approved for its operational use have and maintain sufficient knowledge and understanding of the services they are supporting, of the actual and potential effects of their work on the safety of those services, and of the appropriate working limits to be applied.
- (ii) With regard to the personnel involved in safety related tasks including personnel of subcontracted operating organizations, the provider of air traffic services shall document the adequacy of the competence of the personnel; the rostering arrangements in place to ensure sufficient capacity and continuity of service; the personnel qualification schemes and policy, the personnel training policy, training plans and records as well as arrangements for the supervision of non-qualified personnel. It shall have procedures in place for cases where the physical or mental condition of the personnel is in doubt.
- (iii) A provider of air traffic services shall maintain a register of information on the numbers, status and deployment of the personnel involved in safety related tasks. The register shall:
 - identify the accountable managers for safety related functions;
 - record the relevant qualifications of technical and operational personnel, against required skills and competence requirements;
 - specify the locations and duties to which technical and operational personnel are assigned, including any rostering methodology

Appendix 1 to 24.065: ATS provider's Additional Quality System for Equipment Maintenance

- (a) Each ATS provider shall establish a plan acceptable to the Authority to show when and how often the activities are required will be monitored. In addition, reports should be produced at the completion of each monitoring investigation and include details of discrepancies of non-compliance with procedures or requirements.
- (b) The feedback part of the system shall address who is required to rectify discrepancies and non-compliance in each particular case and the procedure to be followed if rectification is not completed within appropriate time scales. The procedure should lead to the Accountable Manager.
- (c) To ensure effective compliance the ATS provider and certificate applicant should use the following elements –
 - (1) product sampling - the inspection of a representative sample of the equipment inventory;
 - (2) defect sampling - the monitoring of defect rectification performance;
 - (3) concession sampling - the monitoring of any concession to not carry out maintenance on time;
 - (4) on time maintenance sampling - the monitoring of when (calendar time, etc) equipment and their components are brought in for maintenance;
 - (5) sample reports of unserviceable conditions and maintenance errors on equipment and related components.

(Note: The primary purpose of the Quality System for maintenance is to monitor compliance with the approved procedures specified in The ATS provider's equipment maintenance control manual to ensure compliance and thereby ensure the maintenance aspects of the operations of the equipment. In particular, this

part of the Quality System provides a monitor of the effectiveness of maintenance, and should include a feedback system to ensure that corrective actions are identified and carried out in a timely manner.)

Appendix 1 to 24.067: Contents of the Equipment Technical Log

- (a) The holder of ATS Operations Specifications shall use an equipment technical log which includes an equipment maintenance record section containing the following information for each piece of equipment –
- (1) The ATS provider’s company name;
 - (2) a unique page numbering system;
 - (3) left margin date entry column; preceding items (4) and (5) in a row format;
 - (4) ATS unit entry column on the same row;
 - (5) method for entering defects found during operations in a column and row format, including –
 - (i) a method for numbering each defect;
 - (ii) identifying the ATS unit where it was entered;
 - (iii) a description of the defect noted;
 - (iv) a description of the correction or deferment of the defect;
 - (v) the licence number of the person making the correction; and
 - (vi) the signature or 3 letter initials of the person making the correction;
 - (6) a method for collecting the critical operational information that is required to properly evaluate any defect and propose appropriate corrective action.
 - (7) a method for collecting any special inspection or maintenance status information that is applicable to the ATS holder’s operations
 - (8) a separate provision for the current release to service, including –
 - (i) the proper terminology for the release; and
 - (ii) the name;
 - (9) a separate provision for operational ATS personnel certification that the document illustrates that the equipment is serviceable, has the required operational components and proper release to service; and
 - (10) a provision for tracking the deferred defects, which may be included as a separate page or pages in the front or back of the technical log.

Appendix 1 to 24.069: Contents of the Deferred Defects Log

This log shall include –

- (1) the company name;
- (2) the unique beginning and ending page numbers of the Equipment Technical Log it is attached to;
- (3) for each defect –
 - (i) an assigned tracking number;
 - (ii) the page number of the Equipment Technical Log containing the original entry;
 - (iii) a description of the defect;
 - (iv) a description of the basis for deferment;
 - (v) the target date of correction;
 - (vi) the date of correction; and
 - (vii) the page number of the Equipment Technical Log containing the entry for the correction.

Appendix 1 to 24.073: Duties and Responsibilities of Key Personnel

- (a) The holder of ATS Operations Specifications shall make arrangements to ensure continuity of supervision if operations are conducted in the absence of any required management personnel.
- (b) Required management personnel shall be contracted to work sufficient hours such that the management functions are fulfilled.
- (c) A person serving in a required management position for the ATS provider may not serve in a similar position for any other holder of ATS Operations Specifications, unless a deviation is issued by the Authority
- (d) Qualifications and Responsibilities of Key Personnel.

(1) Director of Operations

- (i) Qualifications: The Director of Operations shall –
 - (a) Hold a Graduate degree in Air Transportation, Aviation Engineering, Aviation Safety Management, Air Traffic Management or Business Administration; or
 - (b) hold or have held the appropriate licence and ratings for which an ATS unit chief is required to hold and have acquired not less than ten (10) years related managerial experience within an organization providing services of a similar in size and scope; and
 - (c) Have demonstrable competence in of Air Traffic Service operations thorough a proven track record of at least five years’ experience of high-level management at large aviation organizations; and
 - (d) demonstrate knowledge to the Authority with respect to the content of the Operations Manual, the organization’s ATS Operations Specifications, the provision of Civil Aviation Legislation and standards necessary to carry out the duties and responsibilities to ensure safety and security.
- (ii) The duties and responsibilities of the Director of Operations shall include but are not limited to :
 - (a) control of operations and operational standards of all services provided;
 - (b) The production and amendment of the Organizational Master Plan
 - (c) the identification of operations coordination functions which impact on operational control (eg. maintenance, crew scheduling, load control, equipment scheduling),
 - (d) Maintain oversight of the following –
 - (aa) Air Traffic Service operations;
 - (ab) Air Traffic Service operations Safety and Security;
 - (ac) scheduling and rostering; and
 - (ad) training programmes;
 - (e) the contents of the Manual of Operations and associated manuals;
 - (f) the supervision of and the production and amendment of the Company Operations Manual;
 - (g) liaison with the regulatory authority on all matters concerning Air Traffic Service operations, including any amendments to the ATS approval;
 - (h) liaison with any external agencies which may affect ATS operations;
 - (i) ensuring that operations are conducted in accordance with current regulations, directives or other requirements, and organizational policy;
 - (j) ensuring that ATS personnel scheduling complies with operational and duty time regulations and that all operations personnel are kept informed of any changes to the regulations;

- (k) the receipt and implementation of action in response to any aeronautical information affecting the safety of ATS operations;
- (l) the dissemination of ATS safety information, both internal and external;
- (m) qualifications of ATS personnel; and
- (n) maintenance of a current operations library.

(Note: In his or her absence all responsibilities for operational duties shall be delegated to another individual qualified in accordance with the Regulations except that the knowledge requirements detailed under Operations Manager qualifications may be demonstrated to the operator rather than the Authority.)

(1) **Director of Safety**

The safety manager is responsible for providing guidance and direction for the planning, implementation and operation of the organization's safety management system (SMS).

- (i) Qualifications: **Director of Safety** shall –
 - (a) Hold a Graduate Degree in Air Transportation, Aviation Engineering, Aviation Safety Management, Air Traffic Management or Business Administration; or
 - (b) Hold a Bachelor's degree in the above mentioned disciplines and attended an approved course in Safety Management Systems; and
 - (c) Have acquired no less than five (5) years' experience in the implementation and on-going management of a Safety Management System with a certified organization.
 - (d) broad operational knowledge and experience in the functions of the organization (e.g. training management, aircraft operations, air traffic management, aerodrome operations, and maintenance organization management);
 - (e) demonstrate knowledge to the Authority with respect to safety management principles and practices and the provision Civil Aviation Legislation and standards necessary to carry out the duties and responsibilities to ensure safety and security.
- (ii) The duties and responsibilities of the **Director of Safety** shall include but are not limited to :
 - (a) providing guidance and direction for the planning, implementation and operation of the organization's safety management system (SMS) in accordance with Civil Aviation Regulations and ICAO Annex 19 to the Convention, ICAO Document 9859 , "*Safety Management Manual*" and related documentation.
 - (b) monitor and advise on all air traffic service safety activities which may have an impact on operational safety;
 - (c) monitor safety performance against the organization's safety policy and objectives
 - (d) monitor the effectiveness of the safety supervision of subcontracted operations;
 - (e) monitor industry safety concerns which may have an impact on air traffic service operations;
 - (f) ensure that appropriate resources are allocated to achieve safety performance beyond that required by regulatory compliance;
 - (g) give strategic direction to the Safety Action Group and other groups and committees developed within the ATS provider's SMS.
 - (h) establishing a reporting system that provides for a timely and free flow of safety related information;
 - (i) solicit and processing safety improvement suggestions;
 - (j) develop and maintaining a safety awareness programme;

- (k) maintain close liaison with the Authority;
- (l) maintain close liaison with industry safety associations;
- (m) conduct quantitative and qualitative risk analyses
- (n) identify hazards and establish, execute and maintain effective risk management and corrective action plans;
- (o) investigate and report on air traffic service incidents and making recommendations to preclude a recurrence;
- (p) develop and maintain a safety library to monitor and analyze trends;
- (q) make recommendations to the senior management on matters pertaining to safety; and
- (r) monitor the response and measuring the results of risk management programs and general safety initiatives.

(1) Chief Equipment Maintenance engineer

(i) Qualifications: **Chief Equipment Maintenance Engineer** shall –

- (a) Managerial experience in the CNS technical/operational field within the a civil aviation authority and/or air navigation service provider with a well-developed CNS infrastructure.
- (b) Have acquired no less than ten (10) years' experience in complex CNS and ATM systems and no less than five (5) years of background experience at supervisory or managerial level in CNS and ATM systems.
- (c) demonstrate knowledge to the Authority with respect to legacy and next generation CNS systems and the provisions of Civil Aviation Legislation and ICAO CNS/ATM standards and recommended practices relating to CNS systems in order to carry out the duties and responsibilities while ensuring safety and security.

(ii) The duties and responsibilities of the **Chief Equipment Maintenance Engineer** shall include but are not limited to :

- (a) Approve the contents of the Equipment Maintenance Control Manual and associated manuals
- (b) Development of total installation work programme to meet the ATS provider's requirements and assignments of approved programme for accomplishments.
- (c) Monitor and control the scheduling of the requirements for acquisition, construction, and dismantling or relocation of equipment and related structure in accordance with validated requirements, and manage the in-transit material for construction and installation.
- (d) Analyze financial and physical progress against established goals and provide reports.
- (e) Prepare procurement specifications for use in the production and procurement of equipment for Jamaica's airspace system.
- (f) Ensure compliance with radio frequency management requirements and obtain frequency authorizations to meet the requirements of the airspace/air traffic control systems.
- (g) Ensure compliance with and maintenance of airways facilities configuration management systems.
- (h) Prepare detailed engineering specifications for the production and procurement of equipment approved for inclusion in the airspace system.
- (i) Develop and recommend the total installation work programme to meet the requirements and assigns approved programmes for accomplishment.

- (j) Maintain capability to: estimate life cycle costs; predict, review, assess, and monitor systems development, engineering, design, demonstration, test, production, operation, and support; assess schedules and performance experience against predictions and provide such assessments for consideration by top management officials at key decision points; make new determination where significant schedule or performance variance occur.
- (k) Review reprogramming proposals submitted by other offices to determine impact on programme. Initiate, recommend, and submit reprogramming actions for revisions in the basic programme when funds available for approved projects are not sufficient to complete the assigned or required additional facilities or projects not in the basic programme; provide authorities with impact statements and recommendations.
- (l) Review system plans in such programmes from a technical and planning viewpoint to help resolve problems arising from conditions peculiar to the country or locality involved; as assigned, provide for equipment acquisition and shipment and determine feasibility of diversion of needed equipment, with later replacements from planned programmes.
- (m) Conduct engineering analysis of commissioned field air navigation system/facility operations to identify significant problems or trends, prepare technical reports of nature and scope of these problems or trends, the anticipated impact, and provide engineering analysis and recommendations for corrective action.
- (n) Provide technical maintenance instructions and standards for the airway facilities by equipment and system type; develop standards for content and format of technical handbooks, manuals, and related documents necessary for effective and efficient maintenance of the airways facilities.
- (o) Provide the engineering effort for, and authorize the modification of subsystems and component equipment to ensure compliance with prescribed standards and to effect needed improvement in maintainability and personal safety.

Appendix 1 to 24.079 : ATS Unit Communication Requirements

(a) Aeronautical mobile service (air-ground communications)

General

- (i) Radiotelephony and/or data link shall be used in air-ground communications for air traffic services purposes.

Note.— Requirements for ATS units to be provided with and to maintain guard on the emergency channel 121.5 MHz are specified in Annex 10, Volumes II and V.

- (ii) Where RCP types have been prescribed by the Authority for ATM functions, ATS units shall, in addition to the requirements specified above, be provided with communication equipment which will enable them to provide ATS in accordance with the prescribed RCP type(s).

Note.— Information on RCP and associated procedures, and guidance concerning the approval process, will be contained in the Manual on Required Communication Performance (RCP) (Doc 9869) (in preparation). This document also contains references to other documents produced by States and international bodies concerning communication systems and RCP.

- (iii) When direct pilot-controller two-way radiotelephony or data link communications are used for the provision of air traffic control service, recording facilities shall be provided on all such air-ground communication channels.

Note.— Requirements for retention of all automatic recordings of communications in ATC are specified in Annex 10, Volume II, 3.5.1.5.

- (iv) Recordings of communications channels as required above shall be retained for a period of at least thirty days.

(b) Service communication Requirements

Flight Information Service

- (i) Air-ground communication facilities shall enable two-way communications to take place between a unit providing flight information service and appropriately equipped aircraft flying anywhere within the flight information region.
- (ii) Whenever practicable, air-ground communication facilities for flight information service shall permit direct, rapid, continuous and static-free two-way communications.

Area Control Service

- (i) Air-ground communication facilities shall enable two-way communications to take place between a unit providing area control service and appropriately equipped aircraft flying anywhere within the control area(s).
- (ii) Whenever practicable, air-ground communication facilities for area control service should permit direct, rapid, continuous and static-free two-way communications.
- (iii) Where air-ground voice communication channels are used for area control service and are worked by air-ground communicators, suitable arrangements shall be made to permit direct pilot-controller voice communications, as and when required.

Approach Control Service

- (i) Air-ground communication facilities shall enable direct, rapid, continuous and static-free two-way communications to take place between the unit providing approach control service and appropriately equipped aircraft under its control.
- (ii) Where the unit providing approach control service functions as a separate unit, air-ground communications shall be conducted over communication channels provided for its exclusive use.

Aerodrome Control Service

- (i) Air-ground communication facilities shall enable direct, rapid, continuous and static-free two-way communications to take place between an aerodrome control tower and appropriately equipped aircraft operating at any distance within 45 km (25 NM) of the aerodrome concerned.
- (ii) Where conditions warrant, separate communication channels shall be provided for the control of traffic operating on the manoeuvring area.

(c) Aeronautical fixed service (ground-ground communications)

- (i) Direct-speech and/or data link communications shall be used in ground-ground communications for air traffic services purposes.

Note 1.— Indication by time of the speed with which the communication should be established is provided as a guide to communication services, particularly to determine the types of communication channels required, e.g. that “instantaneous” is intended to refer to communications which effectively provide for immediate access between controllers; “fifteen seconds” to accept switchboard operation and “five minutes” to mean methods involving retransmission.

Note 2.— Requirements for retention of all automatic recordings of communications in ATC are specified in Annex 10, Volume II, 3.5.1.5.

- (ii) Where RCP types have been prescribed by States for ATM functions, ATS units shall, in addition to the requirements specified in 6.2.1.1, be provided with communication equipment which will enable them to provide ATS in accordance with the prescribed RCP type(s).

Note.— Information on RCP and associated procedures, and guidance concerning the approval process, will be contained in the Manual on Required Communication Performance (RCP) (Doc 9869) (in preparation). This document also contains references to other documents produced by States and international bodies concerning communication systems and RCP.

Communications within a flight information region

(d) Communications between air traffic services units

- (i) A flight information centre shall have facilities for communications with the following units providing a service within its area of responsibility:
 - (a) the area control centre, unless collocated;
 - (b) approach control units;
 - (c) aerodrome control towers.
- (ii) An area control centre, in addition to being connected to the flight information centre as prescribed in 6.2.2.1.1, shall have facilities for communications with the following units providing a service within its area of responsibility:
 - (a) approach control units;
 - (b) aerodrome control towers;
 - (c) air traffic services reporting offices, when separately established.
- (iii) An approach control unit, in addition to being connected to the flight information centre and the area control centre as prescribed in (d) (i) and (d) (ii) above, shall have facilities for communications with the associated aerodrome control tower(s) and, when separately established, the associated air traffic services reporting office(s).

(e) Communications between air traffic services units and other units

- (i) A flight information centre and an area control centre shall have facilities for communications with the following units providing a service within their respective area of responsibility:
 - (a) appropriate military units;
 - (b) the meteorological office serving the centre;
 - (c) the aeronautical telecommunications station serving the centre;
 - (d) appropriate operator's offices;
 - (e) the rescue coordination centre or, in the absence of such centre, any other appropriate emergency service;
 - (f) the international NOTAM office serving the centre.
- (ii) An approach control unit and an aerodrome control tower shall have facilities for communications with the following units providing a service within their respective area of responsibility:
 - (a) appropriate military units;
 - (b) rescue and emergency services (including ambulance, fire, etc.);
 - (c) the meteorological office serving the unit concerned;
 - (d) the aeronautical telecommunications station serving the unit concerned;
 - (e) the unit providing apron management service, when separately established.
- (iii) The communication facilities required (e)(i) and (e) (ii) shall include provisions for rapid and reliable communications between the air traffic services unit concerned and the military unit(s) responsible for control of interception operations within the area of responsibility of the air traffic services unit.

(f) Description of communication facilities

- (i) The communication facilities required under (e) above, (e)(i)(a), (e)(ii)(a) and (e)(ii)(a), (b) and (c) shall include provisions for:
 - (a) communications by direct speech alone, or in combination with data link communications, whereby for the purpose of transfer of control using radar or ADS-B, the communications can be established instantaneously and for other purposes the communications can normally be established within fifteen seconds; and
 - (b) printed communications, when a written record is required; the message transit time for such communications being no longer than five minutes.
- (ii) In all cases not covered by (f) above, the communication facilities should include provisions for:
 - (a) communications by direct speech alone, or in combination with data link communications, whereby the communications can normally be established within fifteen seconds; and
 - (b) printed communications, when a written record is required; the message transit time for such communications being no longer than five minutes.
- (iii) In all cases where automatic transfer of data to and/or from air traffic services computers is required, suitable facilities for automatic recording shall be provided.
- (iv) The communication facilities required in accordance with (d) and (e) above shall be supplemented, as and where necessary, by facilities for other forms of visual or audio communications, for example, closed circuit television or separate information processing systems.
- (v) The communication facilities required under (e) (ii) (a), (b) and (c) shall include provisions for communications by direct speech arranged for conference communications.
- (vi) The communication facilities required under (e)(ii)(d) shall include provisions for communications by direct speech arranged for conference communications, whereby the communications can normally be established within fifteen seconds.
- (vii) All facilities for direct-speech or data link communications between air traffic services units and between air traffic services units and other units described under (d) and (e) shall be provided with automatic recording.
- (viii) Recordings of data and communications as required in (f)(iii) and (f)(vii) shall be retained for a period of at least thirty days.

(g) Communications between flight information regions

- (i) Flight information centres and area control centres shall have facilities for communications with all adjacent flight information centres and area control centres.
- (ii) These communication facilities shall in all cases include provisions for messages in a form suitable for retention as a permanent record, and delivery in accordance with transit times specified by regional air navigation agreements.
- (iii) Unless otherwise prescribed on the basis of regional air navigation agreements, facilities for communications between area control centres serving contiguous control areas shall, in addition, include provisions for direct-speech and, where applicable, data link communications, with automatic recording, whereby for the purpose of transfer of control using radar, ADS-B or ADS-C data, the communications can be established instantaneously and for other purposes the communications can normally be established within fifteen seconds.
- (iv) When so required by agreement between the States concerned in order to eliminate or reduce the need for interceptions in the event of deviations from assigned track, facilities for communications between adjacent flight information centres or area control centres other than

those mentioned in (g)(iii) above shall include provisions for direct speech alone, or in combination with data link communications. The communication facilities shall be provided with automatic recording

(v) The communication facilities in (g) (iv) above shall permit communications to be established normally within fifteen seconds.

(vi) Adjacent ATS units shall be connected in all cases where special circumstances exist.

Note.— Special circumstances may be due to traffic density, types of aircraft operations and/or the manner in which the airspace is organized and may exist even if the control areas and/or control zones are not contiguous or have not (yet) been established.

(vii) Wherever local conditions are such that it is necessary to clear aircraft into an adjacent control area prior to departure, an approach control unit and/ or aerodrome control tower shall be connected with the area control centre serving the adjacent area.

(viii) The communication facilities in (g)(vi) and (g)(vii) should include provisions for communications by direct speech alone, or in combination with data link communications, with automatic recording, whereby for the purpose of transfer of control using radar, ADS-B or ADS-C data, the communications can be established instantaneously and for other purposes the communications can normally be established within fifteen seconds.

(ix) In all cases where automatic exchange of data between air traffic services computers is required, suitable facilities for automatic recording shall be provided.

(x) Recordings of data and communications as required in (g)(ix) shall be retained for a period of at least thirty days.

(h) Communications for the control of vehicles other than aircraft on manoeuvring areas at controlled aerodromes

(i) Two-way radiotelephony communication facilities shall be provided for aerodrome control service for the control of vehicles on the manoeuvring area, except where communication by a system of visual signals is deemed to be adequate.

(ii) Where conditions warrant, separate communication channels shall be provided for the control of vehicles on the manoeuvring area. Automatic recording facilities shall be provided on all such channels.

(iii) Recordings of communications as required in (h)(i) above shall be retained for a period of at least thirty days.

(Note.— See also Annex 10, Volume II, 3.5.1.5.)

Appendix 1 to 24.083: ATS requirement for Information

(a) Meteorological Information

General

(i) Air traffic services units shall be supplied with up-to-date information on existing and forecast meteorological conditions as necessary for the performance of their respective functions. The information shall be supplied in such a form as to require a minimum of interpretation on the part of air traffic services personnel and with a frequency which satisfies the requirements of the air traffic services units concerned.

- (ii) Air traffic services unit shall be supplied with available detailed information on the location, vertical extent, direction and rate of movement of meteorological phenomena in the vicinity of the aerodrome, and particularly in the climb-out and approach areas, which could be hazardous to aircraft operations.

Note.— The meteorological phenomena are listed in Annex 3, Chapter 4, 4.6.8.

- (iii) When computer-processed upper air data are made available to air traffic services units in digital form for use by air traffic services computers, the contents, format and transmission arrangements shall be as agreed between the Meteorological Authority and the appropriate ATS Authority.

Flight information centres and area control centres

- (i) Flight information centres and area control centres shall be supplied with meteorological information as described in Annex 3, Appendix 9, 1.3, particular emphasis being given to the occurrence or expected occurrence of weather deterioration as soon as this can be determined. These reports and forecasts shall cover the flight information region or control area and such other areas as may be determined on the basis of regional air navigation agreements.

Note.— For the purpose of this provision, certain changes in meteorological conditions are construed as deterioration in a weather element, although they are not ordinarily considered as such. An increase in temperature may, for example, adversely affect the operation of certain types of aircraft.

- (ii) Flight information centres and area control centres shall be provided, at suitable intervals, with current pressure data for setting altimeters, for locations specified by the flight information centre or area control centre concerned.

Units providing approach control service

- (i) Units providing approach control service shall be supplied with meteorological information as described in Annex 3, Appendix 9, 1.2 for the airspace and the aerodromes with which they are concerned. Special reports and amendments to forecasts shall be communicated to the units providing approach control service as soon as they are necessary in accordance with established criteria, without waiting for the next routine report or forecast. Where multiple anemometers are used, the indicators to which they are related shall be clearly marked to identify the runway and section of the runway monitored by each anemometer.

Note.— See Note following (b) (i)

- (ii) Units providing approach control service shall be provided with current pressure data for setting altimeters, for locations specified by the unit providing approach control service.
- (iii) Units providing approach control service for final approach, landing and take-off shall be equipped with surface wind display(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding display(s) in the aerodrome control tower and in the meteorological station, where such a station exists.
- (iv) Units providing approach control service for final approach, landing and take-off at aerodromes where the height of cloud base is assessed by instrumental means shall be equipped with display(s) permitting read-out of the current value(s) of the height of cloud base. The displays shall be related to the same location(s) of observations and be fed from the same sensor(s) as the corresponding display(s) in the aerodrome control tower and in the meteorological station, where such a station exists.

- (v) Units providing approach control service for final approach, landing and take-off shall be supplied with information on wind shear which could adversely affect aircraft on the approach or take-off paths or during circling approach.

Note.— Provisions concerning the issuance of wind shear warnings and alerts and ATS requirements for meteorological information are given in Annex 3, Chapter 7 and Appendices 6 and 9.

Aerodrome control towers

- (i) Aerodrome control towers shall be supplied with meteorological information as described in Annex 3, Appendix 9, 1.1 for the aerodrome with which they are concerned. Special reports and amend-ments to forecasts shall be communicated to the aerodrome control towers as soon as they are necessary in accordance with established criteria, without waiting for the next routine report or forecast.

Note.— See Note following (b)(i)

- (ii) Aerodrome control towers shall be provided with current pressure data for setting altimeters for the aerodrome concerned.
- (iii) Aerodrome control towers shall be equipped with surface wind display(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding display(s) in the meteorological station, where such a station exists. Where multiple sensor(s) are used, the displays to which they are related shall be clearly marked to identify the runway and section of the runway monitored by each sensor.
- (iv) Aerodrome control towers at aerodromes where runway visual range values are measured by instrumental means shall be equipped with display(s) permitting read-out of the current runway visual range value(s). The display(s) shall be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding display(s) in the meteorological station, where such a station exists.
- (v) Aerodrome control towers at aerodromes where the height of cloud base is assessed by instrumental means shall be equipped with display(s) permitting read-out of the current value(s) of the height of cloud base. The displays should be related to the same location(s) of observations and be fed from the same sensor(s) as the corresponding display(s) in the meteorological station, where such a station exists.
- (vi) Aerodrome control towers shall be supplied with information on wind shear which could adversely affect aircraft on the approach or take-off paths or during circling approach and aircraft on the runway during the landing roll or take-off run.
- (vii) Aerodrome control towers and/or other appropriate units should be supplied with aerodrome warnings.

Note.— The meteorological conditions for which aerodrome warnings are issued are listed in Annex 3, Appendix 6, 5.1.3.

- (xiii) Where necessary for flight information purposes, current meteorological reports and forecasts shall be supplied to communication stations. A copy of such information shall be forwarded to the flight information centre or the area control centre.

(b) Information on aerodrome conditions and the operational status of associated facilities

- (i) Aerodrome control towers and units providing approach control service shall be kept currently informed of the operationally significant conditions of the movement area, including the existence of

temporary hazards, and the operational status of any associated facilities at the aerodrome(s) with which they are concerned.

(c) Information on the operational status of navigation services

- (i) ATS units shall be kept currently informed of the operational status of radio navigation services and visual aids essential for take-off, departure, approach and landing procedures within their area of responsibility and those radio navigation services and visual aids essential for surface movement.
- (ii) Information on the operational status, and any changes thereto, of radio navigation services and visual aids as referred to in (f) (i) above shall be received by the appropriate ATS unit(s) on a timely basis consistent with the use of the service(s) and aid(s) involved.

Note.— Guidance material regarding the provision of information to ATS units in respect to visual and non-visual navigation aids is contained in the Air Traffic Services Planning Manual (Doc 9426). Specifications for monitoring visual aids are contained in Annex 14, Volume I, and related guidance material is in the Aerodrome Design Manual (Doc 9157), Part 5. Specifications for monitoring non-visual aids are contained in Annex 10, Volume I.

(d) Information on unmanned free balloons

- (i) Operators of unmanned free balloons shall keep the appropriate air traffic services units informed of details of flights of unmanned free balloons in accordance with the provisions contained in Annex 2.
- (ii) ATS units shall be informed, in accordance with local agreement, of pre-eruption volcanic activity, volcanic eruptions and volcanic ash cloud which could affect airspace used by flights within their area of responsibility.
- (iii) Area control centres and flight information centres shall be provided with volcanic ash advisory information issued by the associated VAAC.

Note.— VAACs are designated by regional air navigation agreements in accordance with Annex 3, 3.5.1.

(e) Information concerning radioactive materials and toxic chemical “clouds”

ATS units shall be informed, in accordance with local agreement, of the release into the atmosphere of radioactive materials or toxic chemicals which could affect airspace used by flights within their area of responsibility.

Appendix 1 to 24.097: Prescriptive Operational and Duty Hour Requirements

(1) Duty Periods

- (a) No period of duty shall exceed 10 hours. Within 720 consecutive hours (30 days) the aggregate of periods of duty and standby duties shall not exceed 300 hours provided that periods of duty do not exceed 200 hours.
- (b) No operational duty shall exceed a period of two hours without changing operational positions except for the supervisor position. The period on operational position shall be adjusted to avoid the performance degradation concerning the traffic volume and complexity. Any modification of a period on operational position beyond four hours is prohibited. The air traffic controller / supervisor is considered to be providing

an air traffic control service when he is supervising a trainee air traffic controller who is working at an operational position

- (d) The Director of Operations shall furnish a report to the Authority whenever an ATCO's duty time is extended pursuant to paragraphs to this Subsection;
- (e) Reports required pursuant to paragraph (g) of this Subsection shall be retained on file by the company for a period of at least six months.

(2) Night duties

- (a) Not more than two night duties may be worked in immediate succession.
- (b) Upon the conclusion of two night duties in immediate succession, there shall be an interval of a minimum of 54 hours before the commencement of the next period of duty.

(3) Reduction of Intervals for handover

Where an interval of a minimum of 60 hours or 54 hours between periods of duty is stipulated, that interval shall only be reduced by up to 30 minutes for the purpose of orderly shift handover.

(4) Relief from Duty

- (a) Subject to paragraph (b) of this Subsection, the ATS provider shall provide an air traffic controller with a rest period following any duty assignment made pursuant to paragraph (2).
- (b) There shall be an interval of not less than 12 hours between the conclusion of one period of duty and the commencement of the next period of duty. Within 720 consecutive hours (30 days) there shall be not fewer than three intervals of a minimum of 60 hours each between the conclusion of one period of duty and the commencement of the next period of duty.
- (c) Upon the conclusion of six consecutive periods of duty within 144 consecutive hours (6 days), or upon consecutive periods of duty within 144 consecutive hours (6 days) reaching a total of 50 hours, whichever is the earlier, there shall be an interval of a minimum of 60 hours before the commencement of the next period of duty.
- (d) Where the ATS provider assigns an air traffic controller to duty for a period of five hours or less, the ATS provider may again assign that air traffic controller to duty after a minimum period as specified in the manual of operations provided that the subsequent assignment does not exceed 10 hours and the air traffic controller is provided with a rest period as specified in this appendix following the second assignment.
- (e) Time spent in local transportation in excess of 30 minutes shall not be considered a part of an air traffic controller's rest period;

Appendix 1 to 24.123: Operational and Duty Time records

Unless otherwise prescribed by the Authority, the ATS provider holder shall require the use of duty time records containing the following information –

- (6) the ATS provider's company name;
- (7) air traffic service personnel full name and employee identification number, if applicable;

- (3) a running summary of number of hours worked in the past –
 - (i) 12 months;
 - (ii) 28 days;
 - (iii) 7 days; and
 - (iv) 24 hours;
- (4) if the operational time is scheduled more than 24 hours in advance, a daily record by date, of the assigned duty times, operational times and projected rest periods or, as an alternative to these records, satisfactorily demonstrate to the Authority a system that would prevent exceedences of flight and duty time and rest period requirements;
- (5) a daily record by date, with an hourly display of the actual time spent showing the beginning and the end of each period of –
 - (i) Duty time;
 - (ii) Operational time; and
 - (iii) required rest; and
- (6) a provision for the certification of each 28 days of records by the Operational personnel governed by these duty time restrictions and the person making the assignments and entries.