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SUBPART A – GENERAL

§ 171.1 Applicability.

(a) Except as provided in paragraph (b) of this section, this part prescribes rules governing—

(1) The provision of air traffic services (ATS) in the Kingdom of Saudi Arabia (KSA) as well as in the airspace over the high seas encompassed by the Jeddah Flight Information Region (FIR) by an air traffic service provider that holds or is required to hold an Air Navigation Service Certificate (ANSC) under General Authority of Civil Aviation Regulation (GACAR) Part 170;
(2) Each person employed or used by an ATS provider when providing ATS under this part;
(3) The requirements for, and the contents of, an air traffic services procedure (ATSP) manual;
(4) The designation, classification and registration of airspace including information for persons who wish to request a designation and classification of airspace; and
(5) The establishment and registration of routes and minimum altitudes.

(b) This part does not apply to:

(1) A person who is providing air traffic services to military aircraft in the course of his duties for the Saudi Arabian military; or
(2) Any air traffic services provided to military aircraft by the Saudi Arabian military.

(c) Additional requirements applicable to ATS providers are prescribed under General Authority of Civil Aviation Regulation (GACAR) Part 173.

(d) Additional requirements applicable to the administering authority and user agencies of certain types of special use airspace are prescribed under General Authority of Civil Aviation Regulation (GACAR) Part 71.

§ 171.3 Restrictions on Air Traffic Services Providers.

(a) No person may provide an air traffic service (ATS) in the Kingdom of Saudi Arabia unless the person complies with the provisions of this part and they have been certificated by the President under GACAR Part 170 to provide such service.

(b) Each ATS provider must provide ATS within KSA airspace in accordance with the obligations imposed by the Convention on International Civil Aviation and Regional Air Navigation Agreements unless a difference has been notified to ICAO by the Kingdom of Saudi Arabia.

(c) Except as provided in GACAR Part 170, each ATS provider must comply with the limitations and provisions of their certificate, operations specifications and their manual prepared under Subpart C.

§ 171.5 Objectives of Air Traffic Services.

(a) The objectives of ATS must be to:

(1) Prevent collisions between aircraft;
(2) Prevent collisions between aircraft on the maneuvering area and obstructions on that area;
(3) Expedite and maintain an orderly flow of air traffic;
(4) Provide advice and information useful for the safe and efficient conduct of flights; and
(5) Notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required.

(b) The objectives of the Air Traffic Control (ATC) services exclude prevention of collision with terrain except when controlled flights are being vectored by radar.

Note - These provisions are general statements which represent high-level safety objectives to be met when providing Air Traffic Services.

§ 171.7 Divisions of Air Traffic Services.

(a) The air traffic services must comprise three services identified as follows:

(1) The air traffic control service, to accomplish objectives (a)(1), (a)(2) and (a)(3) of §171.5, this service being divided in three parts as follows:

(i) Area control service: the provision of air traffic control service for controlled flights, except for those parts of such flights described in (a)(1)(ii) and (a)(1)(iii) of this section, in order to accomplish objectives (a)(1) and (a)(3) of §171.5.
(ii) Approach control service: the provision of air traffic control service for those parts of controlled flights associated with arrival or departure, in order to accomplish objectives (a)(1) and (a)(3) of §171.5.
(iii) Aerodrome control service: the provision of air traffic control service for aerodrome traffic, except for those parts of flights described in §171.7 (a)(1)(ii), in order to accomplish objectives (a)(1), (a)(2) and (a)(3) of §171.5.

(2) Flight information service to provide advice and information useful for the safe and efficient conduct of flights.

(3) Alerting service to notify appropriate organizations regarding aircraft in need of search and rescue aid, and assist such organizations as required; and

(b) Where air traffic services are established, the certified ATS provider must publish information as necessary to permit the utilization of such services.

§ 171.9 Determination of the Need for Air Traffic Services.

(a) The need for the provision of ATS must be determined by the General Manager of Air Traffic Services (GM-ATS) as defined under GACAR Part 171, §171.43(a)(3), and must be accepted by the President. The factors that must be considered in determining the need for the provision of ATS include:

(1) The types of air traffic involved;
(2) The density of air traffic;
(3) The meteorological conditions;
(4) Such other factors as may be relevant.

Note. — Due to the number of elements involved, it has not been possible to develop specific data to determine the need for air traffic services in a given area or at a given location. For example:

(i) a mixture of different types of air traffic with aircraft of varying speeds (conventional jet, etc.) might necessitate the provision of air traffic services, whereas a relatively greater density of traffic where only one type of operation is involved would not;
(ii) meteorological conditions might have considerable effect in areas where there is a constant flow of air traffic (e.g., scheduled traffic), whereas similar or worse meteorological conditions might be relatively unimportant in an area where air traffic would be discontinued in such conditions (e.g. local VFR flights);
(iii) open stretches of water, mountainous, uninhabited or desert areas might necessitate the provision of air traffic services even though the frequency of operations is extremely low.

(b) The carriage of airborne collision avoidance systems (ACAS) by aircraft in a given area must not be a factor in determining the need for ATS in that area.

§ 171.11 Designation of the Portions of the Airspace and Controlled Aerodromes Where Air Traffic Services Will be Provided.

(a) When it has been determined that ATS will be provided in particular portions of the airspace or at particular aerodromes, then those portions of the airspace or those aerodromes must be designated in relation to the ATS that are to be provided.

(b) The designation of the particular portions of the airspace or the particular aerodromes must be as follows:

(1) *Flight information regions (FIR).* Those portions of the airspace where it is determined that flight information service and alerting service will be provided must be designated as Flight Information Regions (FIRs).
(2) *Control areas and control zones.*

(i) Those portions of the airspace where it is determined that air traffic control service will be provided to IFR flights must be designated as control areas or control zones.
(ii) Those portions of controlled airspace wherein it is determined that air traffic control service will only be provided to IFR flights must be designated as Class A airspace.
(iii) Those portions of controlled airspace wherein it is determined that air traffic control service will also be provided to VFR flights must be designated as Classes B, C, or D airspace.
(iv) Where designated within a flight information region (FIR), control areas and control zones must form part of that FIR.

(3) *Controlled aerodromes.* Those aerodromes where it is determined that air traffic control service will be provided to aerodrome traffic must be designated as controlled aerodromes.

§ 171.13 Establishment and Designation of the Units Providing Air Traffic Services.

The air traffic services must be provided by units established and designated as follows:

(a) Flight information centers (FIC) must be established to provide flight information service and alerting service within flight information regions, unless the responsibility of providing such services within a flight information region is assigned to an air traffic control unit having adequate facilities for the discharge of such responsibility.

Note. — This does not preclude delegating to other units the function of providing certain elements of the flight information service.

(b) Air traffic control units (ATCU) must be established to provide air traffic control service, flight information service and alerting service within control areas, control zones and at controlled aerodromes.

(c) The following types of ATCU may be established to provide air traffic control services:

(1) Area Control Centers (ACC);

(2) Approach Control Units (APP); and
(3) Aerodrome Control Towers (TWR).

(d) Where air traffic services are established, the certified ATS provider must publish information as necessary to permit the utilization of such services.

§ 171.15 Specifications for Flight Information Regions, Control Areas and Control Zones.

(a) *General*. The delineation of airspace, wherein ATS are to be provided, must be related to the nature of the route structure and the need for efficient service rather than to national boundaries.

Note 1. — Agreements to permit the delineation of airspace lying across national boundaries are necessary when such action will facilitate the provision of air traffic services. Agreements which permit delineation of airspace boundaries by straight lines will, for example, be most convenient where data processing techniques are used by air traffic services units.
Note 2. — Where delineation of airspace is made by reference to national boundaries there is a need for suitably sited transfer points to be mutually agreed upon with ATS provider(s) in the adjacent States.

(b) *Flight information regions (FIRs).*

(1) Flight information regions must be delineated to cover the whole of the air route structure to be served by such regions.
(2) A flight information region must include all airspace within its lateral limits, except as limited by an upper FIR.
(3) Where a FIR is limited by an upper FIR, the lower limit specified for the upper FIR must constitute the upper vertical limit of the FIR and must coincide with a VFR cruising level as prescribed in GACAR § 91.169.
(4) When an ATS provider proposes to re-organize the airspace, this re-organization must not affect the boundaries of Jeddah Flight Information Region and the proposed structure must limit the number of control areas. Each control area must be delineated to include an upper airspace within the lateral limits of Jeddah FIR and consider the lower limits of other or adjacent control areas.

Note. — In cases where an upper flight information region is established the procedures applicable therein need not be identical with those applicable in the underlying flight information region.

(c) *Control areas.*

(1) Control areas including, inter alia, airways and terminal control areas must be delineated so as to encompass sufficient airspace to contain the flight paths of those IFR flights or portions thereof to

which it is desired to provide the applicable parts of the ATC service, taking into account the capabilities of the navigation aids normally used in that area.

Note. — In a control area other than one formed by a system of airways, a system of routes may be established to facilitate the provision of ATC.

(2) A lower limit of a control area must be established at a height above the ground or water of not less than 700 ft.
(3) The lower limit of a control area must, when practicable and desirable in order to allow freedom of action for VFR flights below the control area, be established at a greater height than the minimum specified in paragraph §171.15(c)(2).
(4) When the lower limit of a control area is above 3000 ft MSL it must coincide with a VFR cruising level as prescribed in GACAR § 91.169.
(5) An upper limit of a control area must be established when either:

(i) ATC service will not be provided above such upper limit; or
(ii) The control area is situated below an upper control area, in which case the upper limit must coincide with the lower limit of the upper control area. When established, such upper limit must coincide with a VFR cruising level as prescribed in GACAR § 91.169.

(d) *Flight information regions or control areas in the upper airspace*: Where it is desirable to limit the number of flight information regions or control areas through which high flying aircraft would otherwise have to operate, a flight information region or control area, as appropriate, must be delineated to include the upper airspace within the lateral limits of a number of lower flight information regions or control areas.

(e) Control zones.
(1) The lateral limits of control zones must encompass at least those portions of the airspace, which are not within control areas, containing the paths of IFR flights arriving at and departing from aerodromes to be used under instrument meteorological conditions.

Note. — Aircraft holding in the vicinity of aerodromes are considered as arriving aircraft.

(2) The lateral limits of a control zone must extend to at least 9.3 km (5 NM) from the center of the aerodrome or aerodromes concerned in the directions from which approaches may be made.

Note. — A control zone may include two or more aerodromes situated close together.

(3) If a control zone is located within the lateral limits of a control area, it must extend upwards from

the surface of the earth to at least the lower limit of the control area.

Note. — An upper limit higher than the lower limit of the overlying control area may be established when desired.

(4) If a control zone is located outside of the lateral limits of a control area, an upper limit must be established.

(5) If it is desired to establish the upper limit of a control zone at a level higher than the lower limit of the control area established above it, or if the control zone is located outside of the lateral limits of a control area, its upper limit must be established at a level which can easily be identified by pilots. When this limit is above 900 m (3000 ft) MSL it must coincide with a VFR cruising level prescribed in GACAR § 91.169.

§ 171.17 Identification of Air Traffic Services Units and Airspaces.

(a) An area control center (ACC) or flight information center (FIC) must be identified by the name of a nearby town or city or geographic feature.

(b) An aerodrome control tower (TWR) or approach control unit (APP) must be identified by the name of the aerodrome at which it is located or by an abbreviated designation from the name of the aerodrome to meet the requirements of radiotelephony communication.

(c) A control zone, control area or flight information region (FIR) must be identified by the name of the unit having jurisdiction over such airspace.

(d) The unit or service must be identified in accordance with Annex 10, Volume II, Chapter 5 except that the name of the location or the unit/service may be omitted provided satisfactory communication has been established.

§ 171.19 Aeronautical Data.

(a) Determination and reporting of air traffic services-related aeronautical data must be in accordance with the accuracy and integrity classification required to meet the needs of the end-user of aeronautical data.

Note. — Specifications concerning the accuracy and integrity classification of air traffic services-related aeronautical data are contained in PANS-AIM (Doc 10066), Appendix 1.

(b) Each ATS provider must ensure that digital data error detection techniques are used during the transmission and/or storage of aeronautical data and digital data sets.

Note. — Detailed specifications concerning digital data error detection techniques are contained in PANS-AIM (Doc 10066).

§ 171.21 Common Reference Systems.

(a) *Horizontal reference system.* World Geodetic System - 1984 (WGS-84) must be used as the horizontal (geodetic) reference system for air navigation services. Reported aeronautical geographical coordinates (indicating latitude and longitude) must be expressed in terms of the WGS 84 geodetic reference datum.

(b) *Vertical reference system.* Mean sea level (MSL) datum, which gives the relationship of gravity-related height (elevation) to a surface known as the geoid, must be used as the vertical reference system for air navigation services.

(c) *Temporal reference system.* The Gregorian calendar and Coordinated Universal Time (UTC) must be used as the temporal reference system for air navigation services.

Note. — Comprehensive guidance material concerning WGS-84 is contained in the World Geodetic System — 1984 (WGS-84) Manual (Doc 9674).

§ 171.23 Regional Air Navigation Agreements.

Each ATS provider must coordinate with the GACA when interacting with foreign States or foreign ATS providers when there are implications for Regional Air Navigation Agreements for which the KSA is a party.

§ 171.25 Applicability of the Standards and Procedures of the International Civil Aviation Organization.

Except as otherwise prescribed in this part, each ATS provider must provide services in full compliance with the applicable standards and procedures of the International Civil Aviation Organization (ICAO). Specifically, the standards and procedures as prescribed in the most current amendments of ICAO Annex 10 and Annex 11, Regional Supplemental Procedures as specified in ICAO Doc. 7030 and Air Traffic Management Procedures as specified in ICAO Doc. 4444 (PANS-ATM). Only items that include the prescriptive term “shall” and that are applicable to “Appropriate ATS Authorities” apply to each ATS provider authorized under this part unless otherwise specified in this part.

§ 171.27 Inspections.

Each ATS provider must facilitate inspections and audits by the President or by a qualified entity acting on behalf of the President to assess the level of effective implementation of the requirements of this Part and it must cooperate as necessary for the efficient and effective exercise of GACA oversight activities.

SUBPART B – MANAGEMENT PERSONNEL

§ 171.41 Management Personnel Required.

(a) Each ATS provider must have sufficient qualified management and technical personnel, acceptable to the President, to ensure the highest degree of safety in its operations. The ATS provider must have qualified personnel, , serving full time in the following or equivalent positions:

(1) A senior person identified as the chief executive who has the authority within the organization to ensure that every air traffic service can be financed, carried out to meet applicable operational requirements, and is provided in accordance with the requirements and standards prescribed by this Part;
(2) A senior person identified for the purposes of this part as the General Manager of Air Traffic Services (GM-ATS) and responsible to the chief executive for ensuring that the organization complies with its operations manual;
(3) Senior persons responsible to the General Manager of Air Traffic Services for ensuing that the provision of air traffic services complies with the requirements of this part;
(4) Air Traffic Services Unit (ATSU) Managers/Chiefs that must be accepted by the President.

(b) The President may authorize positions or numbers of positions other than those listed in paragraph (a) of this section if the ATS provider shows that it can perform the operation with the highest degree of safety under the direction of fewer or different categories of management personnel.

(c) The title of the positions required under paragraph (a) of this section or the title and number of equivalent positions approved under paragraph (b) of this section must be set forth in the ATS provider manual.

(d) The individuals who serve in the positions required or approved under paragraph (a) or (b) of this section and anyone in a position to exercise control over operations conducted under the operating certificate must—

(1) Be qualified through training, experience, and expertise;
(2) To the extent of their responsibilities, have a full understanding of the following material with respect to the certificate holder’s operation:

(i) Aviation safety standards and safe operating practices;
(ii) The GACARs;
(iii) The ATSPM required by GACAR § 171.53.

(3) Discharge their duties to meet applicable legal requirements and to maintain safe operations.

(e) Each ATS provider must—

(1) Describe, in the operations manual required by GACAR 171, §171.51, the safety accountabilities and responsibilities (SA&Rs); the authority; and the duties of all key post holders required under paragraph (a) or (b) of this section. The acceptance by a post holder of their SA&Rs must be confirmed by signature. The ATS provider must review all post holders' SA&Rs at least annually.
(2) List in the operations manual the names and business addresses of the individuals assigned to those positions; and
(3) Request an approval from the President within 30 days of any change in personnel or any vacancy in any position accepted or authorized by the President as prescribed under paragraph (a) and (b) of this section.

§ 171.43 Management Personnel: Responsibilities.

(a) The GM-ATS is responsible for-

(1) Designating and classifying of airspace when authorized under Subpart G;
(2) Establishing and designating routes, points and minimum altitudes when authorized under Subpart H;
(3) Determining the need and the type of ATS to be provided by an ATSU.
(4) Development of policy and procedures to determine the capacity of the ATS system including the number of staff required to ensure the provision of an adequate ATS;
(5) Development and promulgation of Part 1 of the ATSPM as required by GACAR § 171.53;
(6) Endorsement of Part 2 of the ATSPM; and
(7) Signing Letters of Agreement (LOA) with ATSU in adjacent States as required by GACAR § 171.811.
(8) any communication and coordination with ATS providers in adjacent States.

(b) The ATSU Managers/Chiefs are responsible for -

(1) Development and promulgation of Part 2 of the ATS procedures manual for their ATSU as required by GACAR § 171.53;
(2) Assigning a training officer;
(3) Declare the ATC capacity for control areas, control sectors within a control area and for aerodromes within their jurisdiction; and
(4) Developing and signing Letters of Agreement (LOA) with adjacent ATSUs as required by

GACAR § 171.811;

(5) Developing and signing Letters of Agreement (LOA) with aerodrome operator, aerodrome meteorological offices, and any operator or user conducting specific flying activities that must be considered in the provision of ATS.

SUBPART C – MANUAL REQUIREMENTS

§ 171.51 Operations Manual.

(a) Each ATS provider must establish and maintain an operations manual that shows how and where the ATS provider provides, or proposes to provide, air traffic services in compliance with the applicable GACARs.

(b) The operations manual must contain:

(1) A table of contents based on the items in the manual, indicating the page number (and volume number where appropriate) on which each item begins;
(2) A description of the provider's organizational structure and a statement setting out the functions that the certificate holder performs under GACAR Part 171;
(3) A description of the chain of command established and a statement of the duties and responsibilities of any supervisory positions within the organizational structure;
(4) A statement showing how the ATS provider determines the number of operational staff required including the number of operational supervisory staff;
(5) A list of the air traffic services that the certificate holder provides;
(6) A statement for each air traffic service, showing the hours of operation of the service;
(7) A statement, for each air traffic service, that identifies the particular airspace within which the service is provided;
(8) A statement, for each air traffic service, that identifies the location from where the service is provided and the location of the backup facility. For remote aerodrome tower(s), the statement must specify the designation of remote traffic Center (RTC) and Remote Tower module(s) as prescribed under Appendix E to this part;
(9) If the certificate holder provides an air traffic service for a controlled aerodrome: A description of the maneuvering area of the aerodrome with the following documentation:

(i) A copy of, the parts of the aerodrome emergency plan, set out in the aerodrome operator's aerodrome manual that are relevant to the provision of the service; and
(ii) A copy of the procedures set out in the aerodrome operator's aerodrome manual for preventing the unauthorized entry of persons or things onto the maneuvering area of the aerodrome; and
(iii) A copy of the procedures set out in the aerodrome operator's aerodrome manual for the control of surface vehicles operating on or in the vicinity of the maneuvering area;

Note – An ATS Provider may choose to provide a reference to the appropriate aerodrome documentation in the operations manual for the requirements (i), (ii) and (iii) above. This aerodrome

documentation must be available within the Unit libraries as required under GACAR Part 171, §171.807.

(10) A statement of the responsibilities and functions for each operating position;
(11) A description of the arrangements made or proposed to be made by the ATS provider to ensure that it has, and will continue to receive, on a daily basis, the information necessary for providing the service;
(12) A description of the arrangements made or proposed to be made by the ATS provider to ensure that it has, and will continue to be able to provide, information in connection with its air traffic services to another person whose functions reasonably require that information (includes SAR alerting);
(13) A description of the ATS provider's document and record keeping system;

Note – An ATS Provider may choose to provide a description of the document and record keeping arrangements identified in (13) above as part of their quality management system and/or safety management system as required by GACAR Part 5.

(14) A copy of any agreement entered into by the ATS provider in relation to the provision of any of the air traffic services;
(15) A copy of the document that sets out the provider's safety management system required under GACAR Part 5;
(16) A copy of the ATS provider's contingency plan;
(17) A copy of the ATS provider's security program;
(18) A description of the processes and documentation used to present to staff the relevant standards, rules and procedures contained in ICAO Annexes 10 and 11, ICAO PANS-ATM, ICAO Regional Supplementary Procedures, and any of the ATS provider's site-specific instructions for the provision of air traffic services;
(19) A description of the processes and documentation used to provide operational instructions to staff;
(20) A description of the processes by which the Air traffic Services Manuals required under §171.53 are maintained up-to-date.

Note – An ATS Provider may choose to provide a description of the processes and documentation used to provide operational instructions to staff identified in (18) above as part of their air traffic services procedures manual (ATSPM) as required under GACAR 171, §171.53.

(21) A description of the procedures to be followed to ensure all operational staff are familiar with any operational changes that have been issued since they last performed operational duties;
(22) A description of the provider's training and checking program;
(23) A description of the procedures to be used in commissioning new facilities, equipment and

services;

(24) If authorized to designate and classify airspace under Subpart H, a description of methods and criteria used for conducting aeronautical studies as part of the airspace design process;

(25) If authorized to establish and designate routes, points and minimum altitudes under Subpart G, a description of processes used; and

Note– none of the descriptions referenced above are not a substitute for the procedures identified in the ATS provider's SMS for managing the performance of, and changes to, these functions as required by GACAR Part 5.

(26) The procedures to be followed for revising the operations manual.

(c) The operations manual must be approved by the President.

§ 171.53 Air Traffic Services Procedures Manual.

(a) Each ATS provider must publish an air traffic services procedures manual (ATSPM).

(b) Where an ATS provider provides services across a number of facilities, the ATSPM must be published in two parts:

(1) ATSPM Part 1, which is applicable across all air traffic service units at which the ATS provider provides services and is nationally standardized; and

(2) ATSPM Part 2 (Unit Specific Procedures), which is applicable to individual ATS units and which contains procedures applicable only at that unit.

(c) Where an ATS provider provides services at a single location the Part 1 and Part 2 components of the ATSPM may be combined in a single document.

(d) Where an ATS provider produces an ATSPM Part 2, a separate ATSPM Part 2 must be published for each ATS unit. This may also apply where there is more than one unit at a particular location.

(e) The ATSPM Part 1 must be approved by the President;

(f) The ATSMP Part 2 must be approved by the designated General Manager of Air Traffic Services (GM-ATS) and accepted by the President.

(g) An ATS provider may propose, and the President may accept, an alternative means of compliance with this section.

§ 171.55 Air Traffic Service Procedures Manual Formatting & Administration.

Arrangements for the control and amendment of the ATSPM and all other relevant documentation must be documented fully in the ATS Provider's operations manual.

§ 171.57 Distribution of Air Traffic Service Procedures Manual

(a) The ATS Provider must ensure that all documentation required for the safe and efficient provision of services at a unit is to be made available to staff in a timely and comprehensive manner. Documentation required to be immediately available at a controller workstation must be identified and its ready accessibility by staff assured.

(b) Where documents are retained in electronic format, the arrangements for the saving, amending and accessing of such documents must be declared by the ATS Provider. The ATS Provider's document control processes must ensure that documents that are held in electronic format are identified as being uncontrolled when printed.

SUBPART D – AIR TRAFFIC CONTROLLER QUALIFICATION REQUIREMENTS

§ 171.61 Requirement to Hold an Air Traffic Controller License.

(a) Except as provided for in (d), each ATS provider must ensure that a person does not provide an ATC service unless he –

(1) Holds an air traffic controller (ATCO) License issued under GACAR Part 64 along with a valid rating, including any associated unit endorsement relating to the ATC service to be provided;
(2) Holds a current Class 3 medical certificate issued under GACAR Part 67; and
(3) Holds a current English proficiency certificate (or equivalent) as prescribed under GACAR Part 64.

(b) The rating must be one of the followings types:

(1) Aerodrome Control;
(2) Approach Control Procedural;
(3) Approach Control Surveillance;
(4) Area Control Procedural;
(5) Area Control Surveillance.

(c) The unit endorsements must be associated with the rating mentioned in (b); and it must include details of the ATCU and the individual sectors or operational positions, including any surveillance equipment to be used, for which the endorsement is valid.

(d) A person must not be permitted to provide ATC services for which they do not hold a valid rating and endorsement except where they are acting as a student or trainee air traffic controller under supervision of On-The-Job Training Instructor (OJTI) who holds a valid rating appropriate to the ATC service being provided.

§ 171.63 Oversight Duties of Each ATS Provider.

(a) Each ATS provider must have processes, procedures and competent personnel to ensure that their air traffic controllers-

(1) Are appropriately certificated;
(2) Are competent to provide the ATC services for which they hold valid ratings and endorsements;
(3) Comply with requirements for maintaining currency and proficiency under GACAR Part 64;
(4) Comply with the provisions of Subpart F for the regulation of ATCO fatigue;

(5) Hold a current Class 3 medical certificate;
(6) Hold a current English Language Proficiency Certificate Level 4 or higher in accordance with the requirements of Appendix A to GACAR Part 61;
(7) Are not under the influence of psychoactive substances or medication or suffering from any illness or injury to an extent that may endanger the safety of aircraft to which an ATC is being provided.

(b) Each ATS provider must have processes, procedures and competent personnel to ensure that:

(1) Student ATCOs:

(i) Hold a current Student ATCO certificate;
(ii) Have successfully completed an approved course of initial training under GACAR Part 144, or a training course approved by an ICAO Contracting State that is acceptable to the President, in the rating discipline in which they will be providing an ATC service under supervision or will undertake a familiarization course under supervision;
(iii) Commence the unit training plan within 3 months from the date of successfully completing the examinations for rating discipline in which they will be providing an ATC service under supervision;
(iv) Comply with the provisions of Subpart F for the regulation of ATCO fatigue while undergoing OJT;
(v) Hold a current Class 3 medical certificate; and
(vi) Hold a current English Proficiency certificate.

(2) The On-the-job-training-instructor (OJTI) supervising the Student ATCO holds a valid rating appropriate to the ATC service being provided.

(c) Each ATS provider must have processes, procedures and competent personnel to ensure that each OJTI:

(1) Holds an OJTI certificate and valid ratings and endorsements entitling them to provide the ATC services in which they are supervising trainee ATCO;
(2) Has received specific training on the conduct of the unit training plan;
(3) Who is required to instruct training in unusual circumstances and emergencies has received specific training on the conduct of training in unusual circumstances and aircraft in emergencies;
(4) Is competent to supervise trainee ATCO;
(5) Is assessed annually for their ongoing competence in the role of OJTI.
(6) An OJTI who undertakes assessments must also be qualified as an ATC Assessor.

(d) Each ATS provider must permit an OJTI to provide an ATC service without any training responsibilities, for sufficient time to remain competent on the specific sector(s) or operational position(s) for which he provides on-the-job training.

§ 171.65 Privileges of the Holders of ATCO Licenses While Acting as a Trainee.

(a) An ATCO license entitles the holder to provide an ATC service, for which he does not hold a valid rating, under the supervision of an OJTI, who holds a valid rating appropriate to the ATC service being provided.

(b) A controller who has not exercised the privileges of a particular rating and/or unit endorsement within the previous 6 months must not commence on-the- job training until he has been assessed by the concerned ATC training unit for previous competence and successfully completed the required training and assessments.

§ 171.67 Use of ATC/FIS Assessors.

Each ATS provider must have processes, procedures and competent personnel to ensure that:

(a) The unit has an appropriate number of suitably qualified ATC/FIS assessors;

(b) ATC assessors must not conduct assessments for which they do not hold the appropriate examiner authorization issued under GACAR Part 183;

(c) ATC assessors hold valid ratings appropriate to the assessments they are conducting.

SUBPART E – TRAINING AND CHECKING PROGRAMS

§ 171.71 General.

(a) This subpart sets out the requirements for a training and assessment program

(b) Each ATS provider must implement a training and assessment program to ensure that an individual performing a function in conjunction with any air traffic services is competent to perform that function. An individual is competent if that individual is:

(1) Certificated under GACAR Part 64, where the function can only be performed by the holder of an ATS license;
(2) Rated, where the function can only be performed by the holder of an appropriate rating;
(3) Endorsed, where the function can only be performed by the holder of an appropriate endorsement;
(4) Qualified, where the function can only be performed by the holder of an appropriate qualification;
(5) Trained and proven to be proficient in the performance of functions that are not covered by sub-paragraphs (a) to (d) above; and
(6) Recent in the performance of the function and knowledge and skills in emerging matters identified as essential to task performance.

(c) Processes which address the integrity of staff training must be defined, documented and maintained.

§ § 171.72 Unit Training Plan.

(a) Each ATS provider must have a unit training plan (UTP) for each ATSU, approved by the President, which details the processes by which ATCOs, AFISOs, Instructors, and assessors are trained, and competent to exercise the privileges of their license, ratings, endorsements, and authorizations. The UTP must be developed in accordance with the principles of competency-based training and assessment defined under ICAO PANS-TRG (Doc 9868).

(b) The UTP must be divided into three phases:

(1) Pre-on-the-job training (POJT). POJT must adequately prepare student and/or trainee air traffic controllers/Flight Information Service Officer for OJT by extensive use of simulation based on site specific facilities.
(2) On-the-Job training (OJT). OJT must prepare a student or trainee air traffic controller/Flight Information Service Officer to a level of operational proficiency such that he/she is able to provide an air traffic control service or Flight Information Service in an unsupervised capacity.

(3) Continuation training designed to maintain the validity of the endorsements of the license, consisting of:

(i) Unit recurrent (refresher) training. Unit recurrent training must ensure that all operational personnel receive annual recurrent unit training, including issues affecting all units and supplemented with critical and local issues, if required. The unit recurrent unit training must cover the subject of human performance including principles of threat and error management.
(ii) Conversion training must design to provide knowledge, skills and attitudes appropriate to a change in the operational environment. Conversion training may be provided for changes to operational procedures and/or systems to ensure that all ATCOs remain competent in the changing environment.

(c) Each ATS provider must maintain training records as prescribed in Subpart Z.

(d) The UTP must be fully documented, indicating:

(1) The objectives of the training;
(2) The training processes by which the objectives will be met;
(3) The assessment process by which progress will be judged;
(4) The minimum and maximum training time required/allotted to achieve the objectives of the training program;
(5) The process by which successful completion of OJT is to be judged; and
(6) In the case of an ATCU at which controllers may be awarded a Surveillance Radar Approach Endorsement to the Approach Control Surveillance Rating, the minimum number of Surveillance Radar Approaches which a student or trainee controller must complete prior to an assessment of competence being undertaken.

(e) Student and/or trainee ATCO/FISO must be kept aware of their progress, including any areas where improvement is required and the goals, they must achieve to successfully complete the training.

(f) A report of the student and/or trainee ATCO's/FISO's performance must be completed after each training session; the reports must be sufficiently detailed to enable other OJTIs to determine the strengths and weaknesses of the trainee, together with his level of competence.

(g) To be considered as qualified to conduct on-the-job training in the live operational environment, ATC OJTIs must meet the requirements of the approved OJTI adapted competency model defined under the UTP.

§ 171.73 Roles and Responsibilities.

Each ATS provider must-

(a) Assign the over-all responsibility of managing a specific UTP to the ATSU Manager/Chief who is responsible for the development, implementation, and monitoring of the UTP. The ATSU Manager/Chief, or his assigned delegate, is responsible for the establishment and maintenance of a quality assurance program that adheres to the standards and procedures established by the GM-ATS;

(b) Direct the ATSU Manager/Chief to assign a training officer. Detailed terms of reference for the training officer must be described in Parts 1 and 2 of the ATSPM;

(c) Ensure each ATSU training officer maintains, in a manner acceptable to the President, a training record for each person undergoing training at the ATSU for the purpose of obtaining a rating or unit endorsement in respect of the ATSU. The training record must include the certificate number of the OJTI providing the training and certify that any information entered in the record is correct by signing and dating the entry;

(d) At the request of any person who is undergoing or has undergone training at an ATSU, provide a copy of the person's training record to the person; and

(e) At the request of the President, provide the President with a copy of the training record of any person who is undergoing or has undergone training at the ATSU and who holds an ATCO/FISO license.

§ 171.75 Use of Simulators.

(a) All UTP are required to indicate the amount of training, if any, that will be conducted on a simulator.

(b) Each simulator must be approved by the President as part of the course approval process for any particular UTP.

(c) Each ATS provider is required to demonstrate to the President how the simulator and the associated exercises will provide adequate support for the particular training plan.

§ 171.77 ATC and FIS On-The-Job-Instructors (OJTI).

(a) Each ATS provider may only use ATC or FIS On-The-Job-Instructors (OJTI) who hold a valid OJTI

Endorsement rating issued in accordance with GACAR Part 64 requirements.

(b) Each ATC and FIS OJTI must work under the direction of the ATSU training officer.

(c) Each ATS provider must detail the duties of the ATC and FIS OJTI in Parts 1 and 2 of the ATSPM.

§ 171.79 ATCO Competence.

(a) Each ATS provider must ensure that each air traffic controller Officer (ATCO) maintain their English language proficiency rating scale of Level 4 or higher in accordance with Appendix A to GACAR Part 61.

(b) Each ATS provider must ensure that each ATCO maintains their competence at the required standard. All ATCOs must complete a competence assessment an annual basis as part of the renewal of unit license endorsements. Competence Assessment procedures must be described in the ATS Provider's Operations Manual and undertaken by qualified ATC Assessors.

(c) Each ATS provider must ensure that ATCO competence must be assured through the use of a competency- based training and assessment scheme, approved by the President, that provides for the continuous assessment of ATCO performance. The scheme must, as a minimum, covers the following;

(1) The scope of the scheme;
(2) Who is authorized to conduct ATCO competence assessments;
(3) How frequently assessments will be undertaken;
(4) Actions to be taken when underperformance is identified
(5) What records will be made and how these will be maintained in a secure manner;

Note — Details on Air Traffic Controllers competency-based training and assessment are provided in ICAO PANS-TRG (Doc 9868).

§ 171.81 Remedial Training.

(a) Each ATS provider must publish instructions for remedial training to ensure that proficiency standards are maintained in Part 1 of the ATSPM.

(b) Each ATS provider must maintain remedial training records as prescribed in Subpart Z.

§ 171.83 Qualifications: ATC Assessors Controllers.

(a) For the purposes of this section an ATC Assessor is an Air Traffic Controller who holds an ATC Assessor Endorsement and who is authorized and qualified to conduct competency assessments under GACAR § 171.79.

(b) No ATS provider may use a person, nor may any person serve as an ATC Assessor under this part unless that person—

(1) Has satisfactorily completed an ATC Assessor's training course and is the holder of an ATC Assessor license endorsement in accordance with the requirements of GACAR Part 64 Subpart H;
(2) Has at least 5 years' experience exercising the privileges of an ATCO certificate;
(3) Has at least 2 years' experience as an OJTI;
(4) Holds a current English language proficiency rating of Level 5 or higher;
(5) Has successfully completed the required training and checking requirements prescribed in GACAR § 171.85; and
(6) Has been approved by the President for the assessment duties involved.

(c) Completion of the requirements in paragraphs (b)(4), (5), and (6) of this section must be entered in the individual's training record maintained by the ATS provider.

§ 171.85 Initial and Transition Training and Competence Requirements: ATC Assessors.

(a) No ATS provider may use a person nor may any person serve as an Assessor unless—

(1) That person satisfies all requirements of GACAR Part 171 §171.83; and
(2) Within the preceding 24 calendar months that person satisfactorily conducts an assessment of competence under the observation of a GACA inspector or a designated ATCO Assessor.

(b) The assessment required by paragraph (a)(2) of this section is considered to have been completed in the month required if completed in the calendar month before, or the calendar month after, the month in which it is due.

(c) Prior to undertaking any competence assessments, an ATC Assessor must:

(1) hold an appropriate authorization issued by the President.
(2) Receive a briefing from the GM ATS on the applicable GACAR requirements and the air traffic service provider's policies and procedures.

(d) ATC Assessors must use appropriate methods, procedures, and techniques for conducting the required assessments.

(e) The purpose of an assessment of performance is to confirm the consistent use of:

(i) Standard practices and procedures as detailed in the ATS Provider's Air Traffic Services Manual, for the delivery of safe air traffic services; and
(ii) A high standard of phraseology; and
(iii) A high standard of team-working; and
(iv) The display of personal characteristics consistent with the role of ATCO

(f) When an Air traffic Controller competency is assessed by an ATC Assessor is below the required level, the ATS provider must suspend the concerned controller from further operational duties and identify the required remedial training / corrective actions etc. in accordance with the procedures detailed in the ATS Provider's operations manual.

Note — Details on Air Traffic Controllers competency- based training and assessment are provided in ICAO PANS-TRG (Doc 9868).

SUBPART F – FATIGUE MANAGEMENT

§ 171.91 Applicability.

(a) This subpart prescribes requirements for the management of fatigue in the provision of air traffic control services.

(b) Each ATS provider has the option to—

(1) complies with duty time limitations requirements prescribed in this subpart, or
(2) implement a comprehensive fatigue risk management system (FRMS) that complies with all applicable requirements for an FRMS as prescribed in Section II of Appendix F and Appendix G to GACAR Part 5.

§ 171.93 Duty time limitations.

(a) Each ATS provider must develop, implement, and monitor a rostering system, acceptable to the President, in order to manage the risks of occupational fatigue of air traffic controllers through a safe alternation of duty and rest periods. Within the rostering system, the ATS provider must specify the following elements:

(1) maximum consecutive working days with duty must comply with the following rostering principles:

(i) not exceed 18 working days (excluding on call duty) within 30 days and the number of consecutive working days must not exceed 6 working days within 10 days;

(2) maximum hours per duty period must comply with the following rostering principles:

(i) the maximum hours per duty period must not exceed 8 hours;
(ii) Within 720 consecutive hours (30 days) the aggregate of periods of duty must not exceed 144 hours, provided that periods of duty including on call duty do not exceed 160 hours.

(3) maximum time providing air traffic control service without breaks must comply with the following rostering principles:

(i) The maximum time providing ATC service without a break must not exceed 2 hours;

(ii) Notwithstanding point (i), at ATS units where workload for any part of the day is judged to be low and the activity is spasmodic rather than continuous, the maximum time providing ATC service without a break, at these times, must not exceed 3 hours when accepted by the President.

(4) the ratio of duty periods to breaks when providing air traffic control service must be at least 1:4; for example, 15 minutes break for 1hour operational duty period.
(5) minimum rest periods must comply with the following rostering principles:

(i) the ratio of duty periods to breaks when providing air traffic control service must be at least 1:4; for example, 15 minutes break for 1hour operational duty period, 30 minutes break where the maximum time providing ATC service without a break is 2 hours…etc.
(ii) There must be an interval of not less than 16 hours between the conclusion of one duty period and the commencement of the next period of duty.

(6) maximum consecutive duty periods encroaching the nighttime, if applicable, depending upon the operating hours of the air traffic control unit concerned. This maximum must comply with the following rostering principles:

(i) Not more than two-night duties must be worked in immediate succession. In exceptional circumstances, two additional consecutive night duties, resulting in a total number of four-night duties may be authorized by the chief of ATS Unit.
(ii) The night duty must conclude no later than 0600 local time.

(7) minimum rest period after a duty period encroaching the night-time must comply with the following rostering principles:

(i) Upon the conclusion of a single night duty, or two consecutive night duties, there must be an interval of a minimum of 24 hours before the commencement of the next period of duty.
(ii) Each ATS Provider must, in exceptional circumstances and with the consent of the air traffic controller concerned, offer a 24-hour minimum interval between the end of a single night duty and the commencement of the next period of duty. This allowance must only be utilized separately twice within 30 days to cover short notice staffing difficulties or unusual situations.

(8) minimum number of rest periods within a roster cycle must comply with the following rostering principles:

(i) The total leave entitlement per calendar year for license holders must be in compliance with the KSA Labor Law;

(ii) During any calendar year or annual leave a minimum of 10 days of total holiday entitlement must be taken. Any annual leave period must include a minimum of five consecutive days.

(b) Each ATS provider should consult air traffic controllers who will be subject to the rostering system, during its development and its application, to identify and mitigate risks concerning fatigue which could be due to the rostering system itself.

Note. — Complying with the duty time limitations does not relieve the air traffic services provider of the responsibility to manage its risks, including fatigue-related risks, using its SMS in accordance with the provisions of GACAR Part 5 and ICAO Annex 19.

§ 171.95 Fitness for Duty.

(a) Each ATCO must report for any duty period rested and prepared to perform his assigned duties.

(b) No ATS provider may assign, and no ATCO may accept assignment to, a duty period if the ATCO has reported for a duty period and he/she is suffering from fatigue.

(c) No ATS provider may permit an ATCO to continue a duty period if the ATCO has reported himself fatigued.

§ 171.97 Compliance with duty time requirements.

(a) Each ATS Provider must:

(1) retain evidence that duty time limitations set by the air traffic controllers' rostering system required under §171.93 are not exceeded and that non-duty period requirements are met;
(2) identify a process for assigning unscheduled duties that allows air traffic controllers to avoid extended periods of being awake;
(3) familiarize its personnel with the principles of fatigue management and its policies with regard to fatigue management;
(4) establish a process to allow variations from the duty time limitations to address any additional risks associated with sudden, unforeseen operational circumstances;
(5) demonstrate that any associated risk to address operational needs in exceptional circumstances is being managed to a level of safety equivalent to, or better than, that achieved through FRMS; and
(6) define processes to integrate FRMS functions with its other safety management functions.

(b) Each ATS Provider must report any deviation from the approved FRMS with details on the following:

(1) the reason for the need to deviate;
(2) the extent of the deviation;
(3) the date and time of enactment of the deviation; and
(4) a safety case, outlining mitigations, to support the deviation.

SUBPART G – DESIGNATION, CLASSIFICATION AND REGISTRATION OF AIRSPACE AND ASSOCIATED CHANGES

§ 171.101 Purpose.

(a) This subpart prescribes procedures that must be used by each ATS provider that has been authorized by the President to introduce airspace changes and to conduct the designation and classification of—

(1) Airspace within the territorial limits of Saudi Arabia; and

(2) Airspace for which Saudi Arabia has accepted responsibility under international civil aviation agreements.

(b) This subpart prescribes procedures associated with airspace changes, and registering airspace in the air navigation register.

(c) This subpart also prescribes rules for persons requesting the designation and classification of airspace.

§ 171.103 General.

(a) Each authorized ATS provider must ensure that any proposal for airspace change, including Instrument Flight Procedures (IFPs), routes, points and minimum altitudes as defined under Subpart H of this part, must include at least the following:

(1) A safety risk assessment to identify safety mitigations for the safe introduction of the airspace change;
(2) Consultation, coordination, and notification to airspace users and other stakeholders conducted in accordance with arrangements accepted by the President. Such arrangements must be comprehensive, and include as a minimum, processes and procedures for the safe introduction of the airspace change in the context of training, testing and validation of:

(i) The people who will be involved or affected by the introduction of the airspace change, their training and any associated communication activities for consultation and awareness purposes.
(ii) The procedures which are to be followed by aerodrome personnel, ATS Units or participating flight crews and any associated organizational arrangements which need to be put in place before the airspace change can be introduced into use.
(iii) The updates of the data and information associated with the operation of aircraft affected by

the airspace change, its suitability for purpose and availability.
(iv) ATS Unit procedures must also be included for a post-implementation safety review of the airspace change and its associated safety requirements.
(v) The updates to the dataset used for the provision of Air Traffic Services as consequences of the airspace change.

(b) Under this subpart the authorized ATS provider may designate—

(1) Any portion of airspace within the Jeddah Flight Information Region (FIR) as any one or more of the following:

(i) A sector if the ATS provider considers such a designation is necessary to facilitate the provision of an air traffic service within that flight information region:
(ii) Controlled and associated airspace in accordance with Sections I of Appendix C to this part:
(iii) Special use airspace in accordance with Section III of Appendix C to this part:
(iv) Transponder mandatory airspace in accordance with Section IV of Appendix C to this part.

(2) Visual reporting points, mountainous zones, and other miscellaneous designations in accordance with Section V of Appendix C to this part.

(c) The authorized ATS provider must classify airspace that is designated as controlled airspace under paragraph (a)(1)(ii) in accordance with Section II of Appendix C to this part.

(d) The authorized ATS provider may classify a portion of airspace that is not designated as controlled airspace under paragraph (a)(1)(ii) as Class F in accordance with Section III of Appendix C to this part.

(e) Any portion of airspace within a FIR that is not designated as controlled airspace under paragraph (b)(1)(ii) is uncontrolled airspace and is classified as Class G airspace unless it is classified as Class F airspace under paragraph (d).

(f) All airspace designations and classifications under this subpart must comply with any requirements and principles set out in airspace policies promulgated by the President.

(g) Based on factors such as the number and type of aircraft movements, the President may require the authorized ATS provider to conduct a site-specific aeronautical study to determine the class of airspace and level of air traffic service that must apply there. All aeronautical studies must be carried out using methodologies and criteria acceptable to the President.

§ 171.105 Boundaries of Designated Airspace.

(a) The lateral limits of airspace designated under this subpart must be defined by—

(1) Geographical co-ordinates in degrees, minutes, and seconds; and
(2) Any one or more of the following:
(i) Prominent geographical line features:
(ii) A circle or any part of a circle of specified radius around a geographical co-ordinate:
(iii) A great circle between 2 points:
(iv) A parallel of latitude.

(b) The vertical limits of airspace designated under this subpart must be defined by heights, altitudes, or flight levels.

(c) Unless otherwise specified, the expression to a height includes that height.

§ 171.107 Application for Designation and Classification of Airspace.

(a) Any person with a bona fide interest in airspace may apply to the authorized ATS provider for a designation or classification of airspace under this subpart.

(b) An applicant for an airspace designation or classification must provide the following details:

(1) The name and contact details of the applicant:
(2) The type of designation or classification required:
(3) The reason for the designation or classification:
(4) The dimensions or other boundary information for the airspace that is required:
(5) The period for which the designation or classification is required:
(6) The contact details of any applicable administering authority or using agency:
(7) Any other applicable information required by the ATS provider.

(c) Except for urgent requests that are associated with State aircraft operations, search and rescue operations, or other emergency situations, an application for an airspace designation or classification must be submitted to the authorized ATS provider not less than 90 working days before the aeronautical information regulation and control (AIRAC) cycle date on which the designation or classification is to come into force unless a shorter period is acceptable to the President.

§ 171.109 Procedure for Designation, Classification and Registration of Airspace.

(a) Before making a designation or classification under this subpart, the authorized ATS provider must consult with such persons, organizations, and representative groups within the aviation industry and elsewhere and any government departments and agencies as the President considers appropriate, having regard to the requirements of—

(1) Section I of Appendix C to this part (controlled airspace); and

(2) Section II of Appendix C to this part (classification of airspace); and

(3) Section III of Appendix C to this part (special use airspace); and

(4) Section IV of Appendix C to this part (transponder mandatory airspace); and

(5) Section V of Appendix C to this part (visual reporting points, mountainous zones, and other miscellaneous designations).

(b) For each designation or classification of airspace made under this subpart, the authorized ATS provider must specify—

(1) The period that the designation or classification is active; or

(2) The method by which the designation or classification is made active.

(c) Designations and classifications of airspace, and designations of reporting points and mountainous zones that are made under this subpart do not come into force until those designations and classifications are notified and published in accordance with paragraphs (d).

(d) The authorized ATS provider must ensure that the details of each designation and classification of airspace and each designation of a reporting point, and mountainous zone are—

(1) Entered in an air navigation register under GACAR§ 171.113; and

(2) Provided to the AIS providers authorized under GACAR Part 175 for publishing in the KSA AIP or by NOTAM when approved by the President.

§ 171.111 Withdrawal of Designations and Change of Airspace Classification.

(a) If the authorized ATS provider is satisfied that a designation, or a classification, that has been made

under this subpart is no longer needed or is no longer appropriate, the authorized ATS provider may withdraw the designation or alter the classification.

(b) The withdrawal of an airspace designation or the change of an airspace classification made under paragraph (a) does not come into force until—

(1) The details in the air navigation register under GACAR § 171.113 are amended; and
(2) The details are provided to the AIS providers authorized under GACAR Part 175 and are published in the KSA AIP or by NOTAM when approved by the President.

§ 171.113 Air Navigation Register.

(a) The authorized ATS provider must establish and maintain an air navigation register.

(b) The authorized ATS provider must ensure that the air navigation register contains the following information:

(1) A current description of any airspace changes as defined under §171.101;
(2) A current description of each portion of airspace that is designated under this subpart:
(3) A current description of the boundary information of each portion of airspace that is classified by the ATS provider as Class F airspace under this subpart:
(4) Current information, including the name or designator and coordinates of each reporting point designated under this subpart.
(5) Minimum altitudes established under Subpart H.

(c) The authorized ATS provider must notify the GACA and each AIS provider authorized under GACAR Part 175 of each amendment to the air navigation register.

(d) The authorized ATS provider must ensure that any transfer of aeronautical data associated from or to the air navigation register complies with the standards specified in the Aeronautical Information Transfer Model (AIXM-5) document or other standards accepted by the President as an equivalent.

§ 171.115 Airspace Designations and Classifications Mandated by the President.

When directed by the President, the authorized ATS provider must designate, classify and register airspace in accordance with instructions prescribed by the President.

SUBPART H – ESTABLISHMENT AND REGISTRATION OF ROUTES, POINTS AND MINIMUM ALTITUDES

§ 171.121 Purpose.

(a) This subpart prescribes procedures that must be used by each ATS provider who has been authorized by the President for the establishment of routes, points and minimum altitude.

(b) This subpart prescribes procedures associated with establishing routes for which strategic lateral offset procedures (SLOP) are authorized.

(c) This subpart prescribes procedures associated with registering routes, points, and minimum altitudes in the air navigation register.

§ 171.123 Establishment and Identification of ATS Routes.

(a) When ATS routes are established, a protected airspace along each ATS route and a safe spacing between adjacent ATS routes must be provided.

(b) When warranted by density, complexity or nature of the traffic, special routes must be established for use by low-level traffic, including helicopters operating to and from helidecks on the high seas. When determining the lateral spacing between such routes, account must be taken of the navigational means available and the navigation equipment carried on board helicopters.

(c) ATS routes must be identified by designators.

(d) Designators for ATS routes other than standard departure and arrival routes must be established in accordance with the principles set forth in Appendix 1 of Annex 11 to the Convention of International Civil Aviation.

(e) Standard departure and arrival routes and associated procedures must be:

(1) Established when necessary to facilitate:

(i) the safe, orderly and expeditious flow of air traffic;
(ii) the description of the route and procedure in air traffic control clearances.

(2) identified in accordance with the principles set forth in Appendix 3 of Annex 11 to the

Convention of International Civil Aviation;
(3) approved by the President as prescribed under GACAR Part 172 §172.83.

(f) Routes that are established and designated under this subpart do not come into force until those designations are notified and published in accordance with paragraph (g).

(g) The authorized ATS provider must ensure that the details of each route are—

(1) Entered in the air navigation register prescribed under GACAR § 171.113; and
(2) Provided to the AIS providers authorized under GACAR Part 175 for publishing in the KSA AIP or by NOTAM when approved by the President.

Note 1.— Guidance material relating to the establishment of ATS routes is contained in the Air Traffic Services Planning Manual (Doc 9426). The design criteria are contained in PANS-OPS (Doc 8168), Volume II.
Note 2.— Guidance material relating to the establishment of ATS routes defined by VOR and change-over points is contained in Annex 11, Attachment A.
Note 3. — The spacing between parallel tracks or between parallel ATS route center lines based on performance-based navigation will be dependent upon the relevant navigation specification required.

§ 171.125 Establishment of Routes Where SLOP is Authorized.

(a) Strategic Lateral Offset Procedures (SLOP) are procedures authorized by the President for application in specific circumstances, and subject to operational approval by an authorized ATS provider, that allow aircraft to fly on a parallel track at a distance of 1NM or 2 NM to the right of the center line relative to the direction of flight to mitigate the lateral overlap probability due to increased navigation accuracy and wake turbulence encounters. An aircraft's use of these procedures does not affect the application of prescribed separation standards.

(b) The following must be taken into account by the authorized ATS provider when establishing routes where the use of strategic lateral offsets will be authorized:

(1) Strategic lateral offsets may only be authorized in en-route oceanic or remote continental airspace.
(2) Strategic lateral offsets do not affect lateral separation minima and may only be authorized for uni-directional, bi-directional routes, and parallel routes (including where routes or route systems intersect) where the spacing between route center lines must be in accordance with ICAO PANS-ATM, Doc 4444.
(3) In some instances, it may be necessary to impose restrictions on the use of strategic lateral offsets (e.g., where their application may be inappropriate for reasons related to obstacle clearance). Route

conformance monitoring systems must account for the application of SLOP.

(c) Strategic lateral offset procedures may only be implemented on a regional basis after coordination between all States involved;

(d) The routes or airspace where application of strategic lateral offsets is authorized, and the procedures to be followed by pilots, must be promulgated in the KSA AIP; and Air traffic controllers must be made aware of:

(1) The routes and airspace within which strategic lateral offsets are authorized; and
(2)That pilots are not required to inform ATC that a strategic lateral offset is being applied.

(e) Each authorized ATS provider must publish procedures for SLOP in Part 1 of their ATSPM.

§ 171.127 Establishment of Changeover Points.

(a) Changeover points must be established on ATS route segments defined by reference to very high frequency omnidirectional radio ranges where this will assist accurate navigation along the route segments. The establishment of changeover points must be limited to route segments of 110 km (60 NM) or more, except where the complexity of ATS routes, the density of navigation aids or other technical and operational reasons warrant the establishment of changeover points on shorter route segments.

(b) Unless otherwise established in relation to the performance of the navigation aids of frequency protection criteria, the changeover point on a route segment must be the mid-point between the facilities in the case of a straight route segment or the intersection of radials in the case of a route segment which changes direction between the facilities.

(c) Changeover points that are established and designated under this subpart do not come into force until those points are notified and published in accordance with paragraph (d).

(d) The authorized ATS provider must ensure that the details of each changeover point are—

(1) Entered in the air navigation register prescribed under GACAR §171.113; and
(2) Provided to the AIS providers authorized under GACAR Part 175 for publishing in the KSA AIP or by NOTAM when approved by the President.

Note. — Guidance on the establishment of change-over points is contained in Attachment A of Annex 11 to the Convention of International Civil Aviation.

§ 171.129 Establishment and Identification of Significant Points.

(a) Significant points must be established for the purpose of defining an ATS route or instrument approach procedure and/or in relation to the requirements of air traffic services for information regarding the progress of aircraft in flight.

(b) Significant points must be identified by designators and established in accordance with the principles set forth in Appendix 2 of Annex 11 to the Convention of International Civil Aviation.

(c) Significant points that are established and designated under this subpart do not come into force until those points are notified and published in accordance with paragraph (d).

(d) The authorized ATS provider must ensure that the details of each significant and reporting point are—

(1) Entered in the air navigation register prescribed under GACAR § 171.133; and
(2) Provided to the AIS providers authorized under GACAR Part 175 for publishing in the KSA AIP or by NOTAM when approved by the President.

§ 171.131 Establishment and Identification of Standard Routes for Taxiing Aircraft.

(a) Where necessary, authorized ATS providers must establish standard routes for taxiing aircraft on an aerodrome between runways, aprons and maintenance areas. Such routes must be direct, simple and where practicable, designed to avoid traffic conflicts.

(b) Standard routes for taxiing aircraft must be identified by designators distinctively different from those of the runways and ATS routes.

(c) Routes that are established and designated under this subpart do not come into force until those routes are notified and published in accordance with paragraph (d).

(d) The authorized ATS provider must ensure that the details of each route are—

(1) Entered in the air navigation register prescribed under GACAR § 171.113; and
(2) Provided to the AIS providers authorized under GACAR Part 175 for publishing in the KSA AIP or by NOTAM when approved by the President.

§ 171.133 Establishment of Minimum Flight Altitudes.

(a) Each authorized ATS provider must determine and promulgate minimum flight altitudes for each ATS route and control area defined within Jeddah FIR. The minimum flight altitudes determined must provide a minimum clearance above the controlling obstacle located within the areas concerned.

(b) When directed by the President, the authorized ATS provider must establish and register routes, points and minimum flight altitudes in accordance with instructions prescribed by the President.

(c) The authorized ATS provider must ensure that the details of minimum flight altitudes are provided to the AIS providers authorized under GACAR Part 175 for publishing in the KSA AIP or by NOTAM when approved by the President.

Note. — The requirements for publication of minimum flight altitudes and of the criteria used to determine them are contained in PANS-AIM (Doc 10066), Appendix 2. Detailed obstacle clearance criteria are contained in PANS-OPS (Doc 8168), Volume II.

§ 171.135 Routes and Points Register.

(a) The authorized ATS provider must establish and maintain a routes and points register.

(b) The authorized ATS provider must ensure that the routes and points register contains the current description of each ATC route, taxiing route, significant point, changeover point, reporting point and minimum altitude that is established under this subpart.

(c) The authorized ATS provider must ensure that the routes register contains the current description of each route authorized for SLOP that is established under this subpart.

(d) The authorized ATS provider must notify the GACA SS&AT and each AIS provider authorized under GACAR Part 175 of each amendment to the routes and points register.

(e) The authorized ATS provider must ensure that any transfer of aeronautical data associated from or to the routes and points register complies with the standards specified as the Aeronautical Information Transfer Model (AIXM-5) or other standards accepted by the President as an equivalent.

§ 171.137 Instrument flight procedure design service.

(a) The ATS provider must ensure that the development, validation, approval, registration, promulgation and maintenance of instrument flight procedures (IFP) are conducted in accordance with the requirements

of GACAR Part 172.

(b) Each ATS provider must establish suitable arrangements with a certified Instrument flight procedures services (IFPS) provider to ensure that all instrument flight procedures, serving the aerodromes and airspace under the jurisdiction of the ATS provider are:

(1) designed in accordance with the requirements of GACAR Part 172;
(2) based on the operational requirements and subject of close coordination with the affected ATS Units;
(3) maintained and revised when needed, and subject of periodic review not exceeding five years.

SUBPART I – COORDINATION

§ 171.151 Coordination Requirements: General.

(a) Each ATS provider must establish systems and procedures for ensuring effective coordination between its headquarters and each ATSU and the following agencies and operators (as applicable)—

(1) General Authority of Civil Aviation (GACA);
(2) Each aeronautical telecommunication service provider operating under GACAR Part 173;
(3) Each instrument flight procedure services (IFPS) provider operating under GACAR Part 172;
(4) Each meteorological service (MET) provider operating under GACAR Part 179;
(5) Each aeronautical information service (AIS) provider operating under GACAR Part 175;
(6) Each search and rescue (SAR) authority;
(7) Any other ATS provider authorized by the President under this part;
(8) Foreign ATS providers in adjoining States or FIR;
(9) Any Air Traffic Controller Schools operating under GACAR Part 144 for which they utilize their services;
(10) Aircraft operators;
(11) The Saudi Arabian Armed Forces;
(12) Each aerodrome operator responsible for the administration and management of aerodrome infrastructure where Air traffic Services are provided and
(13) The apron management service, if the service is not provided by the aerodrome operator or the aerodrome control unit.

(b) Each ATS provider must publish coordination procedures required by this subpart in the ATSPM.

§ 171.153 Coordination Between the ATS Provider and Operators.

(a) Air traffic services units (ATSUs), in carrying out their objectives, must have due regard for the requirements of the operators consequent on their obligations as specified in the applicable GACARs, and, if so required by the operators, must make available to them or their designated representatives such information as may be available to enable them or their designated representatives to carry out their responsibilities.

(b) When so requested by an operator, messages (including position reports) received by ATSUs and relating to the operation of the aircraft for which operational control service is provided by that operator must, so far as practicable, be made available immediately to the operator or a designated representative in accordance with locally agreed procedures.

(c) When it becomes evident that delays will be encountered by arriving aircraft, operators or designated representatives must, to the extent practicable, be notified and kept currently informed of any changes in such expected delays.

§ 171.155 Coordination Between the ATS Provider and Military Authorities.

(a) Each ATS provider must establish and maintain close cooperation with military authorities responsible for activities that may affect flights of civil aircraft.

(b) Each ATS provider must ensure that:

(1) Coordination arrangements with appropriate authorities and parties for activities potentially hazardous to civil aircraft, whether these activities are conducted over KSA territory or over the high seas located within Jeddah FIR with the appropriate air traffic services units; and
(2) The coordination must be effected early enough to permit timely promulgation of information regarding the activities in accordance with GACAR Part 175 requirements and Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066).

(c) The objective of the coordination must be to achieve the best arrangements to avoid hazards to civil aircraft and minimize interference with the normal operations of such aircraft. In determining these arrangements, the following must be applied:

(1) The locations or areas, times and durations for the activities must 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 must be kept as small as possible;
(3) Direct communication between the appropriate ATS provider or air traffic services unit (ATSU) and the organization or unit conducting the activities must be provided for use in the event that civil aircraft emergencies or other unforeseen circumstances require discontinuation of the activities.
(4) The communication facilities required under §171.371(b)(2)(i), §171.421(b)(4), and §171.671(g)(4) must 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.

(d) The ATS provider must be responsible for initiating the promulgation of information regarding activities potentially hazardous to civil aircraft in accordance with GACAR Part 175 requirements and

Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066).

(e) Arrangements must be made to permit information relevant to the safe and expeditious conduct of flights of civil aircraft to be promptly exchanged between ATSUs and appropriate military units.

(f) ATSUs must, either routinely or on request, in accordance with locally agreed procedures, provide appropriate military units with pertinent flight plan and other data concerning flights of civil aircraft. In order to eliminate or reduce the need for interceptions, ATS providers must designate any areas or routes where the requirements of GACAR Part 91 concerning flight plans, two-way communications and position reporting apply to all flights to ensure that all pertinent data is available in appropriate ATSUs specifically for the purpose of facilitating identification of civil aircraft.

(g) Special procedures must be established in order to ensure that:

(1) ATSUs are notified if a military unit observes that an aircraft which is, or might be, a civil aircraft is approaching, or has entered, any area in which interception might become necessary;
(2) All possible efforts are made to confirm the identity of the aircraft and to provide it with the navigational guidance necessary to avoid the need for interception;
(3) Initial coordination must be effected through the ATS provider responsible for the airspace over adjacent State(s) for activities potentially hazardous to civil aircraft that are planned and located in these States.

(h) Each ATS provider must ensure that a Safety Risk Assessment (SRA) is conducted, as soon as practicable, for activities potentially hazardous to civil aircraft and that appropriate risk mitigation measures are implemented. Such risk mitigation measures may include, but would not be limited to, airspace restriction or temporary withdrawal of established ATS routes or portions thereof.

(i) Each ATS provider must establish procedures to enable the organization or unit conducting or identifying activities potentially hazardous to civil aircraft to contribute to the safety risk assessment in order to facilitate consideration of all relevant safety significant factors.

(j) If activities potentially hazardous to civil aircraft take place on a regular or continuing basis, civil-military committee is established to ensure that the requirements of all parties concerned are adequately coordinated. The ATS provider must designate representatives to ensure the required coordination in accordance with adopted arrangements.

Note 1.— Guidance on Civil-military coordination can be found in the Civil-Military Cooperation in Air Traffic Management Manual (Doc 10088).
Note 2. — Guidance on safety risk management can be found in the Safety Management Manual

(SMM) (Doc 9859).
Note 3.— Guidance on collaborative decision-making (CDM) processes for safety risk assessment and promulgation through NOTAM that could involve military authorities can be found in the Manual Concerning Safety Measures Relating to Military Activities Potentially Hazardous to Civil Aircraft Operations (Doc 9554).

§ 171.157 Coordination Between ATS Providers and MET Providers.

(a) To ensure that aircraft receive the most up-to-date meteorological information for aircraft operations, arrangements must be made, where necessary, between each ATS provider and each MET provider for ATS personnel:

(1) In addition to using indicating instruments, to report, if observed by ATS personnel or communicated by aircraft, such other meteorological elements as may be agreed upon;
(2) To report as soon as possible to the associated meteorological office meteorological phenomena of operational significance, if observed by ATS personnel or communicated by aircraft, which have not been included in the aerodrome meteorological report;
(3) To report as soon as possible to the associated meteorological office pertinent information concerning pre-eruption volcanic activity, volcanic eruptions and information concerning volcanic ash cloud. In addition, ACCs and FICs must report the information to the associated meteorological watch office and volcanic ash advisory centers (VAACs).

(b) Close coordination must be maintained between ACCs, FICs and associated meteorological watch offices to ensure that information on volcanic ash included in NOTAM and SIGMET messages is consistent.

§ 171.159 Coordination Between ATS Providers and AIS Providers.

(a) To ensure that AIS providers obtain information to enable them to provide up-to-date pre-flight information and to meet the need for in-flight information, arrangements must be made between each ATS provider and each AIS provider for ATS to report to the responsible AIS unit, with a minimum of delay:

(1) Information on aerodrome conditions;
(2) The operational status of associated facilities, services and navigation aids within their area of responsibility;
(3) The occurrence of volcanic activity observed by ATS personnel or reported by aircraft; and
(4) Any other information considered to be of operational significance.

(b) Before introducing changes to the air navigation system, due account must be taken by the services responsible for such changes of the time needed by the AIS provider for the preparation, production and

issuance of relevant material for promulgation. To ensure timely provision of the information to the AIS provider, close coordination between those services concerned is therefore required.

(c) Of particular importance are changes to aeronautical information that affect charts and/or computer-based navigation systems which qualify to be notified by the Aeronautical Information Regulation and Control (AIRAC) system as specified in ICAO Annex 15. The predetermined calendar and cut-off dates for submitting the raw information/data to the AIS Provider must be observed by the ATS Provider as it's based on internationally agreed AIRAC effective dates.

(d) Each ATS provider responsible for the provision of raw aeronautical information/data to the AIS provider must do so while taking into account accuracy and integrity requirements necessary to meet the needs of the end-user of aeronautical data.

Note 1. — Specifications concerning the accuracy and integrity classification of air traffic services-related aeronautical data are contained in PANS-AIM (Doc 10066), Appendix 1.
Note 2. — Requirements for the issue of a NOTAM and ASHTAM are contained in Annex 15, Chapter 6 and detailed specifications for NOTAM, including formats for SNOWTAM and ASHTAM, are contained in the PANS-AIM (Doc 10066).
Note 3. — Reports of volcanic activity comprise the information detailed in Annex 3, Chapter 4.
Note 4. — AIRAC information is distributed by the AIS Provider at least 42 days in advance of the AIRAC effective dates with the objective of reaching recipients at least 28 days in advance of the effective date.
Note 5. — The schedule of the predetermined, internationally agreed AIRAC common effective dates at intervals of 28 days and guidance for the AIRAC use are contained in the Aeronautical Information Services Manual (Doc 8126, Part III, Chapter 3, 3.2.2).

§ 171.161 Coordination in Respect of the Provision of ATC Service: General.

(a) The coordination and transfer of control of a flight between successive ATCUs and control sectors must comply with the ATC service coordination requirements prescribed in this part. ATCUs must, to the extent possible, establish and apply standardized procedures for the coordination and transfer of control of flights, in order, inter alia, to reduce the need for verbal coordination. Such coordination procedures must be specified in letters of agreement (LOA) as prescribed under GACAR § 171.811.

(b) Coordination in cases of aircraft experiencing degradation of RNAV.

(1) In the case of automated messages not containing the information provided in Item 18 of the flight plan, the sending ATCU must inform the receiving ATCU by supplementing the activation message verbally with the phrase "RNAV OUT OF SERVICE" after the call sign of the aircraft concerned.
(2) When a verbal coordination process is being used, the sending ATU unit must include the phrase "RNAV OUT OF SERVICE" at the end of the message.

(c) Coordination in cases of State aircraft without RNAV capability.

(1) In the case of automated messages not containing the information provided in Item 18 of the flight plan, the sending ATCU must inform the receiving ATCU by supplementing the activation message verbally with the phrase “NEGATIVE RNAV” after the call sign of the aircraft concerned.
(2) When a verbal coordination process is being used, the sending ATCU must include the phrase “NEGATIVE RNAV” at the end of the message.

§ 171.163 Coordination in Respect of the Provision of Flight Information Service and Alerting Service.

(a) Where this is deemed necessary by the President or the ATS provider, coordination between ATSUs providing flight information service in adjacent FIRs must be effected in respect of IFR and VFR flights, in order to ensure continued flight information service to such aircraft in specified areas or along specified routes. Such coordination must be effected in accordance with a letter of agreement between the ATSUs concerned as prescribed in GACAR § 171.811.

(b) Where coordination of flights is effected in accordance with (a), this must include transmission of the following information on the flight concerned:

(1) Appropriate items of the current flight plan; and
(2) The time at which last contact was made with the aircraft concerned.

(c) This information must be forwarded to the ATSU in charge of the next FIR in which the aircraft will operate prior to the aircraft entering such FIR.

(d) When so required by agreement between the appropriate ATS providers to assist in the identification of strayed or unidentified aircraft and thereby eliminate or reduce the need for interception, flight plan and flight progress information for flights along specified routes or portions of routes in close proximity to FIR boundaries must also be provided to the ATSUs in charge of the FIRs adjacent to such routes or portions of routes.

(e) In circumstances where an aircraft is experiencing an emergency or has declared minimum fuel, or in any other situation wherein the safety of the aircraft is not assured, the type of emergency and the circumstances experienced by the aircraft must be reported by the transferring unit to the accepting unit and any other ATSU that may be concerned with the flight and to the associated RCCs, if necessary.

§ 171.165 Coordination in Respect of the Provision of Air Traffic Advisory Service.

ATSUs providing air traffic advisory service must apply the coordination procedures specified in GACAR § 171.161 with respect to such aircraft having elected to use this type of service.

§ 171.167 Coordination Between ATSU and Aeronautical Telecommunication Stations.

When so prescribed by the ATS provider in Part 1 of the ATSPM, ATSUs must ensure that the aeronautical telecommunications stations serving the centers concerned are informed regarding transfers of communications contact by aircraft. Unless otherwise provided, information to be made available must comprise the identification of the aircraft (including SELCAL code, when necessary), the route or destination (where necessary), and the expected or actual time of communications transfer.

§ 171.169 Coordination Between ATSU and Aerodrome operator.

(a) Each ATS provider must ensure that each ATSU coordinates and informs the aerodrome operator of the following:

(1) when it becomes apparent that there is a deterioration in the status of the aerodrome or associated facilities;
(2) when it becomes apparent that fix or mobile obstructions may jeopardize the safety of aircraft movements;
(3) when it becomes apparent from reports or observations that there is a hazard to the movement of aircraft on the apron or manoeuvring area.
(4) when flocks of birds or single large ones are seen,
(5) when ground lighting and stop-bars are inoperative;
(6) flight plans of special or private flights.

SUBPART J – FACILITIES AND EQUIPMENT

§ 171.171 General.

(a) Radiotelephony and/or data link must be used in air-ground communications for ATS purposes.

(b) Where RCP specification is used for performance-based communication in accordance with the requirements of Appendix D to this part, ATSUs must, in addition to the requirements specified in (a), be provided with communication equipment which will enable them to provide ATS in accordance with the prescribed RCP specification(s).

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

(d) Except as provided for in (e), each ATS provider must provide communications facilities in support of ATS that comply with ICAO Annex 11, Chapter 6. The level of reliability and availability of communications systems must be such that the possibility of system failures or significant degradations is very remote. Adequate backup facilities must be provided.

Note.— Guidance material and information pertaining to system reliability and availability are contained in Annex 10, Volume I, and the Air Traffic Services Planning Manual (Doc 9426).

(e) Each ATS provider must ensure that -

(1) All communication, navigation and surveillance equipment used by them in the provision of ATS is installed and maintained by an aeronautical telecommunication service provider who has been authorized under GACAR Part 173;
(2) Instructions are issued in Part 2 of the ATSPM that prohibits tampering or interfering with the normal operating status of equipment.
(3) Instructions are issued in Part 2 of the ATSPM which include the following procedures directed to unit personnel detecting an equipment malfunction:

(i) Immediately report the malfunction to the maintenance personnel responsible for corrective action;
(ii) Do not use the equipment if it is apparent that the malfunction could create a hazardous situation.

(4) Procedures exist and are published in Part 2 of the ATSPM directing unit personnel to

coordinate release of equipment for routine maintenance with appropriate maintenance personnel.

(f) Any significant safety-related change to the ATS system, including the implementation of a reduced separation minimum or a new procedure, must only be effected after a safety risk assessment has demonstrated that an acceptable level of safety will be met and users have been consulted. When appropriate, the ATS provider must ensure that adequate provision is made for post-implementation monitoring to verify that the defined level of safety continues to be met.

Note. — GACAR Part 5 and Annex 19 include the safety management provisions applicable to ATS providers. Further guidance is contained in the Safety Management Manual (SMM) (Doc 9859) and associated procedures are contained in the PANS ATM (Doc 4444).

§ 171.173 Facility Requirements.

Each ATS Provider must ensure that the delivery of its ATS services is supported by suitable systems and equipment. As a minimum, the following level of equipment and services must be provided:

(a) Each ATS provider must establish the following facilities that are appropriate to the air traffic services listed in the ATSPM:

(1) aerodrome control towers (TWRs);
(2) approach control facilities (APPs);
(3) area control centers (ACCs);
(4) flight information centers (FICs):
(5) Dedicated training and assessment facilities.

(b) Each ATS provider must ensure that:

(1) all adjacent ATS units are connected in all cases where special circumstances exist;
(2) 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 must be connected with the area control center serving the adjacent area;
(3) the communication facilities between ATS units must 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 must be established instantaneously and for other purposes the communications should normally be established within fifteen seconds.
(4) suitable facilities for automatic recording are provided in all cases where automatic transfer of

data to and/or from air traffic services computers is required.

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.

(c) Except as provided in paragraph (m), each ATS provider that provides an aerodrome control service, or an aerodrome flight information service, must ensure that any TWR, including any temporary TWR or facility is—

(1) Constructed and situated to provide:

(i) The maximum practicable visibility of aerodrome traffic;
(ii) Protection from glare and reflection; and
(iii) Protection from noise.

(2) Safeguarded from any development that would affect the requirements of paragraph (c)(1); and
(3) At solo watch locations, provided with suitable facilities to ensure the minimum possible interruption to, or degradation of, air traffic services and the well-being of staff including suitable rest facilities for the avoidance of fatigue.
(4) provided with air-ground communication facilities enabling direct, rapid, continuous and static-free two-way communications to take place with:

(i) Any appropriately equipped aircraft operating at any distance within 45 km (25 NM) of the aerodrome concerned, in or adjacent to airspace for which the ATS provider has responsibility; and
(ii) Any aircraft, vehicle, and person, on the maneuvering area. Where conditions warrant, separate communication channels must be provided for the control of traffic operating on the manoeuvering area and automatic recording facilities must be provided on all such channels.

(5) provided with the following minimum equipment:

(i) A display system or systems designed to show the disposition of current and pending aerodrome traffic together with ancillary information for individual aircraft;
(ii) A power supply;
(iii) Appropriate and current maps and charts;
(iv) Binoculars;
(v) Clocks meeting the requirements of GACAR § 171.177;
(vi) Log keeping system;
(vii) Outside temperature indicator;

(viii) Altimeter setting indicator meeting the requirements of GACAR § 171.179;
(ix) Signal lamp with green, red, and white functions;
(x) Direct-speech and/or data link communications for ground-ground communications for air traffic services purposes;
(xi) Status monitors for approach and landing aids and any road or rail signaling equipment affecting the use of a runway;
(xii) Visibility and cloud height checkpoints;
(xiii) Voice and, if applicable, data recording equipment meeting the requirements of GACAR § 171.175;
(xiv) Wind direction and wind speed display. The display(s) must 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 must be clearly marked to identify the runway and section of the runway monitored by each sensor;
(xv) An audible emergency alerting system;
(xvi) An AFTN terminal or, if provided for in an ATS letter of agreement, an alternative means of reception and transmission of information normally conveyed by AFTN;
(xvii) If applicable, aerodrome lighting controls panel;
(xviii) Display for runway visual range (RVR) values when RVR values are measured by instrumental means. The display(s) must 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; and
(xix) At aerodromes where the height of cloud base is assessed by instrumental means the TWR must be equipped with display(s) permitting read-out of the current value(s) of the height of cloud base. The displays must 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.

(d) Each ATS provider must ensure that each ACC, each FIC and each APP is provided with the following minimum equipment: :

(1) Air-ground communication facilities enabling direct, rapid, continuous and static-free two-way communications to take place between a unit providing ACC, FIC or APP and appropriately equipped aircraft flying anywhere within the control area(s) or the flight information region or the approach area; and
(2) If applicable, data communication with any aircraft in, or adjacent to, airspace for which the ATS provider has responsibility
(3) Where the unit providing approach control service functions as a separate unit, air-ground communications must be conducted over communication channels provided for its exclusive use;

(4) situation display, where an ATS surveillance service is provided;
(5) A display system or systems designed to show the disposition of current and pending flights together with ancillary information for individual aircraft;
(6) A power supply;
(7) Appropriate and current maps and charts;
(8) Clocks meeting the requirements of GACAR § 171.177;
(9) Log keeping system;
(10) Status monitors as appropriate for navigation, approach, and landing aids;
(11) Direct-speech and/or data link communications for ground-ground communications ;
(12) Voice recording equipment and, if applicable, data recording equipment meeting the requirements of GACAR § 171.175;
(13) An AFTN terminal;
(14) For an approach control operating position, an ILS status monitor at the approach control procedural or approach control surveillance operating position for the aerodrome concerned; and
(15) For an approach control operating position responsible for aircraft on final approach, or aircraft landing or taking off, a wind direction and wind speed display, an RVR display and a cloud height display fed from the same source as the corresponding equipment in the aerodrome control tower.

(e) Each ATS provider must ensure that flight information centers and area control centers have facilities for communications with all adjacent flight information centers and area control centers. These communication facilities must 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.

(f) When so required by agreement between the concerned ATS providers in order to eliminate or reduce the need for interceptions in the event of deviations from assigned track, additional facilities for communications between adjacent flight information centers or area control centers other than those mentioned in (d) must include provisions for direct speech alone, or in combination with data link communications. These communication facilities must permit communications to be established normally within fifteen seconds and be provided with automatic recording.

(g) Each ATS provider must ensure that:

(1) ATS units are 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;
(2) Information on the operational status, and any changes thereto, of radio navigation services and visual aids as referred to in (1) must be received by the appropriate ATS unit(s) on a timely basis consistent with the use of the service(s) and aid(s) involved.

(h) Each ATS provider must establish procedures to ensure that the aeronautical telecommunications equipment required by paragraphs (c) and (d) are operated in accordance with the requirements of GACAR Part 173 Appendix A.

(i) Each ATS provider must establish procedures to ensure that any display system including the situation display used by an air traffic service is positioned with due regard to the relative importance of the information displayed and ease of use by the staff concerned.

(j) The equipment required by paragraphs (c)(4) and (5), and (d), must have a level of reliability, availability, and redundancy, that minimizes the possibility of failure, non-availability, or significant degradation of performance.

(k) Each ATS provider must ensure that the display of operational information meets the criteria as specified in ICAO Doc. 9426 – Air Traffic Services Planning Manual.

(l) Each ATS provider must establish procedures to ensure that the status monitors required by paragraph (c) (5)(xi) and paragraphs (d)(10) and (14) are fitted with—

(1) An aural signal to indicate a change of status; and
(2) A visual indication of the current status.

(m) A temporary aerodrome control tower, a temporary aerodrome flight information tower, a remote aerodrome ATS used as backup facility is not required to be provided with the equipment required under paragraphs (c)(5)(xi), (xvi) and (xvii) if it is impracticable to do alternative and appropriate measures must be taken to:

(1) provide the person providing the air traffic service from the temporary tower with the information that would be available from the equipment required under paragraphs (c)(5)(xi) and (xvi); and
(2) control the airfield lighting if applicable.

(n) Unless otherwise authorized by the President, all meteorological data provided in accordance with GACAR Part 171.173 must satisfy the requirements of GACAR Part 179 and ICAO Annex 3 as applicable.

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.— 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.

§ 171.175 Recording of Voice and Surveillance Circuits.

Unless otherwise authorized by the President, the recording of voice communications and surveillance data used in the provision of an air traffic service must be in accordance with ICAO Annex 11 Chapter 6. In addition, the following specific requirements must apply:

(a) Each ATS provider must ensure that automatic recording facilities are available to record:

(1) all air-ground communication channels used for direct pilot-controller two-way radiotelephony or data link communications used for the provision of air traffic control service.
(2) direct-speech or data link communications between air traffic services units and between air traffic services units and other units as described in §171.301(f), §171.371(c), §171.421(d), and §171.671(g).

(b) Each ATS provider must ensure that recordings of all data and communications as required in (a) are retained in accordance with GACAR §171.857.

(c) Each ATS provider must ensure that all operational voice and surveillance circuits are recorded, and the recorder monitor panel is located in the ATSU if:

(1) No maintenance facility is located at the same site; or
(2) The maintenance facility is not staffed during the operational hours of the ATSU.

(d) Where the ATS recorders are under the responsibility of an ATSU, each ATS provider must ensure that:

(1) All circuits and frequencies on each recorder channel are monitored at least once daily to ensure proper recording level, good voice quality and that the time correlation is functioning correctly;
(2) Recordings are suitably filed with the date and time of use indicated.; and
(3) ATC voice and surveillance recordings must be retained in accordance with GACAR §171.855.

(e) Each ATCU must be equipped with devices that record background communication and the aural environment at air traffic controller workstations and be capable of retaining the information recorded during at least the last twenty-four hours of operation.

(f) These procedures must be published in Part 1 of the ATSPM and any local variations published in Part 2 of the ATSPM.

(j) ATSU Managers/Chiefs must forward a report to GACA if a failure occurs in recorder equipment during a period when an incident is known to have occurred.

§ 171.177 Clocks/Time Used in ATS.

(a) Each ATSU must use Coordinated Universal Time (UTC) expressed in hours and minutes and when required, seconds of the 24-hour day, beginning at midnight (0000).

(b) Each ATS providers must ensure ATSUs are equipped with clocks indicating the time in hours, minutes and seconds, clearly visible from each operating position in the unit concerned.

(c) ATSU clocks and other time recording devices must 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 ATSU, clocks and other time-recording devices must be checked as necessary to ensure correct time to within 1 second of UTC.

(d) The correct time must be obtained from a standard time station or, if not possible, from another unit which has obtained the correct time from such station.

(e) All other procedures for time checks and time adjustments must be published in Part 1 of the ATSPM.

§ 171.179 Altimeter Setting Indicator.

(a) Atmospheric pressure must be measured in Hectopascals and be transmitted to the aircraft when appropriate as published in Part 1 of the ATSPM.

(b) The reading from the altimeter setting indicator must be compared to the weather report from the meteorological office and any discrepancy must be resolved in coordination with the MET provider.

(c) Two independent sources of the current altimeter setting must be provided, at least one of which must be an aneroid barometer or barometric altimeter situated in the visual control room.

§ 171.181 ATS Surveillance System Capabilities.

The suitability of an ATS Surveillance ground system for the provision of an air traffic service must be clearly demonstrated in the system safety case prepared in accordance with the approved ATS Provider's safety management system. In addition, unless otherwise accepted by the President the following specific requirements must apply:

(a) ATS surveillance ground systems must have the capability to receive, process and display, in an integrated manner, data from all the connected sources.

(b) ATS surveillance ground systems such as Radar and ADS-B must provide for the display of safety-related alerts and warnings, including conflict alert, minimum safe altitude warning, conflict prediction and unintentionally duplicated SSR codes and aircraft identification.

(c) ATS surveillance systems, such as primary surveillance radar (PSR), secondary surveillance radar (SSR) and automatic dependent surveillance — broadcast (ADS-B) may be used either alone or in combination in the provision of air traffic services, including in the provision of separation between aircraft, provided:

(1) Reliable coverage exists in the area; and
(2) The probability of detection, the accuracy and the integrity of the ATS surveillance system(s) are satisfactory.

(d) ADS-B may be used alone, including in the provision of separation between aircraft, provided:

(1) Identification of ADS-B-equipped aircraft is established and maintained;
(2) The data integrity measure in the ADS-B message is adequate to support the separation minimum;
(3) There is no requirement for detection of aircraft not transmitting ADS-B; and
(4) There is no requirement for determination of aircraft position independent of the position-determining elements of the aircraft navigation system.

(e) The provision of ATS surveillance services must be limited to specified areas of coverage and must be subject to such other limitations as have been agreed with the President. Adequate information on the operating methods used must be published in KSA AIP, as well as operating practices and/or equipment limitations having direct effects on the operation of the ATS.

(f) The provision of ATS surveillance services must be limited when position data quality degrades below a level as have been agreed with the President.

(g) ATS Surveillance data from primary and secondary radar equipment or other systems (e.g., ADS-B, ADS-C), used as an aid to air traffic services, must be automatically recorded for use in accident and incident investigations, search and rescue, air traffic control and surveillance systems evaluation and training.

§ 171.183 Situation Display.

(a) A situation display providing surveillance information to the controller must, as a minimum, include position indications, map information required to provide ATS surveillance services and, where available, information concerning the identity of the aircraft and the aircraft level.

(b) The ATS surveillance system must provide for a continuously updated presentation of surveillance information, including position indications.

(c) Position indications may be displayed as:

(1) Individual position symbols, e.g., PSR, SSR and ADS-B symbols, or combined symbols;
(2) PSR blips; or
(3) SSR responses.

(d) Where surveillance data quality degrades such that services need to be limited, symbology or other means must be used to provide the controller with an indication of the condition.

(e) Reserved SSR codes, including 7500, 7600 and 7700, operation of IDENT, ADS-B emergency and/or urgency modes, safety-related alerts and warnings as well as information related to automated coordination must be presented in a clear and distinct manner, providing for ease of recognition.

(f) Labels must, as a minimum, include information relating to the identity of the aircraft, e.g. SSR code or aircraft identification and, if available, pressure-altitude-derived level information. This information may be obtained from SSR Mode A, SSR Mode C, SSR Mode S and/or ADS-B.

(g) Labels must be associated with their position indications in a manner precluding erroneous identification by or confusion on the part of the controller. All label information must be presented in a clear and concise manner.

§ 171.185 Performance of Radar Equipment.

Each ATS provider and ATCO must ensure that:

(a) The performance of the radar equipment is checked in accordance with operating instructions provided by the aeronautical telecommunication service provider under GACAR Part 173; and

(b) The technical instruction issued in respect to each piece of radar equipment is complied with.

§ 171.187 Radar and Automated Systems.

Each ATS provider must-

(a) Ensure that information concerning equipment performance, obtained from flight checks and quality of performance checks, is made available to controllers and published in Part 2 of the ATSPM and develop arrangements or procedures that use the capabilities of automated systems to process and display flight data.

(b) Develop procedures that ensure the integrity of flight data exchanged between units. These procedures must include the requirement to:

(1) Forward revised flight data;
(2) Obtain appropriate information if the flight data received from another unit cannot be processed or is incomplete; and
(3) Define co-ordination procedures to inform control sectors of revised or incomplete flight data.

§ 171.189 Hand-Offs.

(a) If radar hand-offs are to be used, the ATS provider must publish applicable procedures in Parts 1 and 2 of the ATSPM and, through coordination with other units, if necessary, ensure that:

(1) Each of the radar displays to be used provides reliable radar coverage for a sufficient distance beyond the proposed hand-off point;
(2) Both displays present radar data in the hand-off area with an accuracy that meets required tolerances; and
(3) The hand-off points and any special conditions or procedures are defined.

(b) The ATS provider may develop arrangements which omit the requirement for verbal hand-offs between

IFR units subject to detailed procedures established between the units.

§ 171.191 Automated System Failures.

Each ATS provider must ensure that automated systems inform operational personnel immediately of any failure of an automated system component that may limit their use of the equipment.

§ 171.193 Performance of Backup Communications.

Each ATS provider must establish and publish in Part 2 of the ATSPM procedures to ensure that operational personnel check all backup radios, stand-alone transceivers and speed dial phones for functionality at regular intervals.

§ 171.195 Interruptions to NAVAIDS or Frequencies.

Each ATS provider must ensure that procedures for unit personnel to determine the circumstances under which navigational aids or frequencies must be permitted to be shutdown are published in Part 2 of the ATSPM.

§ 171.197 Opening and Closing Control Positions.

Each ATS provider must establish instructions in Parts 1 and 2 of the ATSPM for opening and closing of control positions. Such instructions must take into account the difference between the individual ATSU.

§ 171.199 Fire Prevention and Facility Evacuation.

Each ATS provider must-

(a) Prepare and publish in Part 2 of the ATSPM a fire prevention and protection plan and must ensure that all unit personnel receive direction with regard to design and operational characteristics of fire detection, alarm and suppression system.

(b) Develop and publish in Part 2 of the ATSPM procedures and processes that in the event of forced evacuation of an ATSU ensure that:

(1) All aircraft are provided with the minimum service necessary to maintain flight safety;
(2) Personnel can be evacuated safely;

(3) Evacuation plans and procedures are viable and satisfactory; and

(4) A periodic review of evacuation plans and any necessary updates and changes performed.

(c) Periodically conduct emergency evacuation test drills. Such test drills must be conducted in such a way so as not to interfere with normal operation.

SUBPART K - CAPACITY AND AIR TRAFFIC FLOW MANAGEMENT

§ 171.201 Capacity Management.

(a) Air traffic flow management (ATFM) must be implemented for airspace where air traffic demand at times exceeds, or is expected to exceed, the declared capacity of the air traffic control services concerned. The ATFM must be implemented on the basis of regional air navigation agreements or, if appropriate, through multilateral agreements. Such agreements must make provision for common procedures and common methods of capacity determination.

(b) Each ATS provider must ensure that every effort is made to provide sufficient capacity to cater to both normal and peak traffic levels; however, in implementing any measures to increase capacity, ATSU management must ensure, in accordance with the procedures specified in their SMS under GACAR Part 5 and the requirements of this subpart, that safety levels are not jeopardized.

(c) Each ATS provider must ensure that the number of aircraft provided with an ATC service must not exceed that which can be safely handled by the ATSU concerned under the prevailing circumstances. In order to define the maximum number of flights, which can be safely accommodated, ATSU Management must assess and declare the ATC capacity for control areas, for control sectors within a control area and for aerodromes; such figures must be published in Part 2 of the ATSPM.

(d) ATC capacity must be expressed as the maximum number of aircraft which can be accepted over a given period of time within the airspace, airway or at the aerodrome concerned.

(e) When it becomes apparent to an ATCU that traffic additional to that already accepted cannot be accommodated within a given period of time at a particular location or in a particular area, or can only be accommodated at a given rate, that unit must so advise the air traffic flow management (ATFM) unit, where established, as well as, when appropriate, any ATSUs concerned. flight crews of aircraft destined to the location or area in question and operators concerned must also be advised of the delays expected or the restrictions that will be applied.

Note. — Operators concerned will normally be advised, in advance where possible, of restrictions imposed by the air traffic flow management unit when such is established.

§ 171.203 Capacity Assessment.

In assessing capacity values each ATS provider must take into account, as a minimum, the following factors:

(a) The level and type of ATM provided;

(b) The structural complexity of the control area, the control sector or the aerodrome concerned, runway acceptance rates;

(c) Controller workload, including control and coordination tasks to be performed;

(d) The types of communications, navigation and surveillance systems in use, their degree of technical reliability and availability as well as the availability of back-up systems and/or procedures;

(e) Availability of ATC systems providing controller support and alert functions; and

(f) Any other factor or element deemed relevant to controller workload.

§ 171.205 Regulation of ATC Capacity and Traffic Volumes.

(a) Each ATS provider must implement procedures to vary the number of operational sectors or working positions to meet the prevailing and anticipated demand. Applicable procedures must be contained in Part 2 of the ATSPM for the unit.

(b) In case of particular events, which have a negative impact on the declared capacity of an airspace or aerodrome, the capacity of the airspace or aerodrome concerned must be reduced accordingly for the required time period.

(c) To ensure that safety is not compromised whenever the traffic demand in the airspace or at an aerodrome is forecast to exceed the available ATC capacity, measures must be implemented by each ATS provider to regulate traffic volumes accordingly.

§ 171.207 Enhancements of ATC Capacity.

(a) Each ATS provider must:

(1) Periodically review ATS capacities in relation to traffic demand; and
(2) Provide for flexible use of airspace in order to improve the efficiency of operations and increase capacity.

(b) In the event that traffic demand regularly exceeds ATC capacity, resulting in continuing and frequent traffic delays or it becomes apparent that forecast traffic demand will exceed capacity values, each ATS provider must, as far as practicable:

(1) Implement steps aimed at maximizing the use of the existing system capacity; and
(2) Develop plans to increase capacity to meet the actual or forecast demand.

§ 171.209 Flexible Use of Airspace.

(a) Each ATS provider must, through the establishment of agreements, arrangements and procedures, make provision for the flexible use of airspace reserved for military or other special activities in order to increase airspace capacity and to improve the efficiency and flexibility of aircraft operations. The procedures must permit all airspace users to have safe access to such reserved airspace.

(b) When applicable, the agreements for the flexible use of all airspace must be established based on Regional Air Navigation Agreements which must be coordinated with GACA as prescribed in GACAR § 171.23.

(c) Agreements and procedures providing for a flexible use of airspace must specify, *inter alia*:

(1) the horizontal and vertical limits of the airspace concerned;
(2) the classification of any airspace made available for use by civil air traffic;
(3) units or authorities responsible for transfer of the airspace;
(4) conditions for transfer of the airspace to the ATC unit concerned;
(5) conditions for transfer of the airspace from the ATC unit concerned;
(6) periods of availability of the airspace reserved for military or other special activities;
(7) any limitations on the use of the airspace concerned; and
(8) any other relevant procedures or information.

§ 171.211 Air Traffic Flow Management (ATFM).

(a) Where required by the President, or where established by an ATS provider, ATFM must be implemented based on the terms and conditions of Regional Air Navigation Agreements.

(b) Where practicable, the ATFM service within a region or other defined area, must be developed and implemented as a centralized ATFM organization, supported by flow management positions established at each Area Control Center (ACC) within the region or area of applicability.

SUBPART L - AIR TRAFFIC CONTROL SERVICES: GENERAL

§ 171.231 Introduction.

(a) ATSU Managers/Chiefs must include in the ATSPM those policies, standards, criteria and information required for the administration and management of all ATSUs.

(b) ATSU Managers/Chiefs and supervisory personnel must be familiar with all parts of the ATSPM and to have an in-depth knowledge of those provisions that pertain to their management and supervisory responsibilities.

(c) ATSU Managers/Chiefs and supervisory personnel must use their best judgment for the resolution of a situation for which direction is not provided. ATSU Managers/Chiefs must consult with the GM-ATS when dealing with situations which may set precedents or have ramifications on other units.

§ 171.233 Application of ATC.

(a) Air traffic control service must be provided to all:

(1) IFR flights in airspace designated as Classes A, B, C, D and E;
(2) VFR flights in airspace designated as Classes B, C and D;
(3) Special VFR (SVFR) flights; and
(4) Aerodrome traffic at controlled aerodromes.

(b) Each ATS provider must ensure that clearances issued by ATCUs provide separation:

(1) Between all flights in airspace designated as Classes A and B;
(2) Between IFR flights in airspace designated as Classes C, D and E;
(3) Between IFR flights and VFR flights in airspace designated as Class C;
(4) Between IFR flights and SVFR flights; and
(5) Between SVFR flights,

except that, when requested by an aircraft and if so, prescribed by the ATS provider for the cases listed under paragraph (b)(2) above in airspace designated as Classes D and E, a flight may be cleared without separation being so provided in respect of a specific portion of the flight conducted in visual meteorological conditions.

(c) Separation provided must be in accordance with the separation minima and standards prescribed in

Subpart R.

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

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

(f) Where the type of separation minimum used to separate two aircraft cannot be maintained, another type of separation or another minimum must be established prior to the time when the current separation minimum would be infringed.

§ 171.235 Provision of ATC Service.

The parts of ATC service described in GACAR § 171.7 must be provided by the various units as follows:

(a) *Area control service.*

(1) By an Area Control Center (ACC); or
(2) By the unit providing approach control service in a control zone or in a control area of limited extent which is designated primarily for the provision of approach control service and where no area control center is established.

(b) *Approach control service.*

(1) By an aerodrome control tower or an Area Control Center when it is necessary or desirable to combine under the responsibility of one unit the functions of the approach control service with those of the aerodrome control service or the area control service;
(2) By an APP when it is necessary or desirable to establish a separate unit.

(c) *Aerodrome control service.*

(1) By an aerodrome control tower.

Note. — The task of providing specified services on the apron, e.g., apron management service, may be assigned to an aerodrome control tower or to a separate unit.

§ 171.237 Operation of ATC Service.

(a) Each ATS provider must ensure that in order to provide ATC service, an ATCU must:

(1) Be provided with information on the intended movement of each aircraft, or variations therefrom, and with current information on the actual progress of each aircraft;

(2) Determine from the information received, the relative positions of known aircraft to each other;

(3) Issue clearances and information for the purpose of preventing collision between aircraft under its control and expediting and maintaining an orderly flow of traffic;

(4) Coordinate clearances as necessary with other units:

(i) Whenever an aircraft might otherwise conflict with traffic operated under the control of such other units;

(ii) Before transferring control of an aircraft to such other units.

(b) Information on aircraft movements, together with a record of ATC clearances issued to such aircraft, must be so displayed as to permit ready analysis to maintain an efficient flow of air traffic with adequate separation between aircraft.

§ 171.239 Division of Control Responsibility.

(a) Each ATS provider must designate the area of responsibility of each ATCU, and when applicable, for individual sectors within an ATCU.

(b) A controlled flight must be under the control of only one fn at any given time.

(c) Responsibility for the control of all aircraft operating within a given block of airspace must be vested in only one ATCU. However, control of an aircraft or groups of aircraft may be delegated to other units provided that the required coordination, as published in unit procedures, has been effected.

§ 171.241 Transfer of Control.

(a) Except as provided for in (b), each ATS provider must ensure that the place, time and coordination of transfer of control between ATCUs comply with the Standards and Recommended Practices prescribed by

the International Civil Aviation Organization in Chapter 3, paragraph 3.6 of ICAO Annex 11 and related requirements in Chapter 4, paragraph 4.3 of ICAO Doc. 4444 (PANS-ATM).

(b) Each ATS provider must-

(1) Stipulate procedures for the transfer of control from one ATSU to the next unit whether internally or externally.

(2) Determine procedures for an ATSU in acceptance in the transfer of control. Such procedures must be published in Part 1 of the ATSPM.

§ 171.243 Responsibility in Respect of Military Traffic.

(a) Certain military flights require a degree of operational freedom, which is not consistent with the application of ATC procedures. To ensure flight safety, the military authorities are required to inform ATC prior to operating such flights in airspace under the jurisdiction of the ATS provider.

(b) Reduced separation minima necessary to accomplish operational freedom for military flights may not be initiated by ATC, but may be authorized when so requested. However, ATC is then only responsible for separating civil traffic from such military units and any reduced separation must be applicable only between individual military aircraft forming part of such units and not between military and civil aircraft.

(c) When necessary, temporary airspace reservations may be established for certain military operations. The military authority is responsible for coordinating notifications of airspace reservations.

§ 171.245 Acceptance of Flight Plans.

The first ATSU receiving a flight plan, or change thereto, must:

(a) Check it for compliance with the format and data conventions;

(b) Check it for completeness and, to the extent possible, for accuracy;

(c) Take action, if necessary, to make it acceptable to the air traffic services; and

(d) Indicate acceptance of the flight plan or change thereto, to the originator.

§ 171.247 Position Reporting.

If a position report is not received at the expected time, subsequent control must not be based on the assumption that the estimated time is accurate. Immediate action must be taken to obtain the report if it is likely to have any bearing on the control of other aircraft.

§ 171.249 Reporting of Operational and Meteorological Information.

(a) When receiving special air-reports by data link communications, ATSUs must forward them without delay to their associated meteorological watch office and the WAFCs.

(b) When receiving special air-reports by voice communications, ATSUs must forward them without delay to their associated meteorological watch offices.
watch offices.

§ 171.251 Altimeter Setting Procedures.

(a) Expression of vertical position of aircraft.

(1) For flights in the vicinity of aerodromes and within terminal control areas the vertical position of aircraft must, except as provided for in (b), be expressed in terms of altitudes at or below the transition altitude and in terms of flight levels at or above the transition level. While passing through the transition layer, vertical position must be expressed in terms of flight levels when climbing and in terms of altitudes when descending. The Transition layer is the airspace between the transition altitude and the transition level.

(2) The transition level shall be located at least a nominal 1000 ft above the transition altitude to permit the transition altitude and the transition level to be used concurrently in cruising flight, with vertical separation ensured.

(3) When an aircraft which has been given clearance to land is completing its approach using atmospheric pressure at aerodrome elevation (QFE), the vertical position of the aircraft must be expressed in terms of height above aerodrome elevation during that portion of its flight for which QFE may be used, except that it must be expressed in terms of height above runway threshold elevation:

(i) For instrument runways, if the threshold is 2 m (7 ft) or more below the aerodrome elevation; and

(ii) For precision approach runways.

(4) For flights en-route, the vertical position of aircraft must be expressed in terms of:

(i) Flight levels at or above the lowest usable flight level; and

(ii) Altitudes below the lowest usable flight level; except where, on the basis of Regional Air Navigation Agreements, a transition altitude has been established for a specified area, in which case the provisions of (a) must apply.

(b) *Determination of the transition level.*

(1) The appropriate ATSU must establish the transition level to be used in the vicinity of the aerodrome(s) concerned and, when relevant, the terminal control area (TMA) concerned, for the appropriate period of time on the basis of QNH (altimeter subscale setting to obtain elevation when on the ground) reports and forecast mean sea level pressure, if required. Each ATS provider must define the procedures that shall be considered in the establishment of the transition level.
(2) The transition level must be the lowest flight level available for use above the transition altitude established for the aerodrome(s) concerned and shall be located at least a nominal 1 000 ft above the transition altitude. Where a common transition altitude has been established for two or more aerodromes which are so closely located as to require coordinated procedures, the appropriate ATSU must establish a common transition level to be used at any given time in the vicinity of the aerodrome and, when relevant, in the TMA concerned.

(c) *Minimum cruising level for IFR flights.*

(1) Except when specifically authorized in the ATSPM, cruising levels below the minimum flight altitudes established under Subpart H must not be assigned.
(2) ATCUs must, when circumstances warrant it, determine the lowest usable flight level or levels for the whole or parts of the control area for which they are responsible, use it when assigning flight levels and pass it to pilots on request.

(d) *Provision of altimeter setting information.*

(1) Appropriate ATSUs must at all times have available for transmission to aircraft in flight, on request, the information required to determine the lowest flight level which will ensure adequate terrain clearance on routes or segments of routes for which this information is required.

(2) FICs and ACCs must have available for transmission to aircraft, on request, an appropriate number of QNH reports or forecast pressures for the FIRs and control areas for which they are responsible, and for those adjacent.

(3) The flight crew must be provided with the transition level in due time prior to reaching it during descent. This may be accomplished either by voice communications, ATIS broadcast or data link.

(4) The transition level must be included in approach clearances or when requested by the pilot.

(5) A QNH altimeter setting must be included in the descent clearance when first cleared to an altitude below the transition level, in approach clearances or clearances to enter the traffic circuit, and in taxi clearances for departing aircraft, except when it is known that the aircraft has already received the information.

(6) A QFE altimeter setting must be provided to aircraft on request or on a regular basis in accordance with local arrangements; it must be the QFE for the aerodrome elevation except for:

(i) Non-precision approach runways, if the threshold is 2 m (7 ft) or more below the aerodrome elevation; and

(ii) Precision approach runways; in which cases the QFE for the relevant runway threshold must be provided.

(7) Altimeter settings provided to aircraft must be rounded down to the nearest lower whole hectopascal.

§ 171.253 Presentation and Uploading of Flight Plan and Control Data.

(a) *General*. Each ATS provider must establish provisions and procedures for the presentation to controllers, and subsequent updating, of flight plan and control data for all flights being provided with a service by an ATS unit. Provision must also be made for the presentation of any other information required or desirable for the provision of ATS.

(b) *Information and data to be presented.*

(1) Sufficient information and data must be presented in such a manner as to enable the controller to have a complete representation of the current air traffic situation within the controller's area of responsibility and, when relevant, movements on the maneuvering area of aerodromes. The

presentation must be updated in accordance with the progress of aircraft, in order to facilitate the timely detection and resolution of conflicts as well as to facilitate and provide a record of coordination with adjacent ATSUs and control sectors.
(2) An appropriate representation of the airspace configuration, including significant points and information related to such points, must be provided. Data to be presented must include relevant information from flight plans and position reports as well as clearance and coordination data. The information display may be generated and updated automatically, or the data may be entered and updated by authorized personnel.
(3) Requirements regarding other information to be displayed, or to be available for display, must be specified in Part 1 of the ATSPM.

(c) *Presentation of information and data.*

(1) The required flight plan and control data may be presented through the use of paper flight progress strips or electronic flight progress strips, by other electronic presentation forms or by a combination of presentation methods.
(2) The method(s) of presenting information and data must be in accordance with Human Factors principles. All data, including data related to individual aircraft, must be presented in a manner minimizing the potential for misinterpretation or misunderstanding.
(3) Means and methods for manually entering data in ATC automation systems must be in accordance with Human Factors principles.
(4) When flight progress strips (FPS) are used, there must be at least one individual FPS for each flight. The number of FPS for individual flights must be sufficient to meet the requirements of the ATSU concerned. Procedures for annotating data and provisions specifying the types of data to be entered on FPS, including the use of symbols, must be specified in Part 1 of the ATSPM.
(5) Data generated automatically must be presented to the controller in a timely manner. The presentation of information and data for individual flights must continue until such time as the data is no longer required for the purpose of providing control, including conflict detection and the coordination of flights, or until terminated by the controller.

§ 171.261 Procedures for Airborne Collision Avoidance System (ACAS).

(a) The procedures to be applied for the provision of ATC to aircraft equipped with ACAS must be identical to those applicable to non-ACAS equipped aircraft.

(b) When a pilot reports a maneuver induced by an ACAS resolution advisory (RA), the controller must not attempt to modify the aircraft flight path until the pilot reports returning to the terms of the current air traffic control instruction or clearance but must provide traffic information as appropriate. The controller

must resume responsibility for providing separation for all the affected aircraft when:

(1) The controller acknowledges a report from the flight crew that the aircraft has resumed the current clearance; or
(2) The controller acknowledges a report from the flight crew that the aircraft is resuming the current clearance and issues an alternative clearance which is acknowledged by the flight crew.

(c) Each ATS provider must publish phraseologies for controllers to be used in response to ACAS reports in Part 1 of the ATSPM.

(d) Following an RA event or other significant ACAS event, ATCOs must complete an ACAS report in accordance with the AIB notification requirements. These reporting procedures must be detailed in Part 1 of the ATSPM.

§ 171.263 Visual Flight Rules (VFR).

Rules pertaining to the operation of civil VFR flights within the KSA as prescribed in GACAR Part 91 must be published in Part 1of the ATSPM.

§ 171.265 Instrument Flight Rules (IFR).

Rules pertaining to the operation of civil IFR flights within the KSA as prescribed in GACAR Part 91 must be published in Part 1of the ATSPM.

§ 171.267 Change from IFR to VFR Flight.

(a) Change from IFR flight to VFR flight is prohibited unless a message initiated by the pilot in command containing the specific expression “canceling my IFR flight plan”, together with the changes, if any, to be made to the current flight plan, is received by an ATS unit. The cancellation request must be acknowledged.

Note- No invitation to change from IFR flight to VFR flight shall be made by ATC either directly or by inference.

(b) When an ATSU is in possession of information that instrument meteorological conditions are likely to be encountered along the route of flight, a pilot changing from IFR flight to VFR flight must, if practicable, be so advised.

(c) An ATCU receiving notification of an aircraft's intention to change from IFR to VFR flight must, as soon as practicable thereafter, so inform all other ATSUs to whom the IFR flight plan was addressed, except those units through whose regions or areas the flight has already passed.

(d) Details of such procedures must be published in Part 1 of the ATSPM.

Note- Cancelling an IFR flight in Class A airspace is not possible and cancelling an IFR flight in Class E airspace simultaneously cancels the provision of an Air Traffic Control Service.

§ 171.268 Loss of Vertical Navigation Performance Required for Reduced Vertical Separation Minimum (RVSM).

(a) *Degradation of aircraft equipment – pilot reported.*

(1) When informed by the pilot of an RVSM-approved aircraft operating in the RVSM airspace that the aircraft's equipment no longer meets the RVSM requirements, the ATCU must consider the aircraft as non- RVSM approved.
(2) The ATCU must take action immediately to provide a minimum vertical separation of 2000 ft or an appropriate horizontal separation from all other aircraft concerned that are operating in the RVSM airspace. An aircraft rendered non-RVSM approved must normally be cleared out of the RVSM airspace by the ATCU when it is possible to do so.
(3) The first ACC to become aware of a change in an aircraft's RVSM status must coordinate with adjacent ACCs, as appropriate.

(b) *Severe turbulence – not forecast.*

(1) When an aircraft operating in RVSM airspace encounters severe turbulence due to weather or wake vortex that the pilot believes will impact the aircraft's capability to maintain its cleared flight level, ATC must establish either an appropriate horizontal separation or an increased minimum vertical separation.
(2) ATC must, to the extent possible, accommodate pilot requests for flight level and/or route changes and must pass on traffic information as required.
(3) ATC must solicit reports from other aircraft to determine whether RVSM should be suspended entirely or within a specific flight level band and/or area.
(4) The ACC suspending RVSM must coordinate such suspension(s) with, and any required adjustments to, sector capabilities with adjacent ACCs, as appropriate, to ensure an orderly progression to the transfer of traffic.

(c) *Severe turbulence – forecast.*

(1) When a meteorological forecast is predicting severe turbulence, ATC must determine whether RVSM should be suspended and, if so, for how long and for which specific flight level(s) and/or area.
(2) In cases where RVSM will be suspended, the ACC suspending RVSM must coordinate with adjacent ACCs with regard to the flight levels appropriate for the transfer of traffic, unless a contingency flight level allocation scheme has been determined by LOA. The ACC suspending RVSM must also coordinate applicable sector capabilities with adjacent ACCs as appropriate.

§ 171.269 Language Use Between Air Traffic Control Units.

Except when communications between ATCUs are conducted in a mutually agreed language, the English language must be used for such communications.

§ 171.270 Communication Congestion.

If communication congestion is such that the controller cannot transmit quickly to the aircraft he needs to, then he must ensure separation instructions are transmitted first.

§ 171.271 Contingency Arrangements.

(a) Each ATS provider must-develop and promulgate in Part 1 of the ATSPM contingency plans for implementation in the event of disruption, or potential disruption, of ATS and related supporting services in the airspace for which they are responsible for the provision of such services. Such contingency plans must be developed in close coordination with the ATS providers responsible for the provision of services in adjacent portions of airspace and with airspace users concerned. The development, promulgation and implementation of contingency plans must comply with the requirements of Appendix B to this part.

(b) Except as provided for in (c), each ATS provider must ensure that the contingency procedures comply with the standards prescribed by the International Civil Aviation Organization in ICAO Doc. 4444 (PANS-ATM) and as supplemented or modified by ICAO Regional Supplemental Procedures as specified in ICAO Doc. 7030.

(c) Each ATS provider must ensure that local contingency arrangements are developed in coordination with aeronautical telecommunication service provider operating under GACAR Part 173 and relevant parties.

§ 171.272 Contingency Procedures.

(a) Complete radiocommunications failure.

(1) ATC contingencies related to communications, including circumstances preventing a controller from communicating with aircraft under control, may be caused by either a failure of ground radio equipment, a failure of airborne equipment, or by the control frequency being inadvertently blocked by an aircraft transmitter. The duration of such events may be for prolonged periods and appropriate action to ensure that the safety of aircraft is not affected must be taken immediately.
(2) In the event of complete failure of the ground radio equipment used for ATC, the controller must:

(i) Where aircraft are required to keep a listening watch on the emergency frequency 121.5 MHz, attempt to establish radiocommunications on that frequency;
(ii) Without delay inform all adjacent control positions or ATC units, as applicable, of the failure;
(iii) Appraise such positions or units of the current traffic situation;
(iv) If practicable, request their assistance, in respect of aircraft which may establish communications with those positions or units, in establishing separation between and maintaining control of such aircraft; and
(v) Instruct adjacent control positions or ATC units to hold or re-route all controlled flights outside the area of responsibility of the position or ATC unit that has experienced the failure until such time that the provision of normal services can be resumed.

(3) In order to reduce the impact of complete ground radio equipment failure on the safety of air traffic, each ATS provider must establish contingency procedures to be followed by control positions and ATC units in the event of such failures. Where feasible and practicable, such contingency procedures must provide for the delegation of control to an adjacent control position or ATC unit in order to permit a minimum level of services to be provided as soon as possible, following the ground radio failure and until normal operations can be resumed.

(b) *Blocked frequency.*

(1) An ATS provider must establish procedures to ensure that in the event that a control frequency is inadvertently blocked by an aircraft transmitter, the following additional steps are taken:

(i) Attempt to identify the aircraft concerned;
(ii) If the aircraft blocking the frequency is identified, attempts must be made to establish communication with that aircraft, e.g., on the emergency frequency 121.5 MHz, by SELCAL,

through the aircraft operator's company frequency if applicable, on any VHF frequency designated for air-to-air use by flight crews or any other communication means or, if the aircraft is on the ground, by direct contact;
(iii) If communication is established with the aircraft concerned, the flight crew must be instructed to take immediate action to stop inadvertent transmissions on the affected control frequency.

(c) *Unauthorized use of ATC frequency.*

(1) Instances of false and deceptive transmissions on ATC frequencies which may impair the safety of aircraft can occasionally occur. Each ATS provider must establish procedures to ensure that in the event of such occurrences, the ATC unit concerned must:

(i) Correct any false or deceptive instructions or clearances which have been transmitted;
(ii) Advise all aircraft on the affected frequency(ies) that false and deceptive instructions or clearances are being transmitted;
(iii) Instruct all aircraft on the affected frequency(ies) to verify instructions and clearances before taking action to comply;
(iv) If practical, instruct aircraft to change to another frequency; and
(v) If possible, advise all aircraft affected when the false and deceptive instructions or clearances are no longer being transmitted.

(2) Flight crews must challenge or verify with the ATC unit concerned any instruction or clearance issued to them which they suspect may be false or deceptive.
(3) When the transmission of false or deceptive instructions and clearances is detected, the ATS provider must take all necessary action to have the transmitter located and the transmission terminated.

(d) *Emergency separation.*

(1) Each ATS provider must establish procedures relating to emergency separation as follows:

(i) If, during an emergency situation, it is not possible to ensure that the applicable horizontal separation can be maintained, emergency separation of half the applicable vertical separation minimum may be used, i.e. 500 ft between aircraft in airspace where a vertical separation minimum of 1000 ft is applied, and 1000 ft between aircraft in airspace where a 2 000 ft vertical separation minimum is applied.
(ii) When emergency separation is applied the flight crews concerned must be advised that emergency separation is being applied and informed of the actual minimum used. Additionally,

all flight crews concerned must be provided with essential traffic information.

(e) *Short-term conflict alert (STCA) procedures.*

(1) The generation of short-term conflict alerts is a function based on surveillance data, integrated into an ATC system. The objective of the STCA function is to assist the controller in preventing collision between aircraft by generating, in a timely manner, an alert of a potential or actual infringement of separation minima. In the STCA function the current and predicted three-dimensional positions of aircraft with pressure-altitude reporting capability are monitored for proximity. If the distance between the three-dimensional positions of two aircraft is predicted to be reduced to less than the defined applicable separation minima within a specified time period, an acoustic and/or visual alert must be generated to the controller within whose jurisdiction area the aircraft is operating.
(2) Local instructions concerning use of the STCA function must be published in Part 2 of the ATSPM and must specify, inter alia:

(i) The types of flight which are eligible for generation of alerts;
(ii) The sectors or areas of airspace within which the STCA function is implemented;
(iii) The method of displaying the STCA to the controller;
(iv) In general terms, the parameters for generation of alerts as well as alert warning time;
(v) The volumes of airspace within which STCA can be selectively inhibited and the conditions under which this will be permitted;
(vi) Conditions under which specific alerts may be inhibited for individual flights; and
(vii) Procedures applicable in respect of volume of airspace or flights for which STCA or specific alerts have been inhibited.

(3) In the event an STCA is generated in respect of controlled flights, the controller must, without delay, assess the situation and, if necessary, take action to ensure that the applicable separation minimum will not be infringed or will be restored;
(4) Following the generation of an STCA where a separation minimum was infringed, controllers must be required to complete an air traffic incident report;
(5) An ATS provider must retain electronic records of all alerts generated. The data and circumstances pertaining to each alert must be analyzed to determine whether an alert was justified or not. Non-justified alerts, e.g. when visual separation was applied, may be ignored.
A statistical analysis must be made of justified alerts in order to identify possible shortcomings in airspace design and ATC procedures as well as to monitor overall safety levels.

(f) *Procedures in regard to aircraft equipped with airborne collision avoidance systems (ACAS).*

(1) An ATS provider must ensure that the procedures to be applied for the provision of air traffic services to aircraft equipped with ACAS are identical to those applicable to non-ACAS equipped aircraft. In particular, the prevention of collisions, the establishment of appropriate separation and the information which might be provided in relation to conflicting traffic and to possible avoiding action must conform with the normal ATS procedures and must exclude consideration of aircraft capabilities dependent on ACAS equipment.
(2) When a pilot reports an ACAS resolution advisory (RA), the controller must not attempt to modify the aircraft flight path until the pilot reports “Clear of Conflict”.
(3) Once an aircraft departs from its ATC clearance or instruction in compliance with an RA, or a pilot reports an RA, the controller ceases to be responsible for providing separation between that aircraft and any other aircraft affected as a direct consequence of the manoeuvre induced by the RA. The controller must only resume responsibility for providing separation for all the affected aircraft when:

(i) The controller acknowledges a report from the flight crew that the aircraft has resumed the current clearance; or
(ii) The controller acknowledges a report from the flight crew that the aircraft is resuming the current clearance and issues an alternative clearance which is acknowledged by the flight crew.

(4) Each ATS provider must ensure that air traffic controllers are provided training in the application of ACAS events in accordance with the Airborne Collision Avoidance System (ACAS) Manual (ICAO Doc 9863).
(5) Each ATS provider must ensure that the performance of ACAS in the ATC environment is monitored.
(6) Following a significant ACAS event, controllers must complete an air traffic incident report.
(7) Phraseologies relating to the operation of ACAS must be consistent with the phraseologies at PANS-ATM (ICAO Doc 4444) Chapter 12 Section 12.3.1.2.

(g) *Minimum safe altitude warning (MSAW) procedures.*

(1) The generation of minimum safe altitude warnings is a function of an ATC radar data-processing system. The objective of the MSAW function is to assist in the prevention of controlled flight into terrain accidents by generating, in a timely manner, a warning of the possible infringement of a minimum safe altitude. In the MSAW function, the reported levels from aircraft with pressure-altitude reporting capability are monitored against defined minimum safe altitudes. When the level of an aircraft is detected or predicted to be less than the applicable minimum safe altitude, an acoustic and visual warning must be generated to the controller within whose jurisdiction area the aircraft is operating.
(2) Local instructions concerning use of the MSAW function must be published in Part 2 of the

ATSPM and must specify:

(i) The types of flight which are eligible for generation of MSAW;

(ii) The sectors or areas of airspace for which MSAW minimum safe altitudes have been defined and within which the MSAW function is implemented;

(iii) The values of the defined MSAW minimum safe altitudes;

(iv) The method of displaying the MSAW to the controller;

(v) The parameters for generation of MSAW as well as warning time; and

(vi) Conditions under which the MSAW function may be inhibited for individual aircraft tracks as well as procedures applicable in respect of flights for which MSAW has been inhibited.

(3) In the event an MSAW is generated in respect of a controlled flight, the following action must be taken without delay:

(i) If the aircraft is being vectored, the aircraft must be instructed to climb immediately to the applicable safe level and, if necessary to avoid terrain, be assigned a new heading;
(ii) In other cases, the flight crew must immediately be advised that a minimum safe altitude warning has been generated and be instructed to check the level of the aircraft.

(4) Following an MSAW event, in the event that a minimum safe altitude was unintentionally infringed with a potential for controlled flight into terrain by the aircraft concerned, controllers must complete an air traffic incident report.

(h) Change of radiotelephony call sign for aircraft.

(1) An ATC unit may instruct an aircraft to change its type of RTF call sign, in the interests of safety, when similarity between two or more aircraft RTF call signs are such that confusion is likely to occur.
(2) Any such change to the type of call sign must be temporary and must be applicable only within the airspace(s) where the confusion is likely to occur.
(3) To avoid confusion, the ATC unit must, if appropriate, identify the aircraft which will be instructed to change its call sign by referring to its position and/or level.
(4) When an ATC unit changes the type of call sign of an aircraft, that unit must ensure that the aircraft reverts to the call sign indicated by the flight plan when the aircraft is transferred to another ATC unit, except when the call sign change has been coordinated between the two ATC units

concerned.

(5) The appropriate ATC unit must advise the aircraft concerned when it is to revert to the call sign indicated by the flight plan.

(i) Each ATS provider must publish ATC contingency procedures in Part 1 of the ATSPM, and where applicable, Part 2 of the ATSPM.

§ 171.273 Failure or Irregularity of Systems and Equipment.

ATCUs must immediately report in accordance with procedures published in Part 1 of the ATSPM any failure or irregularity of communication, navigation and surveillance systems or any other safety-significant systems or equipment which could adversely affect the safety or efficiency of flight operations and/or the provision of ATC service.

§ 171.275 Operating Irregularity.

(a) If an operating irregularity has taken place that implicates an ATC service, each ATS provider must immediately arrange for the removal from operational duties of any ATCO directly involved in the occurrence until the circumstances have been fully examined. This is a precautionary measure only, and not a disciplinary action, and should be done without prejudice to any investigation outcome.

(b) As soon as practicable after an operating irregularity has taken place, each ATS provider must ensure that a preliminary investigation is conducted to examine the basic facts and to determine if a reportable occurrence under GACAR § 171.853 or GACAR Part 5 has occurred. The ATS provider must ensure that:

(1) All relevant documentation is secured; and

(2) Appropriate reporting is initiated.

§ 171.277 Release of Information.

(a) The GM-ATS must consult with GACA regarding the release of unit operational records or material contained in them for any other situation than those specified in this part.

(b) Following an accident or incident, the affected ATSU supervisor must quarantine all involved operational records and deny access to those records except in the following circumstances;

(1) Permit only unit personnel who were not directly involved in the accident or incident under investigation access to unit operational records, for the purpose of verification, routine research and

efficiency checks.

(2) Permit Rescue Coordination Center (RCC) personnel, access as required in support of search activities. Audio and radar tape recordings may be played back, and the information released to the RCC, during active search and rescue operations.

(3) Provide access to personnel authorized by the AIB investigating accident, incident or personnel authorized by GACA when investigating a regulatory infraction.

SUBPART M - AERODROME AIR TRAFFIC SERVICE

§ 171.301 General.

Each ATS provider must-

(a) define the objectives of aerodrome air traffic service and publish these in Part 1of the ATSPM.

(b) publish instructions for the aerodrome controller and aerodrome flight information officer to carry out their responsibilities in Part 1 of the ATSPM.

(c) ensure that instructions for direct and indirect visual surveillance from local or remote aerodrome air traffic services are published in Part 2 of the ATSPM;

(d) comply with the requirements related to the provision of aerodrome Air Traffic Services (ATS) from remote locations as defined under this subpart and GACAR Part 173, Appendix C Section C.15

(e) ensure that an aerodrome control tower or remote aerodrome ATS, in addition to being connected to the flight information center, the area control center and the approach control unit as prescribed in §171.671(g), §171.421(b) and §171.371(b), must have facilities for communications with the following units providing a service within their respective area of responsibility:

(1) appropriate military units;
(2) rescue and emergency services (including ambulance, fire, etc.);

(3) the meteorological office serving the aerodrome;

(4) the aeronautical telecommunications provider serving the facilities used in the provision of air traffic services;

(5) the unit providing apron management service, when separately established.

(6) the associated air traffic services reporting office, when separately established.

(f) ensure that the communication facilities prescribed in (e) include:

(1) communications by direct speech alone, or in combination with data link communications,

whereby the communications can be established instantaneously and for other purposes the communications can normally be established within fifteen seconds; and;

(2) printed communications, when a written record is required; the message transit time for such communications being no longer than five minutes;

(3) suitable facilities for automatic recording in all cases where automatic transfer of data to and/or from air traffic services computers is required.

(4) direct speech arranged for conference communications.

(g) ensure that the communication facilities prescribed in (e) are 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.

(h) ensure that two-way radiotelephony communication facilities are provided for aerodrome control service and remote aerodrome ATS for the control of vehicles on the manoeuvring area, except where communication by a system of visual signals is deemed to be adequate.

§ 171.303 Functions of Aerodrome Control Towers.

(a) *General*.

(1) Aerodrome control towers must issue information and clearances to aircraft under their control to achieve a safe, orderly and expeditious flow of air traffic on and in the vicinity of an aerodrome with the object of preventing collision(s) between:

(i) Aircraft flying within the designated area of responsibility of the control tower, including the aerodrome traffic circuits;
(ii) Aircraft operating on the maneuvering area;
(iii) Aircraft landing and taking off;
(iv) Aircraft and vehicles operating on the maneuvering area;
(v) Aircraft on the maneuvering area and obstructions on that area.

(2) Aerodrome controllers must maintain a continuous watch on all flight operations on and in the vicinity of an aerodrome as well as vehicles and personnel on the maneuvering area. Visual observation must be achieved through direct Out-Of-the-Window (OOW) observation, or through indirect observation utilizing a visual surveillance system which is specifically approved for the purpose by the President. Watch must be maintained by visual observation or through indirect

observation utilizing a visual surveillance system, augmented in low visibility conditions by an ATS surveillance system when available. Traffic must be controlled in accordance with the procedures set forth herein and all applicable traffic rules specified by the ATS provider. If there are other aerodromes within a control zone, traffic at all aerodromes within such a zone must be coordinated so that traffic circuits do not conflict.

(3) The functions of an aerodrome control tower may be performed by different control or working positions operated from on-site aerodrome control tower or from remote locations, such as:

(i) Aerodrome controller, normally responsible for operations on the runway and aircraft flying within the area of responsibility of the aerodrome control tower;

(ii) Ground controller, normally responsible for traffic on the maneuvering area with the exception of runways;

(iii) Clearance delivery position, normally responsible for delivery of start-up and ATC clearances to departing IFR flights.

(4) Where parallel or near-parallel runways are used for simultaneous operations, individual aerodrome controllers must be responsible for operations on each of the runways.

(b) Alerting service provided by aerodrome control towers.

(1) Aerodrome control towers are responsible for alerting the rescue and firefighting services whenever:

(i) An aircraft accident has occurred on or in the vicinity of the aerodrome;

(ii) Information is received that the safety of an aircraft which is or will come under the jurisdiction of the aerodrome control tower may have or has been impaired;

(iii) Requested by the flight crew; or

(iv) When otherwise deemed necessary or desirable by the controller or aerodrome management.

(2) Procedures concerning the alerting of the rescue and firefighting services must be contained in instructions that must be prescribed in Part 2 of the ATSPM. Such instructions must specify the type of information to be provided to the rescue and firefighting services, including type of aircraft and type of emergency and, when available, number of persons on board, and any dangerous goods carried on the aircraft.

(3) Aircraft which fail to report after having been transferred to an aerodrome control tower, or, having once reported, cease radio contact and in either case fail to land five minutes after the expected landing time, must be reported to the APP, ACC or FIC, or to the RCC or rescue sub-center, in accordance with instructions that must be prescribed in Part 2 of the ATSPM.

(c) Failure or irregularity of aids and equipment. Aerodrome control towers must immediately report in accordance with GACAR § 171.273 any failure or irregularity of operation in any equipment, light or other device established at an aerodrome for the guidance of aerodrome traffic and flight crews or required for the provision of ATC service.

§ 171.305 Aerodrome Traffic Pattern.

(a) All aerodrome traffic patterns must be a left-hand traffic pattern unless right-hand traffic pattern has been established by the President under GACAR Part 93.

(b) Each ATS provider must publish circuit procedures for each aerodrome in the Part 2 of the ATSPM.

§ 171.307 Selection of Runway-in-Use.

(a) Each ATS provider must ensure that the TWR selects the runway-in-use that will permit aircraft to land and take- off as near as possible into wind unless safety, the runway configuration or traffic conditions determine that a different direction is preferable. In selecting the runway in-use, the TWR must take into consideration; besides the surface wind speed and direction, other relevant factors such as hazardous meteorological conditions in the approach area and landing aids available.

(b) The term “runway-in-use” must be used to indicate the runway or runways that, at a particular time, are considered by the aerodrome control tower to be the most suitable for use by the types of aircraft expected to land or take off at the aerodrome.

(c) Runways must not be selected for noise abatement purposes for landing operations unless they are equipped with suitable glide path guidance, e.g., ILS, or a visual approach slope indicator system for operations in visual meteorological conditions.

(d) Noise abatement must not be a determining factor in runway nomination under the following circumstances:

(1) If the runway surface conditions are adversely affected (e.g., by snow, slush, ice, sand, water, mud, rubber, oil or other substances);
(2) For landing in conditions:

(i) When the ceiling is lower than 500 ft above aerodrome elevation, or the visibility is less than 1900 m; or

(ii) When the approach requires use to be made of vertical minima greater than 300 ft above aerodrome elevation and:

(A) The ceiling is lower than 800 ft above aerodrome elevation; or
(B) The visibility is less than 3000 m;

(3) For takeoff when the visibility is less than 1900 m;
(4) When wind shear has been reported or forecast or when thunderstorms are expected to affect the approach or departure; and
(5) When the crosswind component, including gusts, exceeds 28 km/h (15 kt), or the tailwind component, including gusts, exceeds 9 km/h (5 kt).

(e) Instructions for the selection of runway-in-use must be published in Parts 1 and 2 of the ATSPM

§ 171.309 Recording of Persons on Board (POB).

TWRs must request the POB for all flights departing within KSA airspace at initial contact with ATC. This information must be recorded and maintained and released to the ACC if requested as detailed in Part 1 of the ATSPM.

§ 171.311 Information Related to the Operation of Aircraft.

(a) Start-up time.

(1) Start-up time procedures must be implemented where necessary to avoid congestion and excessive delays on the maneuvering area or when warranted by ATFM requirements, where established. Start-up time procedures must be contained in Part 2 of the ATSPM and must specify the criteria and conditions for determining when and how start-up times must be calculated and issued to departing flights.
(2) Prior to start-up the pilot must be informed of any relevant meteorological detail unless the pilot on initial contact indicates that the information has been received.

(b) *Essential Local Traffic Information.*

(1) Information on essential local traffic must be issued in a timely manner, either directly or through the unit providing approach control service when, in the judgment of the aerodrome controller, such information is necessary in the interests of safety, or when requested by aircraft.

(2) Essential local traffic must be considered to consist of any aircraft, vehicle or personnel on or near the maneuvering area, or traffic operating in the vicinity of the aerodrome, which may constitute a hazard to the aircraft concerned.
(3) Essential local traffic must be described so as to be easily identified.
(4) Specific procedures concerning the provision of essential local traffic information must be detailed in Part 1 of the ATSPM.

(c) *Runway Incursion or Obstructed Runway.*

(1) In the event the aerodrome controller, after a takeoff clearance or a landing clearance has been issued, becomes aware of a runway incursion or the imminent occurrence thereof, or the existence of any obstruction on or in close proximity to the runway likely to impair the safety of an aircraft taking off or landing, appropriate action must be taken as follows:

(i) Cancel the takeoff clearance for a departing aircraft.

(ii) Instruct a landing aircraft to execute a go-around or missed approach;
(iii) In all cases inform the aircraft of the runway incursion or obstruction and its location in relation to the runway.

(2) ATCOs must report any occurrence involving an obstruction on the runway or a runway incursion.

Note - Animals and flocks of birds may constitute a hazard with regard to runway operations. In addition, an aborted take-off or a go-around executed after touchdown may expose the aeroplane to the risk of overrunning the runway. Moreover, a low altitude missed approach may expose the aeroplane to the risk of a tail strike. Pilots may, therefore, be unable to comply with an instruction to abandon their takeoff or landing.

(d) *Uncertainty of position on the maneuvering area.* In the event the aerodrome controller becomes aware of an aircraft or vehicle that is lost or uncertain of its position on the maneuvering area, appropriate action must be taken immediately to safeguard operations and assist the aircraft or vehicle concerned to determine its position.

(e) *Wake turbulence and jet blast hazards.*

(1) Whenever the responsibility for wake turbulence avoidance rests with the pilot in command, aerodrome controllers must, to the extent practicable, advise aircraft of the expected occurrence of hazards caused by turbulent wake.
(2) In issuing clearances or instructions, ATCOs must take into account the hazards caused by jet

blast and propeller slipstream to taxiing aircraft, to aircraft taking off or landing, particularly when intersecting runways are being used, and to vehicles and personnel operating on the aerodrome.

(f) *Abnormal aircraft configuration and condition.*

(1) Whenever an abnormal configuration or condition of an aircraft, including conditions such as landing gear not extended or only partly extended, or unusual smoke emissions from any part of the aircraft, is observed by or reported to the aerodrome controller, the aircraft concerned must be advised without delay.
(2) When requested by the flight crew of a departing aircraft suspecting damage to the aircraft, the departure runway used must be inspected without delay and the flight crew advised in the most expeditious manner as to whether any aircraft debris or bird or animal remains have been found or not.

(g) Specific procedures concerning the provision of information prescribed in paragraphs (c) to (f) must be detailed in Parts 1 and 2 (as appropriate) of the ATSPM.

§ 171.313 Essential Information on Aerodrome Conditions.

(a) Essential information on aerodrome conditions must be given to every aircraft, except when it is known that the aircraft already has received all or part of the information from other sources. The information must be given in sufficient time for the aircraft to make proper use of it, and the hazards must be identified as distinctly as possible.

(b) Essential information on aerodrome conditions must include information relating to the following:

(1) Construction or maintenance work on, or immediately adjacent to the movement area;
(2) Rough or broken surfaces on a runway, a taxiway or an apron, whether marked or not;
(3) Information that a runway or portion thereof is slippery wet;
(4) Anti-icing or de-icing liquid chemicals or other contaminants on a runway, taxiway or apron
(5) Sand or snowbanks or drifts adjacent to a runway, a taxiway or an apron;
(6) Other temporary hazards, including parked aircraft and birds on the ground or in the air;
(7) Failure or irregular operation of part or all of the aerodrome lighting system;
(8) Any other pertinent information.

(c) When transmitting information on the runway surface condition by air traffic services to flight crews, the Runway condition code for each runway third as defined under GACAR Part 139 are referred to as the first, second or third part of the runway. The first part always means the first third of the runway as seen in

the direction of landing or take-off.

(d) When a condition, not previously notified, pertaining to the safe use by aircraft of the maneuvering area is reported to or observed by the controller, the appropriate aerodrome authority must be informed and operations on that part of the maneuvering area terminated until otherwise advised by the appropriate aerodrome authority.

(e) Specific procedures concerning the provision of essential information on aerodrome conditions must be detailed in Part 1 of the ATSPM.

Note. — Up-to-date information on the conditions on aprons may not always be available to the aerodrome control tower. The responsibility of the aerodrome control tower in relation to aprons is limited to the transmission to aircraft of the information which is provided by the aerodrome operator.

§ 171.315 Control of Taxiing Aircraft.

(a) Specific procedures for rotorcraft air-taxiing must be detailed in Parts 1 and 2 of the ATSPM.

(b) An aircraft known or believed to be the subject of unlawful interference or which for other reasons needs isolation from normal aerodrome activities must be cleared to the designated isolated parking position as detailed in Part 2 of the ATSPM.

(c) *Taxi clearance.*

(1) Prior to issuing a taxi clearance, the controller must determine where the aircraft concerned is parked.
(2) Taxi clearances must contain concise instructions and adequate information so as to assist the flight crew to follow the correct taxi routes, to avoid collision with other aircraft or objects and to minimize the potential for the aircraft inadvertently entering an active runway.
(3) When a taxi clearance contains a taxi limit beyond a runway, it must contain an explicit clearance to cross or an instruction to hold short of that runway.
(4) Standard taxi routes established under Subpart H must be used whenever practicable. Where standard taxi routes have not been published, a taxi route must, whenever possible, be described by use of taxiway and runway designators. Other relevant information, such as an aircraft to follow or give way to, must also be provided to a taxiing aircraft.

(d) *Taxiing on a runway in use.*

(1) For the purpose of expediting air traffic, aircraft may be permitted to taxi on the runway-in-use, provided no delay or risk to other aircraft will result. Where control of taxiing aircraft is provided by a ground controller and the control of runway operations by an aerodrome controller, the use of a runway by taxiing aircraft must be coordinated with and approved by the aerodrome controller. Communication with the aircraft concerned must be transferred from the ground controller to the aerodrome controller prior to the aircraft entering the runway.
(2) If the control tower is unable to determine, either visually or via an ATS surveillance system that a vacating or crossing aircraft has cleared the runway, the aircraft must be requested to report when it has vacated the runway. The report must be made when the entire aircraft is beyond the relevant runway-holding position.

(e) *Use of runway holding positions.*

(1) Except as provided in (2) or as otherwise prescribed by the ATS provider in Part 1 or 2 of the ATSPM, aircraft must not be held closer to a runway-in-use than at a runway-holding position.
(2) Aircraft must not be permitted to line up and hold on the approach end of a runway-in-use whenever another aircraft is affecting a landing, until the landing aircraft has passed the point of intended holding.

(f) *Rotorcraft taxiing operations.*

(1) A frequency change must not be issued to single-pilot rotorcraft hovering or air-taxiing. Whenever possible, control instructions from the next ATSU must be relayed as necessary until the pilot is able to change frequency.
(2) When it is requested or necessary for a helicopter to proceed at a slow speed above the surface, normally below 37 km/h (20 kt) and in ground effect, air-taxiing may be authorized.
(3) Instructions which require small aircraft or helicopters to taxi in close proximity to taxiing helicopters should be avoided and consideration should be given to the effect of turbulence from taxiing helicopters on arriving and departing light aircraft.

§ 171.317 Control of Persons and Vehicles.

(a) The movement of persons or vehicles including towed aircraft on the maneuvering area of an aerodrome must be controlled by the TWR as necessary to avoid hazard to them or to aircraft landing, taxiing or taking off. At controlled aerodromes all vehicles employed on the manoeuvring area must be capable of maintaining two-way radiocommunication with the aerodrome control tower, except when the vehicle is only occasionally used on the manoeuvring area and is accompanied by a vehicle with the required

communications capability or is employed in accordance with a pre-arranged plan established with the aerodrome control tower. When employed in accordance with a plan prearranged with the aerodrome control tower, Work-In-Progress and maintenance personnel should not normally be required to be capable of maintaining two-way radiocommunication with the aerodrome control tower.

(b) In conditions where low visibility procedures are in operation:

(1) Persons and vehicles operating on the maneuvering area of an aerodrome must be restricted to the essential minimum, and particular regard must be given to the requirements to protect the ILS sensitive area(s) when Category II or Category III precision instrument operations are in progress;
(2) Subject to the provisions in (c), the minimum separation between vehicles and taxiing aircraft must be as prescribed by the ATS provider taking into account the aids available;
(3) When mixed ILS Category II or Category III precision instrument operations are taking place to the same runway continuously, the more restrictive ILS critical and sensitive areas must be protected.

Note. — The period of application of low visibility procedures is determined in accordance with ATS unit instructions. Guidance on low visibility operations on an aerodrome is contained in the Manual of Surface Movement Guidance and Control Systems (SMGCS) (Doc 9476).

(c) Emergency vehicles proceeding to the assistance of an aircraft in distress must be afforded priority over all other surface movement traffic.

(d) Subject to the provisions in (c), vehicles operating or intending to operate on the maneuvering area must be required to comply with the following rules:

(1) Vehicle drivers must read back to the air traffic controller safety-related parts of instructions which are transmitted by voice, e.g., instructions to enter, hold short of, cross and operate on any operational runway or taxiway.
(2) Vehicles and vehicles towing aircraft must give way to aircraft which are landing, taking off or taxiing;
(3) Vehicles must give way to other vehicles towing aircraft;
(4) Vehicles must give way to other vehicles in accordance with ATSU instructions;
(5) Notwithstanding the provisions of (2), (3) or (4), vehicles and vehicles towing aircraft must comply with instructions issued by the aerodrome control tower.

(e) When communications by a system of visual signals is deemed to be adequate, or in the case of radio communication failure, the signals prescribed in GACAR § 91.31 must be used.

(f) Each ATS provider must-publish procedures in Part 1 of the ATSPM for the movement of persons or vehicles on the maneuvering area who must be subject to permission from the TWR and must be controlled as necessary for their own safety and to avoid hazard to aircraft landing, taxiing or taking-off.

§ 171.319 Control of Aircraft in the Traffic Circuit.

(a) Aircraft in traffic circuit must be controlled as per prescribed separation minima under Subpart R and as detailed in Parts 1 and 2 of the ATSPM except that:

(1) Aircraft in formation (more than one aircraft in a group) are exempted from the separation minima with respect to separation from other aircraft of the same formation;
(2) Aircraft operating on runways suitable for simultaneous landing or takeoff must be exempted from the separation minima; and
(3) Separation minima must not apply to aircraft operating under military necessity.

(b) Sufficient separation must be effected between aircraft in flight in the traffic circuit to allow the spacing of arriving and departing aircraft

(c) Entry of traffic circuit.

(1) Depending on the circumstances and traffic conditions, an aircraft may be cleared to join at any position in the traffic circuit.

(2) An arriving aircraft executing an instrument approach must normally be cleared to land straight in unless visual maneuvering to the landing runway is required.

(d) Priority for landing.

(1) If an aircraft enters an aerodrome traffic circuit without proper authorization, it must be permitted to land if its actions indicate that it so desires. If circumstances warrant, aircraft which are in contact with the controller may be instructed by the controller to give way so as to remove as soon as possible the hazard introduced by such unauthorized operation. In no case may permission to land be withheld indefinitely.

(2) In cases of emergency it may be necessary, in the interests of safety, for an aircraft to enter a traffic circuit and effect a landing without proper authorization. Controllers must recognize the possibilities of emergency action and render all assistance possible.

(3) Priority must be given to:

(i) An aircraft which anticipates being compelled to land because of factors affecting the safe operation of the aircraft (engine failure, shortage of fuel, etc.);
(ii) Air ambulance aircraft or aircraft carrying any sick or seriously injured persons requiring urgent medical attention;
(iii) Aircraft engaged in search and rescue operations; and
(iv) Other aircraft as may be determined by the ATS provider.

(e) As the view from the flight deck of an aircraft is normally restricted, the controller must ensure that instructions and information which require the flight crew to employ visual detection, recognition and observation are phrased in a clear, concise and complete manner.

(f) Local procedures affecting an aircraft that has been compelled to land without authorization must be detailed in Part 2 of the ATSPM.

Note: Ambulance aircraft carry one or more patients or casualties, whereas medical aircraft carry harvested organs, biological material, medical equipment and/or medical personnel. Search and Rescue aircraft may operate as an ambulance or medical aircraft.

§ 171.321 Order of Priority for Arriving and Departing Aircraft.

(a) An aircraft landing or in the final stages of an approach to land must normally be given priority over aircraft intending to depart.

(b) Departing aircraft must normally be cleared in the order in which they are ready for takeoff, except that deviations may be made from this order of priority to facilitate the maximum number of departures with the least average delay.

§ 171.323 Control of Departing Aircraft.

(a) *Departure sequence*. Departures must normally be cleared in the order in which they are ready for takeoff, except that deviations may be made from this order of priority to facilitate the maximum number of departures with the least average delay.

(b) *Separation of departing aircraft*. Except as provided in the separation minima prescribed Subpart R, a departing aircraft must not normally be permitted to commence takeoff until the preceding departing aircraft has crossed the end of the runway-in-use or has started a turn or until all preceding landing aircraft are clear of the runway-in-use.

c) *Take-off clearance.*

(1) Take-off clearance may be issued to an aircraft when there is reasonable assurance that the separation in (b), will exist when the aircraft commences takeoff.
(2) When an ATC clearance is required prior to takeoff, the takeoff clearance must not be issued until the ATC clearance has been transmitted to and acknowledged by the aircraft concerned. The ATC clearance must be forwarded to the TWR with the least possible delay after receipt of a request made by the tower or prior to such request if practicable.
(3) Subject to (2), the takeoff clearance must be issued when the aircraft is ready for takeoff and at or approaching the departure runway, and the traffic situation permits. To reduce the potential for misunderstanding, the takeoff clearance must include the designator of the departure runway.
(4) In the interest of expediting traffic, a clearance for immediate takeoff may be issued to an aircraft before it enters the runway. This clearance must not to be given to HEAVY or SUPER aircraft as it may generate a risk of wake turbulence effect and associated hazards to succeeding aircraft.
(5) The expression “TAKE-OFF” must only be used in radiotelephony when an aircraft is cleared for take-off or when cancelling a take-off clearance.

(d) Each ATS provider must stipulate in Part 1 of the ATSPM minimum general separation minima which must be applied between arriving and departing aircraft.

(e) As provided in Subpart R, lower minima may be applied at individual aerodromes. Such lower minima must be published in Part 2 of the ATSPM.

§ 171.325 Control of Arriving Aircraft.

(a) *Separation of landing aircraft and preceding landing and departing aircraft using the same runway.* Except as provided in the separation minima prescribed Subpart R, a landing aircraft must not normally be permitted to cross the runway threshold on its final approach until the preceding departing aircraft has crossed the end of the runway-in-use, or has started a turn, or until all preceding landing aircraft are clear of the runway-in-use.

(b) *Clearance to land.* An aircraft may be cleared to land when there is reasonable assurance that the separation in (a) or prescribed in accordance with GACAR § 171.566 will exist when the aircraft crosses the runway threshold, provided that a clearance to land must not be issued until a preceding landing aircraft has crossed the runway threshold. To reduce the potential for misunderstanding, the landing clearance must include the designator of the landing runway.

(c) *Landing and roll-out maneuvers.*

(1) When necessary or desirable in order to expedite traffic, a landing aircraft may be requested to:

(i) Hold short of an intersecting runway after landing;
(ii) Land beyond the touchdown zone of the runway;
(iii) Vacate the runway at a specified exit taxiway;
(iv) Expedite vacating the runway.

(2) In requesting a landing aircraft to perform a specific landing and/or roll-out maneuver, the type of aircraft, runway length, location of exit taxiways, reported braking action on runway and taxiway, and prevailing meteorological conditions must be considered. A SUPER or HEAVY aircraft must not be requested to land beyond the touchdown zone of a runway.
(3) When necessary or desirable, e.g., due to low visibility conditions, a landing or a taxiing aircraft must be instructed to report when a runway has been vacated.

(d) Each ATS provider must- stipulate in Part 1 of the ATSPM minimum general separation minima which must be applied between arriving and departing aircraft.

(e) As provided in Subpart R, lower minima may be applied at individual aerodromes. Such lower minima must be published in Part 2 of the ATSPM and will depend on a number of factors.

§ 171.329 Low Visibility Operations.

(a) When there is a requirement for traffic to operate on the maneuvering area in conditions of visibility which prevent the TWR from applying visual separation between aircraft, and between aircraft and vehicles, the following must apply:

(1) At the intersection of taxiways, an aircraft or vehicle on a taxiway must not be permitted to hold closer to the other taxiway than the holding position limit defined by a clearance bar, stop bar or taxiway intersection marking.
(2) The longitudinal separation on taxiways must be as specified for each particular aerodrome by the ATS provider. This separation must take into account the characteristics of the aids available for surveillance and control of ground traffic, the complexity of the aerodrome layout and the characteristics of the aircraft using the aerodrome.

(b) The ATS provider must establish provisions applicable to the start and continuation of precision approach category II/III operations as well as departure operations in RVR conditions less than a value of 550 m.

(c) Low visibility operations must be initiated by or through the TWR.

(d) The TWR must inform the APP concerned when procedures for precision approach category II/III and low visibility operations will be applied and also when such procedures are no longer in force.

(e) The TWR must, prior to a period of application of low visibility procedures, establish a record of vehicles and persons currently on the maneuvering area and maintain this record during the period of application of these procedures to assist in assuring the safety of operations on that area.

(f) Each ATS provider must-publish general procedures for low visibility operations in Part 1 of the ATSPM. Local procedures for CAT II and III operations must be published in Part 2 of the ATSPM.

§ 171.341 Obstructed Runway or Runway Incursion.

Instructions with regard to actions to be taken in the event of an obstructed runway or a runway incursion must be contained in both Part 1 and 2 of the ATSPM.

§ 171.343 Suspension of VFR Operations.

(a) As detailed in Part 1 of the ATSPM, all suspension of VFR operations must be accomplished through or notified to the TWR.

(b) Whenever VFR operations are suspended, the TWR must: (1) Hold all departures other than those which file IFR;

(1) Recall all local VFR flights; or obtain approval for SVFR operations; (3) Notify the APP or the ACC of the action taken; and
(2) Notify all operators affected or their designated representatives of the reason for taking such action, if necessary or requested.

§ 171.345 Authorization of Special VFR (SVFR) Flights.

(a) When traffic conditions permit, and subject to the weather minima prescribed in (b), SVFR flights may be authorized by the TWR to enter a control zone for the purpose of landing, take off and departure from a control zone, to cross a control zone or operate locally within a control zone.

(b) Except for rotorcraft, SVFR may only be authorized when the ground visibility is not less than 1500 m.

(c) Separation must be effected between all SVFR flights in accordance with the minima prescribed by the ATS provider and as detailed in Part 1 of the ATSPM and between SVFR flights and IFR flights in accordance with the applicable separation minima prescribed in Subpart R.

§ 171.347 Operation of Aeronautical Ground Lighting.

(a) Aeronautical Ground Lights: General.

(1) Except as provided in (2) and (3) of this paragraph, all aeronautical ground lights must be operated-

(i) Continuously during the hours of darkness or during the time the center of the sun's disc is more than 6 degrees below the horizon, whichever requires the longer period of operation, unless otherwise provided hereafter or otherwise required for the control of air traffic; and
(ii) At any other time when their use, based on meteorological conditions, is considered desirable for the safety of air traffic.

(2) Lights on and in the vicinity of aerodromes that are not intended for en-route navigation purposes may be turned off, subject to further provisions in this section, if no likelihood of either regular or emergency operation exists, provided that they can be again brought into operation at least one hour before the expected arrival of an aircraft.
(3) At aerodromes equipped with lights of variable intensity a table of intensity settings, based on conditions of visibility and ambient light, when so requested by an aircraft, further adjustment of the intensity must be made whenever possible.

(b) Each ATS provider must publish procedures for the operation of aeronautical ground lights in Parts 1 and 2 of the ATSPM including guidance for air traffic controllers in the operation of aeronautical ground lighting and in effecting adjustment of variable intensity lights used to suit the prevailing conditions.

(c) *Approach Lighting.*

(1) In addition to (a), approach lighting must also be operated:

(i) By day when requested by an approaching aircraft;
(ii) When the associated runway lighting is operated.

(2) The lights of a visual approach slope indicator system must be operated during the hours of daylight as well as of darkness and irrespective of the visibility conditions when the associated runway is being used.

(d) *Runway Lighting.*

(1) Runway lighting must not be operated if that runway is not in use for landing, takeoff or taxiing purposes, unless required for runway inspections or maintenance.
(2) If runway lighting is not operated continuously, lighting following a takeoff must be provided as specified below:

(i) At aerodromes where ATC service is provided and where lights are centrally controlled, the lights of one runway must remain lighted after takeoff as long as is considered necessary for the return of the aircraft due to an emergency occurring during or immediately after takeoff;
(ii) At aerodromes without ATC service or without centrally controlled lights, the lights of one runway must remain lighted until such time as would normally be required to reactivate the lights in the likelihood of the departing aircraft returning for an emergency landing, and in any case not less than fifteen minutes after takeoff.

(e) Stopway Lighting. Where installed, stopway lights must be operated whenever the associated runway lights are operated.

(f) Taxiway Lighting. Where required to provide taxi guidance, taxiway lighting must be turned on in such order that a continuous indication of the taxi path is presented to taxiing aircraft. Taxiway lighting or any portion thereof may be turned off when no longer needed.

(g) Stop Bars. Where installed, stop bars must be switched on to indicate that all traffic must stop and switched off to indicate that traffic may proceed.

(h) *Obstacle lighting.*

(1) Obstacle lighting associated with the approach to or departure from a runway or channel, where the obstacle does not project through the inner horizontal surface, as described in GACAR Part 139 (Ref. Annex 14, Volume I, Chapter 6), may be turned off and on simultaneously with the runway or channel lights.
(2) Unserviceability lights may not be turned off as permitted under (a) while the aerodrome is open.

§ 171.348 Aircraft Navigation Lights.

When aircraft navigation lights are observed to be off or unserviceable, in whole or in part, the pilot must be advised about the problem.

§ 171.349 Monitoring of Visual Aids.

(a) Aerodrome controllers must make use of automatic monitoring facilities, when provided, to ascertain whether the lighting is in good order and functioning according to selection.

(b) In the absence of an automatic monitoring system or to supplement such a system, the aerodrome controller must visually observe such lighting as can be seen from the TWR and use information from other sources such as visual inspections or reports from aircraft to maintain awareness of the operational status of the visual aids.

(c) Information from other sources such as visual inspections or reports from aircraft to maintain awareness of the operational status of the visual aids.

(d) On receipt of information indicating a lighting fault, the aerodrome controller must take such action as is warranted to safeguard any affected aircraft or vehicles, and initiate action to have the fault rectified.

§ 171.351 Aerodrome Traffic Signals.

Signals used by light-gun in the TWR together with appropriate response must be published in Part 1 of the ATSPM.

§ 171.353 Provision of Correct Time.

(a) Aerodrome control towers must, prior to an aircraft taxiing for takeoff, provide the pilot with the correct time, unless arrangements have been made for the pilot to obtain it from other sources.

(b) ATS services units must provide aircraft with the correct time on request. Time checks must be given to the nearest half minute.

§ 171.355 TWR and APP Coordination.

(a) Provision must be made to ensure that the APP at all times is kept informed of the sequence in which aircraft will depart as well as the runway to be used.

(b) Provision must be made to display the designators of assigned SIDs to the TWR, APP and/or the ACC as applicable.

(c) Each ATS provider must publish procedures for coordination requirements between APP and TWR in Part 1 of the ATSPM.

§ 171.357 Procedures and Regulations for VIP Flights.

(a) Each ATS provider must establish procedures in Part 2 of the ATSPM and include detailed instructions for managing VIP flights at each ATS unit.

(b) At aerodromes normally not handling ATC service, a temporary ATC service may be provided either from the TWR if one is installed or from a mobile unit specifically brought in.

(c) Standard separation must be provided between VIP flights and other controlled flights.

(d) VIP flights must be given priority for landing and takeoff except in the case of another aircraft being subject to an emergency.

§ 171.359 Use of ATS Surveillance Systems in the Aerodrome Control Service.

(a) Each ATS provider must publish procedures for the use of ATS surveillance systems in the aerodrome control service in Part 1 of the ATSPM. When authorized by, and subject to conditions prescribed by the President, ATS surveillance systems may be used in the provision of aerodrome control service to perform the following functions:

(1) Flight path monitoring of aircraft on final approach;
(2) Flight path monitoring of other aircraft in the vicinity of the aerodrome;
(3) Establishing separation between succeeding departing aircraft; and
(4) Providing navigation assistance to VFR flights.

(b) SVFR flights must not be vectored unless special circumstances, such as emergencies, dictate otherwise.

(c) Caution must be exercised when vectoring VFR flights so as to ensure that the aircraft concerned does not inadvertently enter instrument meteorological conditions.

(d) As control of aerodrome traffic is in the main based on visual observation of the maneuvering area and the vicinity of the aerodrome by the aerodrome controller, in prescribing conditions and procedures for the use of ATS surveillance systems in the provision of aerodrome control service, the ATS provider must ensure that the availability and use of an ATS surveillance system will not be detrimental to visual observation of aerodrome traffic.

§ 171.361 Use of ATS Surveillance Systems for Surface Movement Control.

To use the ATS Surveillance Systems for Surface Movement Control, each ATS provider must consider the following:

(a) Where provided, Surface Movement Radar (SMR) systems must, to the extent possible, enable the detection and display of the movement of all aircraft and vehicles on the manoeuvring area in a clear and unambiguous manner. Aircraft and vehicle position indications may be displayed in symbolic or non-symbolic form. Where labels are available for display, the capability must be provided for inclusion of aircraft and vehicle identification by manual or automated means.

(b) In the absence of visual observation of all or part of the maneuvering area or to supplement visual observation, surface movement guidance and control systems (SMGCS) including surface movement radar (SMR) and advanced-SMGCS (A-SMGCS) must be installed in accordance with the relevant requirements of GACAR Part 139 §139.915 and GACAR Part 173, Appendix C, and must be utilized to:

(1) Monitor the movements of aircraft and vehicles on the maneuvering area;
(2) Provide directional information to pilots and vehicle drivers as necessary; and
(3) Provide advice and assistance for the safe and efficient movement of aircraft and vehicles on the maneuvering area.

(c) establish an agreement with the relevant aerodrome operator for the installation and operation of such systems and publish operational procedures in Part 1 and Part 2 of the ATSPM that describe how those systems are to be used to augment visual observations and how aircraft are to be identified when using those systems.

Note. — The Manual of Surface Movement Guidance and Control Systems (SMGCS) (Doc 9476), the Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual (Doc 9830) and the Air Traffic Services Planning Manual (Doc 9426) contain guidance on the use of SMR

§ 171.363 Provision of Air Traffic Services from remote aerodrome tower facility.

(a) Each ATS provider must use electro-optical technologies and systems in low visibility situations or to overcome any limitations identified in the provision of Air Traffic Services (ATS) from an existing aerodrome control tower. The visual presentation displays resulting from optical systems may be combined with any existing ATS surveillance-derived information to enhance situational awareness by improved acquisition of targets normally acquired visually and complement existing surveillance

displays being used in an aerodrome control tower.

(b) Each ATS Provider considering the provision of remote aerodrome air traffic services must comply with the requirements of Appendix E to this part and ensure that:

(1) the remote aerodrome ATS technology and equipage are based on a variety of factors such as traffic density, volume, and complexity (e.g. mix of aircraft (IFR/VFR), aircraft types, performance and equipage, etc.) and vehicle operations) as well as the dimensions of the aerodrome, design characteristics and complexity of its layout, and the airspace classification, traffic circuits, departure and arrival paths/sectors, VFR entry/exit points, VFR holding points. The technology and equipage levels must enable the replication of 'Out of The Window' (OTW) views of current on-site aerodrome situation and its vicinity;
(2) a safety risk assessment is conducted, validated, and submitted to the President for acceptance to use the remote aerodrome ATS for aerodrome flight information service (AFIS) exclusively for one aerodrome at a time only. If the ATS provider is considering the provision of remote aerodrome ATC or the extension of remote AFIS to other aerodromes, then a new and separate safety risk assessment must be developed considering the experience gained and all observed events, identified risks, and threats;
(3) The following operational and technical factors are covered in the development of each safety risk assessment:

(i) Operational needs and requirements: Identification of the appropriate configuration of the remote aerodrome tower facility and the related operating methods, taking into consideration the operational application and the particular needs of the aerodrome(s), in such a way that the ATCOs/AFISOs are enabled to fulfil their responsibilities as if the service would be provided from a conventional tower;
(ii) ATS Personnel Licensing, Training and qualifications;
(iii) the siting of the cameras tower structure, its height, strength/frangibility, stability and wind loading associated with the aerodrome operations;
(iv) Visual Surveillance Equipment and systems. The Electro-optical equipment (cameras), sensors, data transmission links, data processing systems, and the associated visual presentation equipment (displays) must comply with the requirements of GACAR Part 173, Appendix C, Section C.15;
(v) Human Factors covering all internal and external interactions between ATS personnel and stakeholders;
(vi) Provision and assurance of meteorological services;
(vii) Physical and cyber security protection of the equipment and systems;
(viii) Dependencies, interfaces and interactions with stakeholders during the provision of

remote aerodrome services;
(ix) impact on airspace users and appropriate mitigation measures;
(x) Transition/implementation plan
(xi) Continuity of service – The systems design must consider service continuity and availability requirements as well as system safety requirements as defined under GACAR Part 173, Appendix C, Section C.15;
(xii) Failure modes and mitigation of system failure(s);
(xiii) Restoration of services (e.g. by means of contingency facilities in the event of failure of the primary facility).
(xiv) The provision of remoted communications, surveillance systems and the operational status of CNS facilities used for the provision of remote aerodrome air traffic services (ATS). This may cover replication of the audio environment, the interdependence between CNS elements and potential common mode failures the latency of different systems, Camera specifications, camera mounting arrangements;
(xv) The recording of the Visual Presentation Displays and aerodrome ambient audio;
(xvi) Maintenance of facilities and response to failures;
(xvii) The provision of lights and pyrotechnic signals to aerodrome traffic;
(xviii) Security risk assessment and cyberthreats;
(xix) Aeronautical Information publication;
(xx) Arrangements for continuing provision of ancillary services/activities.

(c) Each ATS Provider must ensure that the overlay or the integration of ATS surveillance-derived information and video camera surveillance used as enhanced equipage in a remote aerodrome tower must meet the requirements GACAR Part 173, Appendix C.

Note: Displaying of surveillance-derived data on the visual presentation displays may enhance situational awareness by improved acquisition of targets normally acquired visually and complement existing surveillance displays being used in a control tower. The display of surveillance-derived data must be optional and selectable as required.

SUBPART N - APPROACH CONTROL SERVICE

§ 171.371 Approach Control: General

(a) The APP must issue clearances and information to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic in the APP area of responsibility as detailed in Part 1 of the ATSPM.

(b) Each ATS provider must ensure that an approach control unit, in addition to being connected to the flight information center and the area control center as prescribed in §171.671(g) and §171.421(b), must have facilities for communications with:

(1) the associated aerodrome control tower(s) and, any other adjacent ATS units (e.g., aerodrome flight information service).
(2) the following units providing a service within their respective area of responsibility:

(i) appropriate military units;

(ii) rescue and emergency services (including ambulance, fire, etc.);

(iii) the meteorological office serving the associated aerodrome(s);

(iv) the aeronautical telecommunications entities serving the facilities used in the provision of air traffic services;
(v) the unit providing apron management service, when separately established.

(c) Each ATS provider must ensure that the communication facilities prescribed in (b) include:

(1) 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;
(2) printed communications, when a written record is required; the message transit time for such communications being no longer than five minutes;
(3) suitable facilities for automatic recording in all cases where automatic transfer of data to and/or from air traffic services computers is required;
(4) direct speech arranged for conference communications.

(d) Each ATS provider must ensure that the communication facilities prescribed in (b) are 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.

§ 171.372 Minimum Levels.

An aircraft must not be cleared for an initial approach unless:

(a) The pilot has reported passing a designated point associated with an instrument approach procedure or defined by a radio aid;

(b) The aircraft has been observed by radar to have passed a designated point associated with an instrument approach procedure (IAP); or

(c) The crew reports that they have and can maintain the aerodrome in sight and requests a visual approach as specified in Part 1 of the ATSPM.

§ 171.373 Information for Departing Aircraft.

(a) Information regarding significant changes in the meteorological conditions in the takeoff or climb-out area, obtained by the unit providing approach control service after a departing aircraft has established communication with such unit, must be transmitted to the aircraft without delay, except when it is known that the aircraft already has received the information.

(b) Information regarding changes in the operational status of visual or non-visual aids essential for takeoff and climb must be transmitted without delay to a departing aircraft, except when it is known that the aircraft already has received the information.

§ 171.374 Information for Arriving Aircraft.

(a) As early as practicable after an aircraft has established communication with the APP, the following elements of information, in the order listed, must be transmitted to the aircraft, with the exception of such elements which it is known the aircraft has already received:

(1) Type of approach and runway-in-use;
(2) Meteorological information, as follows:

(i) Surface wind direction and speed, including significant variations;

(ii) Visibility and, when applicable, runway visual range (RVR);

(iii) Present weather;

(iv) Cloud below 5000 ft or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured, vertical visibility when available;

(v) Air temperature;

(vi) Dew point temperature, inclusion determined on the basis of a regional air navigation agreement;

(vii) Altimeter setting(s);

(viii) Any available information on significant meteorological phenomena in the approach area; and

(ix) Trend-type landing forecast, when available.

(3) Current runway surface conditions, in case of precipitants or other temporary hazards;
(4) Changes in the operational status of visual and non-visual aids essential for approach and landing.

(b) If it becomes necessary or operationally desirable that an arriving aircraft follow an IAP or use a runway other than that initially stated, the flight crew must be advised without delay.

(c) At the commencement of final approach, the following information must be transmitted to aircraft:

(1) Significant changes in the mean surface wind direction and speed;
(2) The latest information, if any, on wind shear and/or turbulence in the final approach area;
(3) The current visibility representative of the direction of approach and landing or, when provided, the current runway visual range value(s) and the trend.

(d) During final approach, the following information must be transmitted without delay:

(1) The sudden occurrence of hazards (e.g., unauthorized traffic on the runway);
(2) Significant variations in the current surface wind, expressed in terms of minimum and maximum values;
(3) Significant changes in runway surface conditions;
(4) Changes in the operational status of required visual or non-visual aids; and

(5) Changes in observed RVR value(s), in accordance with the reported scale in use, or changes in the visibility representative of the direction of approach and landing

§ 171.375 Expected Approach Time.

(a) An expected approach time (EAT) must be determined for an arriving aircraft that will be subjected to a delay of 10 minutes or more or such other period as prescribed by the President. The EAT must be transmitted to the aircraft as soon as practicable and preferably not later than at the commencement of its initial descent from cruising level. A revised EAT must be transmitted to the aircraft without delay whenever it differs from that previously transmitted by 5 minutes or more, or such lesser period of time as has been established by the ATS provider or agreed between the ATSUs concerned.

(b) An EAT must be transmitted to the aircraft by the most expeditious means whenever it is anticipated that the aircraft will be required to hold for 30 minutes or more.

(c) The holding fix to which an EAT relates must be identified together with the EAT whenever circumstances are such that this would not otherwise be evident to the pilot.

(d) Each ATS provider must detail instructions in Part 1 of the ATSPM for the requirement of issuing EATs to arriving aircraft at individual aerodromes.

§ 171.377 Holding.

(a) Each ATS provider must ensure that controllers are familiar with the relevant holding procedures for all IAPs published for the aerodrome in the KSA AIP.

(b) In the event an aircraft is held en route or at a location or aid other than the initial approach fix, the aircraft concerned must, as soon as practicable, be given an expected onward clearance time from the holding fix. The aircraft must also be advised if further holding at a subsequent holding fix is expected.

§ 171.379 Approach Sequence and Clearance.

(a) Approach clearance must be issued in an order which will facilitate arriving of the maximum number of aircraft with the least average delay as detailed in Part 1 of the ATSPM, except that a special priority must be given to:

(1) Aircraft which anticipate being compelled to land because of factors affecting their safe operation,

e.g., engine failure, shortage of fuel, etc.;
(2) Air ambulance aircraft or aircraft carrying any sick or seriously injured person requiring urgent medical attention;
(3) Aircraft in search and rescue operations; and
(4) Other aircraft as may be determined by the ATS provider or the President.

(b) Succeeding aircraft must be cleared for approach:

(1) When the preceding aircraft has reported that it is able to complete its approach without encountering instrument meteorological conditions; or
(2) When the preceding aircraft is in communication with and sighted by the TWR, and reasonable assurance exists that a normal landing can be accomplished; or
(3) When timed approaches are used, the preceding aircraft has passed the defined point inbound, and reasonable assurance exists that a normal landing can be accomplished;
(4) When the use of an ATS surveillance system confirms that the required longitudinal spacing between succeeding aircraft has been established.

(c) In establishing the approach sequence, the need for increased longitudinal spacing between arriving aircraft due to wake turbulence must be taken into account.

(d) If the pilot of an aircraft in an approach sequence has indicated an intention to hold for weather improvement, or for other reasons, such action must be approved. However, when other holding aircraft indicate intention to continue their approach to land, the pilot desiring to hold will be cleared to an adjacent fix for holding awaiting weather change or re-routing. Alternatively, the aircraft must be given a clearance to place it at the top of the approach sequence so that other holding aircraft may be permitted to land. Coordination must be effected with any adjacent ATCU or control sector, when required, to avoid conflict with the traffic under the jurisdiction of that unit or sector.

(e) Timed approach procedures.
Subject to approval by the President, the following procedure may be utilized as necessary to expedite the approaches of a number of arriving aircraft:

(1) A suitable point on the approach path, which must be capable of being accurately determined by the pilot, must be specified, to serve as a checkpoint in timing successive approaches;
(2) Aircraft must be given a time at which to pass the specified point inbound, which time must be determined with the aim of achieving the desired interval between successive landings on the runway while respecting the applicable separation minima at all times, including the period of runway occupancy.

(3) The time at which aircraft should pass the specified point must be determined by the unit providing approach control service and notified to the aircraft sufficiently in advance to permit the pilot to arrange the flight path accordingly.
(4) Each aircraft in the approach sequence must be cleared to pass the specified point inbound at the previously notified time, or any revision thereof, after the preceding aircraft has reported passing the point inbound.

(f) In determining the time interval or longitudinal distance to be applied between successive approaching aircraft, the relative speeds between succeeding aircraft, the distance from the specified point to the runway, the need to apply wake turbulence separation, runway occupancy times, the prevailing meteorological conditions as well as any condition which may affect runway occupancy times must be considered. When an ATS surveillance system is used to establish an approach sequence, the minimum distance to be established between succeeding aircraft must be specified in Part 2 of the ATSPM. Part 2 of the ATSPM must additionally specify the circumstances under which any increased longitudinal distance between approaches may be required as well as the minima to be used under such circumstances.

§ 171.381 RNP Approaches.

(a) An RNP approach utilizes GNSS augmented by either ABAS (e.g., RAIM) or SBAS to provide lateral, or lateral and vertical guidance.

(b) Each ATS Provider must publish in Part 1 of the ATSPM procedures to ensure safe management of RNP approaches. These procedures must consider the following:

(1) Subject to prevailing traffic and the provision of standard separation/deconfliction minima, air traffic controllers should normally permit aircraft to route to the Initial Approach Fix (IAF) waypoint with a descent profile that enables the aircraft to cross the IAF not below the published procedure height/altitude at the IAF.
(2) Alternatively, air traffic controllers may vector aircraft onto the final approach track or onto a closing heading of not more than 45° (not greater than 30° for independent parallel approaches) offset from the final approach track to enable the aircraft to establish on the final approach track no later than the Intermediate Fix (IF). Descent clearances should facilitate a descent profile to enable the aircraft to cross the IF at the published procedure height/altitude at the IF, or if ATCSMAC permits, a descent clearance that enables the aircraft to cross the FAF at the published procedure height/altitude at the FAF.
(3) Air traffic controllers must not position aircraft onto the final approach of a RNP approach closer to touchdown than the IF. The positioning of an aircraft inside the IF may result in the onboard RNP equipment preventing the approach from being flown.

(4) Once an aircraft has been cleared for the approach, the pilot will follow the lateral and vertical profile of the RNP approach.
(5) Phraseology associated with RNP approaches must comply with ICAO Doc 4444.

§ 171.383 Visual Approaches.

(a) Subject to the conditions in paragraph (c) of this section, clearance for an IFR flight to execute a visual approach may be requested by a flight crew or initiated by the controller subject to concurrence of the flight crew.

(b) Controllers must exercise caution in initiating a visual approach when there is reason to believe that the flight crew concerned is not familiar with the aerodrome and its surrounding terrain. Controllers must also take into consideration the prevailing traffic and meteorological conditions when initiating visual approaches.

(c) An IFR flight may only be cleared to execute a visual approach provided the pilot can maintain visual reference to the terrain and:

(1) The reported ceiling is at or above the level of the beginning of the initial approach segment for the aircraft so cleared; or
(2) The pilot reports at the level of the beginning of the initial approach segment or at any time during the instrument approach procedure that the meteorological conditions are such that with reasonable assurance a visual approach and landing can be completed.

(d) Separation must be provided between an aircraft cleared to execute a visual approach and other arriving and departing aircraft.

(e) For successive visual approaches, separation must be maintained by the controller until the pilot of a succeeding aircraft reports having the preceding aircraft in sight. The aircraft must then be instructed to follow and maintain own separation from the preceding aircraft. When both aircraft are of a heavy wake turbulence category, or the preceding aircraft is of a heavier wake turbulence category than the following, and the distance between the aircraft is less than the appropriate wake turbulence minimum, the controller must issue a caution of possible wake turbulence. The PIC of the aircraft concerned is responsible for ensuring that the spacing from a preceding aircraft of a heavier wake turbulence category is acceptable and if it is determined that additional spacing is required the flight crew must inform ATC accordingly and state their requirements.

(f) Transfer of communications to the aerodrome controller must be described in Part 2 of ATSPM and

effected at such a point or time that information on essential local traffic, if applicable, and clearance to land or alternative instructions can be issued to the aircraft in a timely manner.

(g) Conditions for visual approaches must be published in Part 1 of the ATSPM.

§ 171.385 Instrument Approaches.

(a) The APP must specify the IAP to be used by arriving aircraft. A flight crew may request an alternative procedure and, if circumstances permit, may be cleared accordingly.

(b) If a pilot reports or it is clearly apparent to the ATCU that the pilot is not familiar with the IAP, the initial approach level, the point (in minutes from the appropriate reporting point) at which base turn or procedure turn will be started, the level at which the procedure turn must be carried out and the final approach track must be specified, except that only the last-mentioned need be specified if the aircraft is to be cleared for a straight-in approach. The frequency(s) of the navigation aid(s) to be used as well as the missed approach procedure must also be specified when deemed necessary.

(c) If visual reference to terrain is established before completion of the approach procedure, the entire procedure must nevertheless be executed unless the aircraft requests and is cleared for a visual approach.

§ 171.387 Coordination.

(a) The APP must keep ACC informed of relevant data affecting the approach sequence such as:

(1) Lowest level at the clearance limit for use by the ACC.
(2) Expected type of IAP; (3) Next available EAT;
(4) Revisions of EAT when 5 minutes or more different from that issued to the ACC;
(5) Departure times;
(6) Missed approach; and
(7) Information on overdue or unreported aircraft.

(b) The APP must keep the TWR advised of the following data:

(1) Sequence in which aircraft will be established on final approach for landing including ETA of arriving aircraft, not less than 15 minutes before ETA;
(2) Statement of transfer of control and communication to the TWR, giving relevant information; and
(3) Anticipated delay to departing traffic.

(c) After coordination with the APP, the ACC may clear the first arriving aircraft for approach rather than to a holding fix.

(d) General coordination procedures must be published in Part 1 of the ATSPM. Location specific coordination procedures must be published in Part 2 of the ATSPM.

§ 171.389 Use of ATS Surveillance Systems in the Approach Control Service.

(a) The information presented on a radar display may be used to perform the following functions in the provision of approach control services:

(1) Provide radar vectoring of arriving traffic on to final approach aids;
(2) Provide radar monitoring of parallel ILS approaches and instruct aircraft to take appropriate action in the event of possible or actual penetrations of the Non-Transgression Zone (NTZ);
(3) Provide radar vectoring of arriving traffic to a point from which a visual approach can be completed;
(4) Provide radar monitoring of other pilot-interpreted approaches; (5) Provide radar separation between:

(i) Succeeding departing aircraft;
(ii) Succeeding arriving aircraft; and
(iii) A departing aircraft and a succeeding arriving aircraft.

(b) ATS surveillance systems used in the provision of approach control service must be appropriate to the functions and level of service to be provided.

(c) ATS surveillance systems used to monitor parallel ILS approaches must meet the requirements for such operations specified in GACAR § 171.393.

(d) Procedures for the use of ATS surveillance systems in the Approach Control Service must be published in Part 1 of the ATSPM.

§ 171.387 General Approach Control Procedures Using ATS Surveillance Systems.

(a) Procedures and requirements for using ATS surveillance system in the approach control service must comply, except as provided in (b), with the applicable standard procedures of the International Civil Aviation Organization (Ref. Chapter 8, paragraphs 8.9.3 to 8.9.7 of ICAO Doc.4444 (PANS-ATM)).

(b) Each ATS provider must –

(1) Publish general procedures for the use of radar in approach control function in Part 1 of the ATSPM; and
(2) Publish radar separation minima within the TMA including reduced minima together with any conditions affecting the use in Part 2 of the ATSPM.

§ 171.393 Operations on Parallel or Near-Parallel Runways.

(a) Procedures and requirements for operating on parallel or near-parallel runways must be published by each ATS provider in Parts 1 and 2 of the ATSPM. Except as provided in (b), these procedures must comply with the applicable standard procedures of the International Civil Aviation Organization (Ref. Chapter 6 of ICAO Doc. 4444 (PANS-ATM)).

SUBPART O - AREA CONTROL SERVICE

§ 171.421 General.

(a) Each ATS provider must define the objectives of the area control service in Part 1 of the ATSPM.

(b) Each ATS provider must ensure that an area control center, in addition to being connected to the flight information center as prescribed in §171.671(g), must have facilities for communications with the following units providing a service within its area of responsibility:

(1) approach control units;
(2) aerodrome control towers or aerodrome flight information service;
(3) rescue and firefighting service serving uncontrolled aerodromes.
(4) appropriate military units;
(5) the meteorological office serving the center;
(6) the aeronautical telecommunications provider serving the center;
(7) appropriate operator's offices;
(8) the rescue coordination center or, in the absence of such center, any other appropriate emergency service;
(9) the international NOTAM office serving the center.

(c) Each ATS provider must ensure that the communication facilities prescribed in (b) include:

(1) 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;
(2) printed communications, when a written record is required; the message transit time for such communications being no longer than five minutes;
(3) suitable facilities for automatic recording in all cases where automatic transfer of data to and/or from air traffic services computers is required.

(d) Each ATS provider must ensure that the communication facilities prescribed in (b) are 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.

(e) Unless otherwise prescribed on the basis of regional air navigation agreements, facilities for communications between area control centers serving contiguous control areas must, 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.

§ 171.423 Transfer of Control.

The ACC must retain control of aircraft until the transfer of control point prescribed in unit procedures in Part 2 of the ATSPM.

§ 171.425 Transfer of Communication.

Communication transfer must occur at the same time as the transfer of control unless a different procedure is coordinated.

§ 171.427 Control Procedures.

Each ATS provider must detail in Part 1 of the ATSPM the use of the following control procedures:

(a) Release not before;

(b) Clearance expiry;

(c) Criteria for release of inbound traffic.

§ 171.429 Coordination Between ACCs.

(a) Each ATS provider must detail in Part 1 of the ATSPM the procedures for information interchange between adjacent ACCs. The procedures must include transfer of control and communication, which must be detailed in LOA established under § 171.811 and published in Part 2 of the ATSPM.

(b) If a flight will enter an adjacent area, information concerning any revision of the estimate of three minutes or more must be forwarded to the adjacent ACC. Such information must normally be provided by telephone.

§ 171.431 Coordination Between ACC and APP.

(a) General coordination procedures between ACC and APP must be detailed in Part 1 of the ATSPM.

(b) Local procedures for coordination must be published in Part 2 of the ATSPM.

(c) Provision must be made to ensure that the APP is at all times kept informed of the sequence of aircraft following the same STAR.

(d) Provision must be made to display the designators of assigned STARs to the ACC, the APP and/or the TWR, as applicable.

§ 171.433 Coordination Between ACC positions.

Data exchange between individual positions and/or sectors must be detailed in Part 2 of the ATSPM.

SUBPART P – ATS SURVEILLANCE SERVICES

§ 171.471 General.

(a) The information provided by ATS surveillance systems and presented on a situation display may be used to perform the following functions in the provision of ATC service:

(1) Provide ATS surveillance services as necessary in order to improve airspace utilization, reduce delays, provide for direct routings and more optimum flight profiles, as well as to enhance safety;
(2) Provide vectoring to departing aircraft for the purpose of facilitating an expeditious and efficient departure flow and expediting climb to cruising level;
(3) Provide vectoring to aircraft for the purpose of resolving potential conflicts;
(4) Provide vectoring to arriving aircraft for the purpose of establishing an expeditious and efficient approach sequence;
(5) Provide vectoring to assist pilots in their navigation (e.g., to or from a radio navigation aid, away from or around areas of adverse weather);
(6) Provide separation and maintain normal traffic flow when an aircraft experiences communication failure within the area of coverage;
(7) Maintain flight path monitoring of air traffic; and
(8) When applicable, maintain a watch on the progress of air traffic, in order to provide a procedural controller with:

(i) Improved position information regarding aircraft under control;
(ii) Supplementary information regarding other traffic; and
(iii) Information regarding any significant deviations by aircraft from the terms of their respective ATC clearances, including their cleared routes as well as levels, when appropriate.

(b) The number of aircraft simultaneously provided with ATS surveillance services must not exceed that which can safely be handled under the prevailing circumstances, taking into account:

(1) The structural complexity of the control area or sector concerned;
(2) The functions to be performed within the control area or sector concerned;
(3) Assessments of controller workloads, taking into account different aircraft capabilities, and sector capacity; and

(4) The degree of technical reliability and availability of the primary and backup communications, navigation and surveillance systems, both in the aircraft and on the ground.

(c) Direct pilot-controller communications must be established prior to the provision of ATS surveillance services, unless special circumstances, such as emergencies, dictate otherwise.

(d) Requirements for the level of reliability and availability of communications systems must be identified in the relevant system safety case and must be such that the possibility of system failures or significant degradations is very remote. Adequate backup facilities must be provided.

(e) Each ATS provider must publish the relevant functions and associated procedures that surveillance systems can be used for in ATC in Part 1 of the ATSPM.

§ 171.473 ATS Surveillance Operational Procedures.

Each ATS provider must publish the type of surveillance system to be used and the functionality of system in the ATSPM.

§ 171.475 Performance Checks.

(a) Each ATS provider must stipulate requirements for performance checks on radar displays including reporting procedures for any deficiencies or faults in Part 2 of the ATSPM.

(b) The provision of ATS surveillance services must be limited when position data quality degrades below the minimum level established by the ATS provider.

(c) Prior to each use, the controller must adjust the situation display(s) and carry out adequate checks on the accuracy thereof, in accordance with the technical instructions prescribed in the ATSPM for the equipment concerned.

(d) The controller must be satisfied that the available functional capabilities of the ATS surveillance system as well as the information presented on the situation display(s) is adequate for the functions to be performed.

(e) The controller must report, in accordance with procedures prescribed in Part 1 of the ATSPM , any fault in the equipment, or any incident requiring investigation, or any circumstances which make it difficult or impractical to provide ATS surveillance services.

§ 171.477 Minimum Levels.

(a) Each ATS provider must publish established minimum vectoring altitudes for all Approach Radar Units in Part 2 of the ATSPM. Such altitudes must be depicted on a map displayed prominently for the

Approach Radar Controller.

(b) Tactical radar vectoring altitudes must be established in accordance with the Procedures prescribed in ICAO Doc. 8168, Volume II (PANS-OPS).

(c) The lowest useable flight level must be calculated from actual QNH, unless the pressure variation is so small that reference to climatological data is acceptable.

(d) Based on current and anticipated atmospheric pressure distribution, ACCs must coordinate, when required, the lowest flight level to be used.

§ 171.479 Coordination of Traffic Under Radar and Procedural Control.

Each ATS provider must stipulate procedures in Part 1 of the ATSPM for aircraft being transferred from a procedural environment to a radar-controlled environment and vice versa.

§ 171.481 Use of SSR.

(a) Each ATS provider must –

(1) In accordance with the MID Regional SSR Code Employment Plan distribute codes for domestic and local flights to the individual radar units.

(2) Have in place instructions that ensure that other relevant authorities are able to recognize such allocated codes.

(b) Allocated SSR codes must be used for the duration of the flight within the MID Region.

(c) In the event of international armed conflict ICAO will reserve codes for medical aircraft and each ATS provider must have a system in place to notify adjacent FIRs and internal radar units of such allocations.

(d) International emergency codes together with relevant procedures for the affected aircraft must be accessible to all radar controllers.

§ 171.482 Operation of SSR Transponders and ADS-B.

Each ATS provider must establish procedures, and publish them in Part 1 of the ATSPM, relating to the operation of SSR transponders and ADS-B, as follows:

(a) When it is observed that the Mode A code shown on the situation display is different to what has been assigned to the aircraft, the pilot must be requested to confirm the code selected and, if the situation warrants (e.g. not being a case of unlawful interference), to reselect the correct code.

(b) If the discrepancy between assigned and displayed Mode A codes still persists, the pilot may be requested to stop the operation of the aircraft's transponder. The next control position and any other affected unit using SSR in the provision of ATS must be informed accordingly.

(c) Whenever it is observed on the situation display that the aircraft identification transmitted by a Mode S-equipped aircraft is different from that expected from the aircraft, the pilot must be requested to confirm and, if necessary, re-enter the correct aircraft identification.

(d) If, following confirmation by the pilot that the correct aircraft identification has been set on the Mode S identification feature, the discrepancy continues to exist, the following actions must be taken by the controller:

(1) Inform the pilot of the persistent discrepancy;
(2) Where possible, correct the label showing the aircraft identification on the situation display; and
(3) Notify the erroneous aircraft identification transmitted by the aircraft to the next control position and any other interested unit using Mode S for identification purposes.

(e) Whenever it is observed on the situation display that the aircraft identification transmitted by an ADS-B-equipped aircraft is different from that expected from the aircraft, the pilot must be requested to confirm and, if necessary, re-enter the correct aircraft identification.

(f) If, following confirmation by the pilot that the correct aircraft identification has been set on the ADS-B identification feature, the discrepancy continues to exist, the following actions must be taken by the controller:

(1) Inform the pilot of the persistent discrepancy;

(2) Where possible, correct the label showing the aircraft identification on the situation display; and
(3) Notify the next control position and any other unit concerned of the erroneous aircraft identification transmitted by the aircraft.

§ 171.483 Information Based on Mode C.

(a) *Verification of level information.*

(1) The tolerance value used to determine that pressure-altitude-derived level information displayed to the controller is accurate must be ±200 ft in RVSM airspace. In other airspace, it must be ±300 ft, except that, subject to approval by the President, the ATS provider may specify a smaller criterion, but not less than ±200 ft, if this is found to be more practical. Geometric height information must not be used for separation.
(2) Verification of pressure-altitude-derived level information displayed to the controller must be effected at least once by each suitably equipped ATCU on initial contact with the aircraft concerned or, if this is not feasible, as soon as possible thereafter. The verification must be effected by simultaneous comparison with altimeter-derived level information received from the same aircraft by radiotelephony. Geometric height information must not be used to determine if altitude differences exist.
(3) If the displayed level information is not within the approved tolerance value or when a discrepancy in excess of the approved tolerance value is detected subsequent to verification, the pilot must be advised accordingly and requested to check the pressure setting and confirm the aircraft's level.
(4) If, following confirmation of the correct pressure setting the discrepancy continues to exist, the following action must be taken according to circumstances:

(i) Request the pilot to stop Mode C or ADS-B altitude data transmission, provided this does not cause the loss of position and identity information, and notify the next control positions or ATCU concerned with the aircraft of the action taken; or
(ii) Inform the pilot of the discrepancy and request that the relevant operation continue in order to prevent loss of position and identity information of the aircraft and, when authorized by the President, override the label-displayed level information with the reported level. Notify the next control position or ATCU concerned with the aircraft of the action taken.

(b) *Determination of level occupancy.*

(1) The criterion which must be used to determine that a specific level is occupied by an aircraft must

be ±200 ft) in RVSM airspace. In other airspace, it must be ±300 ft, except that, subject to approval by the President, the ATS provider may specify a smaller criterion, but not less than ±200 ft, if this is found to be more practical.

(2) An aircraft is considered to be maintaining its assigned level as long as the pressure- altitude-derived level information indicates that it is within the appropriate tolerances of the assigned level, as specified in (1).

(3) An aircraft cleared to leave a level is considered to have commenced its maneuver and vacated the previously occupied level when the pressure-altitude-derived level information indicates a change of more than 300 ft in the anticipated direction from its previously assigned level.

(4) An aircraft in climb or descent is considered to have crossed a level when the pressure- altitude-derived level information indicates that it has passed this level in the required direction by more than 300 ft.

(5) An aircraft is considered to have reached the level to which it has been cleared when the elapsed time of three display updates, three sensor updates or 15 seconds, whichever is the greater, has passed since the pressure-altitude-derived level information has indicated that it is within the appropriate tolerances of the assigned level, as specified in (1).

(6) Intervention by a controller must only be required if differences in level information between that displayed to the controller and that used for control purposes are in excess of the values stated above.

(c) Each ATS provider must –

(1) Publish procedures for verification of Mode C derived level information as displayed to the controller in Part 1 of the ATSPM; and

(2) Publish procedures for determination of level occupancy in both RVSM and non RVSM airspace in Part 1 of the ATSPM.

§ 171.485 Radar Identification Procedures.

(a) Before providing an ATS surveillance service to an aircraft, identification must be established, and the pilot informed. Thereafter, identification must be maintained until termination of the ATS surveillance service.

(b) If identification is subsequently lost, the pilot must be informed accordingly and, when applicable, appropriate instructions issued.

(c) Identification must be established by at least one of the methods prescribed by the International Civil Aviation Organization in Chapter 8, paragraph 8.6.2 of ICAO Doc. 4444 (PANS-ATM).

(d) Each ATS provider must publish procedures to be used for identification of aircraft using both primary and secondary radars in Part 1 of the ATSPM.

(e) Before implementing any new surveillance technology each ATS provider must publish identification procedures to be used by the controllers in Part 1 of the ATSPM.

§ 171.487 Transfer of Radar Identification.

(a) Transfer of identification from one controller to another must only be attempted when it is considered that the aircraft is within the accepting controller's surveillance coverage.

(b) Transfer of identification must be effected by one of the following methods:

(1) Designation of the position indication by automated means, provided that only one position indication is thereby indicated and there is no possible doubt of correct identification;

(2) Notification of the aircraft's discrete SSR code or aircraft address;
(3) Notification that the aircraft is SSR Mode S-equipped with an aircraft identification feature when SSR Mode S coverage is available;
(4) Notification that the aircraft is ADS-B-equipped with an aircraft identification feature when compatible ADS-B coverage is available;
(5) Direct designation (pointing with the finger) of the position indication, if the two situation displays are adjacent, or if a common "conference" type of situation display is used;
(6) Designation of the position indication by reference to, or in terms of bearing and distance from, a geographical position or navigational facility accurately indicated on both situations displays, together with the track of the observed position indication if the route of the aircraft is not known to both controllers;
(7) Where applicable, issuance of an instruction to the aircraft by the transferring controller to change SSR code and the observation of the change by the accepting controller; or
(8) Issuance of an instruction to the aircraft by the transferring controller to squawk/transmit IDENT and observation of this response by the accepting controller.

(c) Each ATS provider must publish procedures for transfer of radar identification both by electronic and other means in Part 1 of the ATSPM.

§ 171.489 Transfer of Radar Control.

(a) Each ATS provider must publish procedures in Part 1 of the ATSPM governing the transferring of radar control both internally and externally and using secondary as well as primary radar control.

(b) When using secondary radar, the SSR Code must be known to the accepting unit.

§ 171.491 Provision of Position Information.

(a) An aircraft provided with ATS surveillance service must be informed of its position in the following circumstances:

(1) upon identification, except when the identification is established:

(i) based on the pilot's report of the aircraft position or within one nautical mile of the runway upon departure and the observed position on the situation display is consistent with the aircraft's time of departure; or
(ii) by use of ADS-B aircraft identification, Mode S aircraft identification or assigned discrete SSR codes and the location of the observed position indication is consistent with the current flight plan of the aircraft; or
(iii) by transfer of identification;

(2) when the pilot requests this information;
(3) when a pilot's estimate differs significantly from the controller's estimate based on the observed position;
(4) when the pilot is instructed to resume own navigation after vectoring if the current instructions had diverted the aircraft from a previously assigned route
(5) immediately before termination of ATS surveillance service, if the aircraft is observed to deviate from its intended route.

(b) An identified aircraft observed to deviate significantly from its intended route or designated holding pattern must be advised accordingly. Appropriate action must also be taken if, in the opinion of the controller, such deviation is likely to affect the service being provided.

(c) Position information must be passed to aircraft in one of the following forms:

(1) As a well-known geographical position;

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

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

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

(5) Distance and direction from the center line of an ATS route.

(d) Whenever practicable, position information must relate to positions or routes pertinent to the navigation of the aircraft concerned and shown on the situation display map.

(e) Each ATS provider must determine and issue instructions in Part 1 of the ATSPM as to when position information must be passed to an aircraft and direct controllers on how to pass such position information to an aircraft.

§ 171.492 Collision Hazard Information.

Each ATS provider must publish procedures in Part 1 of the ATSPM concerning situations where an aircraft is observed to be on a conflicting path with another aircraft. Such collision hazard procedures must ensure that as many relevant details as practical, such as Mode C information, is passed to the aircraft in communication with the ATSU even if such information has not been verified and should provide for notification to the pilot when the conflict no longer exists.

§ 171.493 ATS Surveillance System Equipment Failure.

(a) Each ATS provider must detail in Parts 1 and 2 of the ATSPM the list of actions to be taken by the radar controller, in the event of complete failure of the radar equipment. This list must include the passing of essential traffic information to the pilots of aircraft affected; the immediate re-organization of traffic by altitude, and any other means, which will ensure separation of all aircraft under the ATCO control; and performing of the necessary actions to establish non-radar separation between the aircraft.

(b) In the event of complete failure of the ATS surveillance system where air-ground communications remain, the ATCO must plot the positions of all aircraft already identified, take the necessary action to establish procedural separation between the aircraft and, if necessary, limit the number of aircraft permitted to enter the area.

(c) As an emergency measure, use of flight levels spaced by half the applicable vertical separation

minimum may be resorted to temporarily if standard procedural separation cannot be provided immediately.

§ 171.494 Ground Radio Failure.

Each ATS provider must detail in Parts 1 and 2 of the ATSPM the actions to be taken by the controller in the event of complete failure of the ground radio equipment used for ATS surveillance service. Such procedures must include:

(a) Without delay, inform all adjacent control positions or ATSUs, as applicable, of the failure;

(b) Implement contingency measures which may include the provision of using hand held radios, or to deploy vehicles with radios, plus coordination procedures;

(c) Appraise such positions or units of the current traffic situation;

(d) Request their assistance, in respect of aircraft which may establish communications with those positions or units, in establishing radar or non- radar separation between and maintaining control of such aircraft; and

(e) Instruct adjacent control positions or ATSUs to hold or reroute all controlled flights outside the area of responsibility of the position or ATSU that has experienced the failure until such time that the provision of normal services can be resumed.

§ 171.495 Adverse Weather Information.

Each ATS provider must –

(a) Instruct controllers through Part 1 of the ATSPM to advise aircraft and MET providers of observed or reported adverse weather information.

(b) Ensure that radar controllers are aware of radar limitations in respect of indicating weather information.

§ 171.497 Solar Radiation information.

Each ATS provider must –

(a) publish detailed information in Part 1 of ATSPM on solar radiation, space weather events that can have an operational impact and generate a degradation or loss of satellite-based and/or ground-based navigation and/or communications systems and in extreme cases aircraft occupants, especially those in high level flight, can be exposed to increased levels of solar radiation;

(b) ensure that space weather forecasts, alerts and warnings available from the Met provider are available for FICs and ACCs;

(c) ensure that measures are published in Part 1 of ATSPM to accommodate any request of descent for traffic encountering severe space weather before the effects of the space weather exceeds an acceptable level.

§ 171.499 Radar Vectoring.

(a) Vectoring must be achieved by issuing to the pilot specific headings which will enable the aircraft to maintain the desired track. When vectoring an aircraft, a controller must comply with the following:

(1) Whenever practicable, the aircraft must be vectored along tracks on which the pilot can monitor the aircraft position with reference to pilot-interpreted navigation aids (this will minimize the amount of navigational assistance required and alleviate the consequences resulting from an ATS surveillance system failure);
(2) When an aircraft is given its initial vector diverting it from a previously assigned route, the pilot must be informed what the vector is to accomplish, and the limit of the vector must be
(3) specified when the assigned heading is such that a loss of communications may result in a safety risk (e.g. to ... position, for ... approach);
(4) Except when transfer of control is to be effected, aircraft must not be vectored closer than 2.5 NM or, where the minimum permissible separation is greater than 5 NM, a distance equivalent to one-half of the prescribed separation minimum, from the limit of the airspace for which the controller is responsible, unless local arrangements have been made to ensure that separation will exist with aircraft operating in adjoining areas;
(5) Controlled flights must not be vectored into uncontrolled airspace except in the case of emergency or in order to circumnavigate adverse meteorological conditions (in which case the pilot should be so informed), or at the specific request of the pilot; and
(6) When an aircraft has reported unreliable directional instruments, the pilot must be requested, prior to the issuance of maneuvering instructions, to make all turns at an agreed rate and to carry out the instructions immediately upon receipt.

(b) When vectoring an IFR flight and when giving an IFR flight a direct routing which takes the aircraft off an ATS route, the controller must issue clearances such that the prescribed obstacle clearance will exist at all times until the aircraft reaches the point where the pilot will resume own navigation. When necessary, the relevant minimum vectoring altitude must include a correction for low temperature effect. Where possible, minimum vectoring altitudes must be sufficiently high to minimize activation of aircraft ground proximity warning systems.

(c) In terminating vectoring of an aircraft, the controller must instruct the pilot to resume own navigation, giving the pilot the aircraft's position and appropriate instructions, as necessary, in the form prescribed in GACAR § 171.491(b), if the current instructions had diverted the aircraft from a previously assigned route.

(d) Each ATS provider must publish procedures in Part 1 of the ATSPM pertaining to radar vectoring of aircraft:

(1) for Sequencing of aircraft on approach.
(2) To ensure minimum separation.
(3) To avoid severe weather.
(4) When requested by the pilot due to unreliable instruments.
(5) To maintain flight within controlled airspace.
(6) To ensure terrain clearance.

Note: ATC Surveillance Minimum Altitude Charts (ATCSMACs) are published in KSA AIP in accordance with the requirements of ICAO Annex 4; they indicate the minimum altitudes available to the controller when vectoring arriving aircraft. Controllers must not use altitudes below those notified on ATCSMAC except when levels are allocated in accordance with specific procedures that are approved for use within the final approach area.

§ 171.501 Interruption or Termination of ATS Surveillance Service.

(a) An aircraft which has been informed that it is provided with ATS surveillance service must be informed immediately when, for any reason, the service is interrupted or terminated.

(b) When the control of an identified aircraft is to be transferred to a control sector that will provide the aircraft with procedural separation, the transferring controller must ensure that appropriate procedural separation is established between that aircraft and any other controlled aircraft before the transfer is affected.

§ 171.503 Application of Radar Separation.

(a) Except as provided for in (h), (i) and GACAR §171.492 the separation minima specified in GACAR §171.564 must only be applied between identified aircraft when there is reasonable assurance that identification will be maintained.

(b) When control of an identified aircraft is to be transferred to a control sector that will provide the aircraft with procedural separation, such procedural separation must be established by the transferring controller before the aircraft reaches the limits of the transferring controller's area of responsibility, or before the aircraft leaves the relevant area of surveillance coverage.

(c) When authorized by the President and published by the ATS provider in Part 1 of the ATSPM, separation based on the use of ADS-B, SSR and/or PSR position symbols and/or PSR blips must be applied so that the distance between the center of the position symbols and/or PSR blips, representing the positions of the aircraft concerned, is never less than a prescribed minimum.

(d) Separation based on the use of PSR blips and SSR responses must be applied so that the distance between the center of the PSR blip and the nearest edge of the SSR response (or center, when authorized by the President, and published by the ATS provider in Part 1 of the ATSPM) is never less than a prescribed minimum.

(e) Separation based on the use of ADS-B position symbols and SSR responses must be applied so that the distance between the center of the ADS-B position symbol and the nearest edge of the SSR response (or the center, when authorized by the President, and published by the ATS provider in Part 1 of the ATSPM) is never less than a prescribed minimum.

(f) Separation based on the use of SSR responses must be applied so that the distance between the closest edges of the SSR responses (of the centers, when authorized by the President, and published by the ATS provider in Part 1 of the ATSPM) is never less than a prescribed minimum.

(g) In no circumstances must the edges of the position indications touch or overlap unless vertical separation is applied between the aircraft concerned, irrespective of the type of position indication displayed and separation minimum applied.

(h) In the event that the controller has been notified of a controlled flight entering or about to enter the airspace within which the separation minima specified in GACAR §171.564 is applied, but

has not identified the aircraft, the controller may, if so prescribed by the ATS provider in Part 1 of the ATSPM, continue to provide an ATS surveillance service to identified aircraft provided that:

(1) Reasonable assurance exists that the unidentified controlled flight will be identified using SSR or ADS-B or the flight is being operated by an aircraft of a type which may be expected to give an adequate return on primary radar in the airspace within which the separation is applied; and
(2) The separation is maintained between identified flights and any other observed ADS-B and/or radar position indications until either the unidentified controlled flight has been identified or procedural separation has been established.

(i) The separation minima specified in GACAR §171.564 may be applied between an aircraft taking off and a preceding departing aircraft or other identified traffic provided there is reasonable assurance that the departing aircraft will be identified within 2 km (1 NM) from the end of the runway, and that, at the time, the required separation will exist.

(j) The separation minima specified in GACAR §171.564 must not be applied between aircraft holding over the same holding fix. Application of separation minima based on radar and/or ADS-B between holding aircraft and other flights must be subject to requirements and procedures prescribed by the ATS provider in Part 1 of the ATSPM.

§ 171.505 Speed Control.

Subject to authorization by the President, each ATS provider must provide and publish instructions for the application of speed control in Part 1 of the ATSPM.

SUBPART Q - CLEARANCES

§ 171.521 Clearances - General.

(a) Each ATS provider must publish instructions in Part 1 of the ATSPM relating to the issuance of clearances and detailing the procedures for providing ATC service to known traffic. Such procedures must contain, but are not limited to the following items:

(1) Clearance coordination
(2) Clearance validity
(3) Clearance issuance
(4) Clearance content
(5) Revised clearances
(6) Clearances out of controlled airspace
(7) Clearances coordination and downstream clearances.
(8) Conditional clearances.

(b) Air traffic control clearances must be based solely on the requirements for providing ATC service.

(c) ATSU must issues ATC clearances as are necessary to prevent collisions and to expedite and maintain an orderly flow of air traffic.

(d) ATC clearances must be issued early enough to ensure that they are transmitted to the aircraft in sufficient time for it to comply with it.

(e) The controller must listen to the read-back to ascertain that the clearance or instruction has been correctly acknowledged by the flight crew and must take immediate action to correct any discrepancies revealed by the read-back.

(f) Unless specified by the ATS provider, voice read-back of CPDLC messages must not be required.

(g) ATC clearance relating to the transonic acceleration phase of a supersonic flight must extend at least to the end of that phase.

(h) ATC clearance relating to the deceleration and descent of an aircraft from supersonic cruise to subsonic flight must provide for uninterrupted descent, at least during the transonic phase.

Note. — The procedures and provisions relating to the exchange and acknowledgement of CPDLC messages are contained in Annex 10, Volume II, and the PANS-ATM (Doc 4444), Chapter 14.

§ 171.523 Contents of Clearances.

All air traffic control clearances must be issued according to the requirements of ICAO PANS ATM Doc 4444 Paragraph 4.5. In particular, the following requirements must be observed or satisfied:

(a) Except as provided in (d) and (e), an ATC clearance must indicate:

(1) Aircraft identification as shown in the flight plan;
(2) Clearance limit;
(3) Route of flight;
(4) Level(s) of flight for the entire route or part thereof and changes of levels if required; and
(5) Any necessary instructions or information on other matters such as approach or departure maneuvers, communications and the time of expiry of the clearance.

(b) Instructions included in clearances relating to levels must consist of:

(1) Cruising level(s) or, for cruise climb, a range of levels, and, if necessary, the point to which the clearance is valid with regard to the level(s);
(2) Levels at which specified significant points are to be crossed, when necessary;
(3) The place or time for starting climb or descent, when necessary;
(4) The rate of climb or descent, when necessary; and
(5) Detailed instructions concerning departure or approach levels, when necessary.

(c) Standard clearances for departing aircraft must contain the following items:

(1) Aircraft identification;
(2) Clearance limit, normally destination aerodrome;
(3) Designator of the assigned SID, if applicable;
(4) Initial level, except when this element is included in the SID description;
(5) Allocated SSR code;
(6) Any other necessary instructions or information not contained in the SID description, e.g. instructions relating to change of frequency; and
(7) When necessary for the separation of aircraft, direction of takeoff and turn after takeoff; heading or track to be made good before taking up the cleared departure track; level to maintain before continuing climb to assigned level; time, point and/or rate at which a level change must be made;

and any other necessary maneuver consistent with safe operation of the aircraft.

(d) Standard clearances for arriving aircraft must contain the following items:

(1) Aircraft identification;
(2) Designator of the assigned STAR;
(3) Runway-in-use, except when part of the STAR description;
(4) Initial level, except when this element is included in the STAR description; and
(5) Any other necessary instructions or information not contained in the STAR description, e.g., change of communications.

(e) Conditional clearances using standard phraseology must to be given in the following order and must contain:

(1) Callsign of the aircraft or vehicle being given the clearance;
(2) The condition, e.g., “behind….”;
(3) Identification of the subject of the condition, e.g., aircraft, reporting point, level etc.;
(4) The clearance; and
(5) a brief reiteration of the condition.

(f) Clearances must contain positive and concise data and must, as far as practicable, be phrased in a standard manner.

§ 171.525 Aircraft Subject to ATC for Part of Flight.

(a) When a flight plan specifies that the initial portion of a flight will be uncontrolled, and that the subsequent portion of the flight will be subject to ATC, the aircraft must be advised to obtain its clearance from the ATCU in whose area controlled flight will be commenced.

(b) When a flight plan specifies that the first portion of a flight will be subject to ATC, and that the subsequent portion will be uncontrolled, the aircraft must normally be cleared to the point at which the controlled flight terminates.

§ 171.527 Flights Through Intermediate Stops.

(a) When an aircraft files, at the departure aerodrome, flight plans for the various stages of flight through intermediate stops, the initial clearance limit must be the first destination aerodrome and new clearances must be issued for each subsequent portion of flight.

(b) The flight plan for the second stage, and each subsequent stage, of a flight through intermediate stops must become active for ATS and search and rescue purposes only when the appropriate ATSU has received notification that the aircraft has departed from the relevant departure aerodrome, except as provided for in (c).

(c) By prior arrangement between ATCUs and the operators, aircraft operating on an established schedule may, if the proposed route of flight is through more than one control area, be cleared through intermediate stops within other control areas but only after coordination between the ACCs concerned.

§ 171.529 Departing Aircraft.

ACCs must, except where procedures providing for the use of standard departure clearances have been implemented, forward a clearance to APPs or TWRs with the least possible delay after receipt of request made by these units, or prior to such request if practicable.

§ 171.531 Enroute Aircraft.

(a) An ATCU may request an adjacent ATCU to clear aircraft to a specified point during a specified period.

(b) After the initial clearance has been issued to an aircraft at the point of departure, it will be the responsibility of the appropriate ATCU to issue an amended clearance whenever necessary and to issue traffic information, if required.

(c) When so requested by the flight crew, an aircraft must be cleared for cruise climb whenever traffic conditions and coordination procedures permit. Such clearance must be for cruise climb either above a specified level or between specified levels.

§ 171.533 Description of ATC Clearances.

(a) *Clearance limit.*

(1) A clearance limit must be described by specifying the name of the appropriate significant point, or aerodrome, or controlled airspace boundary.
(2) When prior coordination has been effected with units under whose control the aircraft will subsequently come, or if there is reasonable assurance that it can be effected a reasonable time prior to their assumption of control, the clearance limit must be the destination aerodrome or, if not practicable, an appropriate intermediate point, and coordination must be expedited so that a

clearance to the destination aerodrome may be issued as soon as possible.
(3) If an aircraft has been cleared to an intermediate point in adjacent controlled airspace, the appropriate ATCU must then be responsible for issuing, as soon as practicable, an amended clearance to the destination aerodrome.
(4) When the destination aerodrome is outside controlled airspace, the ATCU responsible for the last controlled airspace through which an aircraft will pass must issue the appropriate clearance for flight to the limit of that controlled airspace.

(b) *Route of flight.*

(1) The route of flight must be detailed in each clearance when deemed necessary. The phrase “cleared via flight planned route” may be used to describe any route or portion thereof, provided the route or portion thereof is identical to that filed in the flight plan and sufficient routing details are given to definitely establish the aircraft on its route. The phrases “cleared via (designation) departure” or “cleared via (designation) arrival” may be used when standard departure or arrival routes have been established by ATS provider, authorized by the President, and published in the KSA AIP.
(2) The phrase “cleared via flight planned route” must not be used when granting a re-clearance.
(3) Subject to airspace constraints, ATC workload and traffic density, and provided coordination can be effected in a timely manner, an aircraft must, whenever possible, be offered the most direct routing.

(c) *Levels*. Except as provided for in GACAR § 171.523(c) and (d), use of standard departure and arrival clearances, instructions included in clearances relating to levels must consist of the items specified in § 171.523(b).

(d) *Clearances of a requested change in flight plan.*

(1) When issuing a clearance covering a requested change in route or level, the exact nature of the change must be included in the clearance.
(2) When traffic conditions will not permit clearance of a requested change, the word “UNABLE” must be used in RTF phraseology. When warranted by circumstances, an alternative route or level must be offered.
(3) When an alternative route is offered and accepted by the flight crew under the procedures described in (2), the amended clearance issued must describe the route to the point where it joins the previously cleared route, or, if the aircraft will not re-join the previous route, to the destination.

§ 171.535 Horizontal Speed Control Instructions.

(a) Horizontal speed control must not be applied to aircraft entering or established in a holding pattern.

(b) In cases where the flight crew informs the ATCU they are unable to comply with a horizontal speed instruction the controller must apply an alternative method to achieve the desired spacing between the aircraft concerned.

(c) Aircraft must be advised when a horizontal speed control restriction is no longer required.

(d) Flight crews must be given adequate notice of planned speed control.

(e) Speed control instructions must remain in effect unless explicitly cancelled or amended by the controller

(f) Speed adjustments must be limited to those necessary to establish and/or maintain a desired separation minimum or spacing. Instructions involving frequent changes of speed, including alternate speed increases and decreases, must be avoided.

Note – application of speed control for prolonged periods may affect aircraft fuel reserves.

§ 171.536 Vertical Speed Control Instructions.

(a) Vertical speed control may be applied between two climbing aircraft or two descending aircraft in order to establish or maintain a specific vertical separation minimum.

(b) Vertical speed adjustments must be limited to those necessary to establish and/or maintain a desired separation minimum.

(c) Instructions involving frequent changes of climb/descent rates must be avoided.

(d) In cases when the flight crew informs the ATCU that they are unable to comply with a specified rate of climb or descent, the controller must apply an alternative method to achieve an appropriate separation minimum between aircraft, without delay.

(e) Aircraft must be advised when a rate of climb/descent restriction is no longer required.

§ 171.537 Coordination of Clearances.

Each ATC clearance must be coordinated between ATCUs to cover the entire route of an aircraft or a specified portion thereof as follows-

(a) An aircraft must be cleared for the entire route to the aerodrome of first intended landing:

(1) When it has been possible, prior to departure, to coordinate the clearance between all the units under whose control the aircraft will come; or
(2) When there is reasonable assurance that prior coordination will be effected between those units under whose control the aircraft will subsequently come.

Note. — Where a clearance is issued covering the initial part of the flight solely as a means of expediting departing traffic, the succeeding en-route clearance will be as specified above even though the aerodrome of first intended landing is under the jurisdiction of an ACC other than the one issuing the en-route clearance.

(b) When coordination as in (a) has not been achieved or is not anticipated, the aircraft must be cleared only to that point where coordination is reasonably assured; prior to reaching such point, or at such point, the aircraft must receive further clearance, holding instructions being issued as appropriate.

(c) When prescribed by the President, aircraft must contact a downstream air traffic control unit, for the purpose of receiving a downstream clearance prior to the transfer of control point.

(1) Aircraft must maintain the necessary two-way communication with the current ATCU while obtaining a downstream clearance.
(2) A clearance issued as a downstream clearance must be clearly identifiable as such to the pilot.
(3) Unless coordinated, downstream clearances must not affect the aircraft's original flight profile in any airspace, other than that of the ATCU responsible for the delivery of the downstream clearance.

Note. — Requirements relating to the application of downstream clearance delivery service are specified in GACAR Part 173 (Annex 10, Volume II). Guidance material is contained in the Manual of Air Traffic Services Data Link Applications (ICAO Doc. 9694).

(4) Where practicable, and where data link communications are used to facilitate downstream clearance delivery, two-way voice communications between the pilot and the ATCU providing the downstream clearance must be available.

(d) When an aircraft intends to depart from an aerodrome within a control area to enter another control area within a period of thirty minutes, or such other specific period of time as has been agreed between the ACCs concerned, coordination with the subsequent ACC must be effected prior to issuance of the departure clearance.

(e) When an aircraft intends to leave a control area for flight outside controlled airspace and will subsequently re-enter the same or another control area, a clearance from point of departure to the aerodrome of first intended landing may be issued. Such clearance or revisions thereto must apply only to those portions of the flight conducted within controlled airspace.

(f) Except as otherwise prescribed in (g) or in this section, coordination methods and standards, including messages, must be established in accordance with the coordination standard procedures prescribed by the International Civil Aviation Organization in ICAO Doc. 4444 (PANS-ATM) and as supplemented or modified by ICAO Regional Supplemental Procedures as specified in ICAO Doc. 7030.

SUBPART R - SEPARATION METHODS AND MINIMA

§ 171.561 General.

(a) Except as otherwise prescribed in paragraphs (b) and (c) of this section, the separation methods and minima applied within KSA as well as in the airspace over the high seas encompassed by the Jeddah FIR must be in accordance with the separation methods and minima as prescribed by the International Civil Aviation Organization in Chapters 5 and 6 of ICAO Doc. 4444 (PANS-ATM) and as supplemented or modified by ICAO Regional Supplemental Procedures as specified in ICAO Doc. 7030 and as specified in this subpart.

(b) Except as provided in GACAR § 171.565 to § 171.567, lower or different separation minima may only be utilized under the following conditions –

(1) The lower or different separation minima have been shown by a safety assessment to provide an acceptable level of safety;
(2) Operators have been consulted during the safety assessment process;
(3) The President has approved the lower or different separation minima; and
(4) The lower or different minima have been published in the KSA AIP where separation is based on the use by aircraft of specified navigation aids or specified navigation techniques.

(c) The selection of separation minima must be made in consultation between the appropriate ATS providers responsible for the provision of air traffic services in neighboring airspace when:

(1) Traffic will pass from one into the other of the neighboring airspaces;
(2) Routes are closer to the common boundary of the neighboring airspaces than the separation minima applicable in the circumstances.

(d) Each ATS provider must publish in Part 1 of the ATSPM all applicable separation methods and minima and their areas of application.

(e) Each ATS provider must ensure that details of the selected separation minima and of their areas of application have been notified to:

(1) the ATS units concerned, and
(2) pilots and operators through aeronautical information publications, where separation is based on the use by aircraft of specified navigation aids or specified navigation techniques.

§ 171.563 Types of Separation.

(a) Separation by an air traffic control unit must be obtained by at least one of the following:

(1) Vertical separation, obtained by assigning different levels selected from:

(i) The appropriate table of cruising levels in GACAR Part 91, or
(ii) A modified table of cruising levels, when so prescribed in accordance with Appendix 3 of ICAO Annex 2 for flight above FL 410, except that the correlation of levels to track as prescribed therein must not apply whenever otherwise indicated in air traffic control clearances;

(2) Horizontal separation obtained by providing:

(i) Longitudinal separation, by maintaining an interval between aircraft operating along the same, converging or reciprocal tracks, expressed in time or distance; or
(ii) Lateral separation, by maintaining aircraft on different routes or in different geographical areas.

(3) Composite separation, consisting of a combination of vertical separation and one of the other forms of separation contained in (2) above, using minima for each which may be lower than, but not less than half of, those used for each of the combined elements when applied individually. Composite separation must only be applied on the basis of regional air navigation agreements.

(b) For all airspace where a reduced vertical separation minimum of 1000 ft is applied between FL290 and FL 410 inclusive, a program must be instituted, on a regional basis, for monitoring the height-keeping performance of aircraft operating at these levels, in order to ensure that the implementation and continued application of this vertical separation minimum meets the safety objectives. The scope of regional monitoring programs must be adequate to conduct analyses of aircraft group performance and evaluate the stability of altimetry system error. Each ATS provider must report any height-keeping performance issues of aircraft identified during the provision of ATC services to the President and to the MID Regional Monitoring Agency (MID RMA) in accordance with established procedures.

(c) Where RCP/RSP specifications are applied, the ATS provider must ensure that programs have been instituted for monitoring the performance of the infrastructure and the participating aircraft against the appropriate RCP and/or RSP specifications, to ensure that operations in the applicable airspace continue to meet safety objectives. The scope of monitoring programs must be adequate to evaluate communication and/or surveillance performance, as applicable.

(d) Arrangements must be put in place, through interregional agreement, for the sharing between regions

of data from monitoring programs.

(e) Each ATS provider must describe, in detail, in Part 1 of the ATSPM the following types of separation minima:

(1) Vertical
(2) Horizontal
(3) Lateral
(4) Longitudinal
(5) Geographical
(6) Track
(7) Time
(8) Distance

(f) Each ATS provider must publish the specific procedures applicable to wake turbulence separation in Part 1 of the ATSPM and local geographical separation minima in Part 2 of the ATSPM for the unit.

(g) Wake turbulence separation minima must be based on a grouping of aircraft types into four categories according to the maximum certificated takeoff mass as follows:

(1) SUPER (J) — aircraft types specified as such in Doc 8643, Aircraft Type Designators;
(2) HEAVY (H) — All aircraft types of 136000 kg or more, with the exception of aircraft types listed in Doc 8643 in the SUPER (J) category;
(3) MEDIUM (M) — Aircraft types less than 136000 kg but more than 7000 kg; and
(4) LIGHT (L) — Aircraft types of 7000 kg or less.

(h)Wake turbulence separation minima are the spacings between aircraft, determined either by time or distance, to be applied so that aircraft do not fly through the wake of a preceding aircraft within the area of maximum vortices. Where the separation minima required for IFR flights are greater than the recommended separation for wake turbulence, the IFR separation minima shall be applied.

(i) When a flight is operating visually (i.e. IFR or SVFR operating under the reduced separation in the vicinity of aerodromes, VFR, or IFR making a visual approach) and is following or crossing behind another aircraft, the pilot must be informed of the recommended wake turbulence separation minima

§ 171.565 Separation Minima Based on ATS Surveillance Systems.

(a) Unless otherwise prescribed in accordance with (b) (with respect to radar), (c) or (d), or GACAR § 171.393 (with respect to independent and dependent parallel approaches), the horizontal separation

minimum based on radar and/or ADS-B and/or MLAT systems must be at least 9.3 km (5.0 NM).

(b) The separation minimum in (a) may, if authorized by the President, be reduced, but not below:

(1) 5.6 km (3.0 NM) when radar and/or ADS-B and/or MLAT systems' capabilities at a given location so permit; and
(2) 4.6 km (2.5 NM) between succeeding aircraft which are established on the same final approach track within 18.5 km (10 NM) of the runway threshold. A reduced separation minimum of 4.6 km (2.5 NM) may be applied, provided:

(i) The average runway occupancy time of landing aircraft is proven, by means such as data collection and statistical analysis and methods based on a theoretical model, not to exceed 50 seconds;
(ii) Braking action is reported as good and runway occupancy times are not adversely affected by runway contaminants such as slush, snow or ice;
(iii) A surveillance system with appropriate azimuth and range resolution and an update rate of 5 seconds or less is used in combination with suitable radar displays;
(iv) The aerodrome controller is able to observe, visually or by means of surface movement radar (SMR) or a surface movement guidance and control system (SMCGS), the runway-in-use and associated exit and entry taxiways;
(v) Distance-based wake turbulence separation minima do not apply;
(vi) Aircraft approach speeds are closely monitored by the controller and when necessary adjusted so as to ensure that separation is not reduced below the minimum;
(vii) Aircraft operators and pilots have been made fully aware of the need to exit the runway in an expeditious manner whenever the reduced separation minimum on final approach is applied; and
(viii) Procedures concerning the application of the reduced minimum are published in the KSA AIP.

(c) The separation minimum or minima based on radar and/or ADS-B to be applied must be authorized by the President according to the capability of the particular ADS-B or radar system or sensor to accurately identify the aircraft position in relation to the center of a position symbol, PSR blip, SSR response and taking into account factors which may affect the accuracy of the ADS-B and/or radar-derived information, such as aircraft range from the radar site and the range scale of the situation display in use.

(d) The following distance-based wake turbulence separation minima must be applied to aircraft being provided with an ATS surveillance service in the approach and departure phases of flight in the circumstances given in Table 171-1.

Aircraft Category		*Distance-Based Wake Turbulence Separation Minima*
Preceding Aircraft	***Succeeding Aircraft***	
SUPER	Heavy	5.0 NM
	Medium	7.0 NM
	Light	8.0 NM
Heavy	Heavy	4.0 NM
	Medium	5.0 NM
	Light	6.0 NM
Medium	Light	5.0 NM

Table171–1 Distance-Based Wake Turbulence Separation Minima

(e) The minima set out in (d) must be applied when:

(1) An aircraft is operating directly behind another aircraft at the same altitude or less than1000 ft below; or
(2) Both aircraft are using the same runway, or parallel runways separated by less than 2500 ft (760m) ; or
(3) An aircraft is crossing behind another aircraft, at the same altitude or less than 1000 ft below.

§ 171.567 Reduction in Separation Minima in the Vicinity of Aerodromes.

The separation minima prescribed in GACAR § 171.561(a) may be reduced in the vicinity of aerodromes if:

(a) Adequate separation can be provided by the aerodrome controller when each aircraft is continuously visible to this controller;

(b) Each aircraft is continuously visible to flight crews of the other aircraft concerned and the pilots thereof report that they can maintain their own separation; or

(c) In the case of one aircraft following another, the flight crew of the succeeding aircraft reports that the

other aircraft is in sight and separation can be maintained.

§ 171.569 Reduction in Separation Minima Between Aircraft Using the Same Runway.

(a) Provided that an appropriate, documented safety assessment that is acceptable to the President has shown that an acceptable level of safety can be met, lower minima than those in GACAR §171.323(a) and §171.325(a) may be used. The safety assessment must be carried out for each runway for which the reduced minima are intended, taking into account factors such as:

(1) Runway length;
(2) Aerodrome layout; and
(3) Types/categories of aircraft involved.

(b) All applicable procedures related to the application of reduced runway separation minima must be published in the KSA AIP as well as in Parts 1 and 2 of the ATSPM. Controllers must be provided with appropriate and adequate training in the use of the procedures.

(c) Reduced runway separation minima must only be applied during the hours of daylight from 30 minutes after local sunrise to 30 minutes before local sunset.

(d) For the purpose of reduced runway separation, aircraft must be classified as follows:

(1) Category 1 aircraft: single-engine propeller aircraft with a maximum certificated takeoff mass of 2000 kg or less;
(2) Category 2 aircraft: single-engine propeller aircraft with a maximum certificated takeoff mass of more than 2000 kg but less than 7000 kg; and twin-engine propeller aircraft with a maximum certificated takeoff mass of less than 7000 kg;
(3) Category 3 aircraft: all other aircraft.

(e) Reduced runway separation minima must not apply between a departing aircraft and a preceding landing aircraft.

(f) Reduced runway separation minima must be subject to the following conditions:

(1) Wake turbulence separation minima must be applied;
(2) Visibility must be at least 5 km and ceiling must not be lower than 1000 ft;
(3) Tailwind component must not exceed 5 kt;

(4) There must be available means, such as suitable landmarks, to assist the controller in assessing the distances between aircraft. A surface surveillance system that provides the air traffic controller with position information on aircraft may be utilized, provided that approval for operational use of such equipment includes a safety assessment to ensure that all requisite operational and performance requirements are met;
(5) Minimum separation continues to exist between two departing aircraft immediately after takeoff of the second aircraft;
(6) Traffic information must be provided to the flight crew of the succeeding aircraft concerned; and
(7) The braking action must not be adversely affected by runway contaminants such as ice, slush, snow, sand and water.

(g) Reduced runway separation minima which may be applied at an aerodrome must be determined for each separate runway. The separation to be applied must in no case be less than the following minima:

(1) Landing aircraft.

(i) A succeeding landing Category 1 aircraft may cross the runway threshold when the preceding aircraft is a Category 1 or 2 aircraft which either:

(A) Has landed and has passed a point at least 600 m from the threshold of the runway, is in motion and will vacate the runway without backtracking; or
(B) Is airborne and has passed a point at least 600 m from the threshold of the runway;

(ii) A succeeding landing Category 2 aircraft may cross the runway threshold when the preceding aircraft is a Category 1 or 2 aircraft which either:

(A) Has landed and has passed a point at least 1500 m from the threshold of the runway, is in motion and will vacate the runway without backtracking; or
(B) Is airborne and has passed a point at least 1500 m from the threshold of the runway;

(iii) A succeeding landing aircraft may cross the runway threshold when a preceding Category 3 aircraft:

(A) Has landed and has passed a point at least 2400 m from the threshold of the runway, is in motion and will vacate the runway without backtracking; or
(B) Is airborne and has passed a point at least 2400 m from the threshold of the runway;

(2) Departing aircraft.

(i) A Category 1 aircraft may be cleared for takeoff when the preceding departing aircraft is a Category 1 or 2 aircraft which is airborne and has passed a point at least 600 m from the position of the succeeding aircraft;
(ii) A Category 2 aircraft may be cleared for takeoff when the preceding departing aircraft is a Category 1 or 2 aircraft which is airborne and has passed a point at least 1500 m from the position of the succeeding aircraft; and
(iii) An aircraft may be cleared for takeoff when a preceding departing Category 3 aircraft is airborne and has passed a point at least 2400 m from the position of the succeeding aircraft.

(f) Consideration must be given to increased separation between high performance single-engine aircraft and preceding Category 1 or 2 aircraft.

§ 171.571 Reduction in Separation Minima for Military Traffic.

A reduction of separation minima required by military necessity or other extraordinary circumstances may only be accepted by an ATCU when a specific request in some recorded form has been obtained from the authority having jurisdiction over the aircraft concerned and the lower minima then to be observed may apply only between those aircraft. Some recorded form of instruction fully covering this reduction of separation minima must be issued by the ATCU concerned.

SUBPART S - SPECIAL PROCEDURES

§ 171.581 General.

(a) Each ATS provider must publish any non-standard procedures in Parts 1 and 2 of the ATSPM in order to provide instructions for the controllers. By nature, such procedures can never be comprehensive, but the published procedures must include all relatively frequent occurring situations.

(b) Except as provided for in (c), each ATS provider must ensure that the special procedures in this subpart comply with the applicable standard procedures prescribed by the International Civil Aviation Organization in ICAO Doc. 4444 (PANS-ATM).

§ 171.583 Fuel Dumping.

Each ATS provider must –

(a) Publish general instructions in Part 1 of the ATSPM relating to fuel dumping. Specifically, controllers must be made aware of the following provisions of ICAO Doc 4444 (PANS-ATM) Section 15.5.3.1:

(1) An aircraft in an emergency or other urgent situation may need to dump fuel so as to reduce to maximum landing mass in order to effect a safe landing.
(2) When an aircraft operating within controlled airspace needs to dump fuel, the flight crew must advise ATC. The ATC unit should then coordinate with the flight crew the following:

(i) The route to be flown, which, if possible, should be clear of cities and towns, preferably over water and away from areas where thunderstorms have been reported or are expected;
(ii) The level to be used, which should be not less than 6 000 ft; and
(iii) The duration of the fuel dumping.

(b) Publish the separation requirements of ICAO Doc 4444 (PANS-ATM) Section 15.5.3.2 relating to an aircraft dumping fuel and all other known aircraft in Part 1 of the ATSPM. Other known traffic must be separated from the aircraft dumping fuel by:

(1) At least 10 NM horizontally, but not behind the aircraft dumping fuel;
(2) Vertical separation if behind the aircraft dumping fuel within 15 minutes flying time or a distance of 50 NM by:

(i) At least 1 000 ft if above the aircraft dumping fuel; and
(ii) At least 3 000 ft if below the aircraft dumping fuel.

(3) The horizontal boundaries of the area within which other traffic requires appropriate vertical separation must extend for 10 NM either side of the track flown by the aircraft which is dumping fuel, from 10 NM ahead, to 50 NM or 15 minutes along track behind it (including turns).

(c) Publish the communication and coordination requirements relating to fuel dumping operations in Part 1 of the ATSPM.

(1) If the aircraft will maintain radio silence during the fuel dumping operation, the frequency to be monitored by the flight crew and the time when radio silence will terminate must be agreed.
(2) A warning message must be broadcast on appropriate frequencies for non-controlled traffic to remain clear of the area concerned. Adjacent ATC units and control sectors must be informed of the fuel dumping taking place and requested to broadcast on applicable frequencies an appropriate warning message for other traffic to remain clear of the area concerned.
(3) Upon completion of the fuel dumping, adjacent ATC units and control sectors must be advised that normal operations can be resumed.

(d) Publish instructions in Part 2 of the ATSPM for locations suitable for fuel dumping.

(e) Each ATS Provider must publish general instructions in Part 1 of the ATSPM relating to fuel emergency and minimum fuel. Specifically, controllers must inform the pilot as soon as practicable of any anticipated delays or that no delays are expected when a pilot reports a state of minimum fuel.

§ 171.585 Photographic Survey Flights.

Each ATS provider must publish comprehensive instructions concerning aircraft carrying out aerial surveys in Part 1 of the ATSPM.

§ 171.587 Uncoordinated Flights Within the Red Sea.

Each ATS provider must publish procedures in the KSA AIP and Part 2 of the ATSPM for uncoordinated flights over the Red Sea for both RVSM and non-RVSM aircraft.

§ 171.588 Strayed VFR flights and VFR flights encountering adverse meteorological conditions.

(a) A VFR flight reporting that it is uncertain of its position or lost, or encountering adverse meteorological conditions, must be considered to be in a state of emergency and handled as such. The controller must, under such circumstances, communicate in a clear, concise and calm manner and care must be taken, at this stage, not to question any fault or negligence that the pilot may have committed in the

preparation or conduct of the flight.

(b) Each ATS provider must publish instructions concerning the handling of strayed VFR aircraft and VFR flights encountering adverse meteorological conditions in Part 1 of the ATSPM.

§ 171.589 Strayed or Unidentified Aircraft.

(a) As soon as an ATSU becomes aware of a strayed aircraft it must take all necessary steps in accordance with the relevant standards and requirements in force and published in Part 1 of the ATSPM to assist the aircraft and to safeguard its flight.

(b) If the aircraft's position is not known, the ATSU must:

(1) Attempt to establish two-way communication with the aircraft, unless such communication already exists;
(2) Use all available means to determine its position;
(3) Inform other ATSUs into whose area the aircraft may have strayed or may stray, taking into account all the factors which may have affected the navigation of the aircraft in the circumstances;
(4) Inform, in accordance with locally agreed procedures, appropriate military units and provide them with pertinent flight plan and other data concerning strayed aircraft; and
(5) Request from the units noted in (3) and (4) and from other aircraft in flight every assistance in establishing communication with the aircraft and determining its position.

(c) When the aircraft's position is established, the ATSU must:

(1) Advise the aircraft of its position and corrective action to be taken; and
(2) Provide, as necessary, other ATSUs and appropriate military units with relevant information concerning the strayed aircraft and any advice given to that aircraft.

(d) As soon as an ATSU becomes aware of an unidentified aircraft in its area, it must endeavor to establish the identity of the aircraft whenever this is necessary for the provision of air traffic services or required by the appropriate military authorities in accordance with locally agreed procedures as published in Part 2 of the ATSPM. To this end, the ATSU must take such of the following steps as are appropriate in the circumstances:

(1) Attempt to establish two-way communication with the aircraft;
(2) Inquire of other ATSUs within the FIR about the flight and request their assistance in

establishing two-way communication with the aircraft;
(3) Inquire of other ATSUs serving the adjacent FIR about the flight and request their assistance in establishing two-way communication with the aircraft; and
(4) Attempt to obtain information from other aircraft in the area.

(e) The ATSU must, as necessary, inform the appropriate military unit as soon as the identity of the aircraft has been established.

(f) The ATSU must consider that a strayed or unidentified aircraft may be the subject of unlawful interference, the appropriate authorities must immediately be informed, in accordance with Part 2 of the ATSPM.

Note.— Navigational assistance by an air traffic services unit is particularly important if the unit becomes aware of an aircraft straying, or about to stray, into an area where there is a risk of interception or other hazard to its safety.

§ 171.591 Interception of Civil Aircraft.

(a) As soon as an ATSU learns that an aircraft is being intercepted in its area of responsibility, it must take such of the following steps as are appropriate in the circumstances:

(1) Attempt to establish two-way communication with the intercepted aircraft via any means available, including the emergency radio frequency 121.5 MHz, unless such communication already exists;
(2) Inform the pilot of the intercepted aircraft of the interception;
(3) Establish contact with the intercept control unit maintaining two-way communication with the intercepting aircraft and provide it with available information concerning the aircraft;
(4) Relay messages between the intercepting aircraft or the intercept control unit and the intercepted aircraft, as necessary;
(5) In close coordination with the intercept control unit take all necessary steps to ensure the safety of the intercepted aircraft; and
(6) Inform ATSUs serving adjacent FIRs if it appears that the aircraft has strayed from such adjacent flight information regions.

(b) As soon as an ATSU learns that an aircraft is being intercepted outside its area of responsibility, it must take such of the following steps as are appropriate in the circumstances:

(1) Inform the ATSU serving the airspace in which the interception is taking place, providing this

unit with available information that will assist in identifying the aircraft and requesting it to take action in accordance with (a); and
(2) Relay messages between the intercepted aircraft and the appropriate ATSU, the intercept control unit or the intercepting aircraft.

(c) Each ATS provider must-

(1) Publish procedures to be followed by the controller in the event of notification that a civil aircraft is being intercepted in Part 1 of the ATSPM. These procedures must comply with procedures prescribed in (a) and (b) of this section; and
(2) Publish tables in Part 1 of the ATSPM showing interception and response actions, signals and phraseology between the aircraft for controller information. Specifically, this must include tables shown at ICAO Annex 2 Appendix 1 Section 2, and text and tables shown at ICAO Annex 2 Appendix 2 Sections 2 and 3.

§ 171.593 Potential Hazards to Civil Aircraft.

Each ATS provider must -

(a) Take adequate steps to prevent emission of laser beams from adversely affecting flight operations.

(b) Provide instructions to controllers to avoid potential hazards to aircraft under their control. It is not possible to list all potential hazards, but each ATS provider must provide a comprehensive list covering the most likely scenarios within Jeddah FIR and publish the procedures in Part 1 of the ATSPM; and

(c) Ensure that all relevant authorities and users are informed of any potential hazards.

Note — Guidance material regarding the hazardous effects of laser emitters on flight operations is contained in the Manual on Laser Emitters and Flight Safety (Doc 9815).

§ 171.595 Unmanned Free Balloons.

(a) Each ATS provider must incorporate with Part 1 of the ATSPM information on, and requirements for, operation of unmanned free balloons as described in ICAO Annex 2 Appendix 5, and as follows.

(b) On receipt of notification of the intended flight of a medium or heavy unmanned free balloon, the ATSU must arrange for the information to be disseminated to all concerned. The information must include:

(1) The balloon flight identification or project code name;
(2) Balloon classification and description;
(3) SSR code or NDB frequency as applicable;
(4) The launch site;
(5) The estimated time of the commencement of the launch or the planned period of the launches;
(6) The expected direction of ascent;
(7) The cruising level(s) (pressure-altitude); and
(8) The estimated elapsed time to pass 60000 ft pressure-altitude, or to reach cruising level if at or below 60000ft, together with the estimated location.

(c) On receipt of notification that a medium or heavy unmanned free balloon has been launched, the ATSU must arrange for the information to be disseminated to all concerned. The information must include:

(1) The information list in (a);
(2) The estimated date and time of termination of the flight; and
(3) The planned location of ground contact, when applicable.

(d) When there is reasonable expectation that a heavy or medium unmanned free balloon will cross international borders, the appropriate ATSU must arrange for the pre-launch and the launch notifications to be sent by NOTAM to the ATS unit(s) in the State(s) concerned. If agreed between the States concerned, the launch notification may be transmitted orally by direct ATS speech circuit between the ACCs/FICs involved.

(e) ATSU must maintain radar and/or ADS-B surveillance of medium and heavy unmanned free balloons to the extent possible and, if necessary and on the request of the pilot of an aircraft, provide separation using an ATS surveillance system between the aircraft and such balloons which are identified, or their exact position is known.

§ 171.597 Unmanned and Remotely Piloted Aircraft.

(a) Each ATS provider must incorporate in their ATSPM Part 1 and Part 2 information on, and requirements for, the operation of unmanned and Remotely Piloted Aircraft near aerodromes, and within controlled airspace. The requirements should cover at least the following:

(1) Strategic conflict management: This is generally considered to be the planning phase where sufficient data is obtained for the execution of the flight;
(2) Separation provision to ensure the safe execution of the flight depending on the airspace classification;

(3) Conflicts resolution actions to resolve conflicts between unmanned and remotely piloted aircraft and other traffic;
(4) ATC Voice and Data Link Communications covering the communications links between ATC and remote pilot;
(5) Procedures for the coordination and monitoring of Visual Line-Of-Sight operations (VLOS) of unmanned aircraft during daytime and at night;
(6) Procedures for the coordination and monitoring of beyond VLOS (BVLOS) of unmanned and remotely piloted aircraft during daytime and at night;
(7) ATC communications with remote pilot before, during and after unmanned aircraft operations including any alternate means of communication, communications failure, and emergency with remote pilot;
(8) Procedures for coordination and monitoring of unmanned Aircraft operations at or in proximity of aerodrome(s);
(9) The handling of emergencies and contingencies associated with the operations of unmanned aircraft.
(10) Reporting of ATS incidents involving unmanned and remotely piloted aircraft.

§ 171.599 Air Traffic Incident Reports.

(a) Each ATS provider must establish procedures, and publish them in Part 1 of the ATSPM, for the reporting of ATS related air traffic incidents and occurrences.

(b) An air traffic incident report must be submitted, normally to the manager of the air traffic services unit concerned, for incidents specifically related to the provision of air traffic services involving such occurrences as aircraft proximity (AIRPROX), or other serious difficulty resulting in a hazard to aircraft, caused by, among others, faulty procedures, non-compliance with procedures, or failure of ground facilities.

(c) Procedures should be established for the reporting of aircraft proximity incidents and their investigation to promote the safety of aircraft. The degree of risk involved in an aircraft proximity should be determined in the incident investigation and classified as “risk of collision”, “safety not assured”, “no risk of collision” or “risk not determined”.

§ 171.601 Repetitive Flight Plans (RPL).

(a) RPLs must not be used for flights other than IFR flights operated regularly on the same day(s) of consecutive weeks and on at least ten occasions or every day over a period of at least ten consecutive days. The elements of each flight plan must have a high degree of stability.

(b) RPLs must cover the entire flight from the departure aerodrome to the destination aerodrome. RPL procedures must be applied only when all ATS authorities concerned with the flights have agreed to accept RPLs.

(c) The use of RPLs for international flight may only be used when the affected adjacent States either already use RPLs or will use them at the same time. The procedures for use between States must be the subject of bilateral, multilateral or Regional Air Navigation Agreement as appropriate.

(d) Each ATS provider using RPLs must designate one or more agencies responsible for administering such data. The area of responsibility for any such designated agency must be at least one FIR. However, part or the entire area of responsibility of one or more States may be administered jointly by a designated agency. Each designated agency must distribute relevant RPL data to the ATSUs concerned within its area of responsibility so that such data reach these units in sufficient time to become effective.

(e) RPLs must be stored by each ATSU concerned in a manner that will ensure that they are systematically activated on the appropriate day of operation in the order of estimated times indicative of entry into the unit's area of responsibility. Activation must be accomplished in sufficient time to present the data to the controller in appropriate form for analysis and control action.

(f) Each ATS provider using RFP when obliged, due to exceptional circumstances, to temporarily suspend the use of RPLs in its area of responsibility, or a specified part thereof, must publish notice of such suspension with as much advance notice as possible and in the most suitable form considering the circumstances.

(g) ATS messages relating to individual flights operating on an RPL must be originated and addressed to ATSUs concerned in a manner identical to that used for flights operating on individual flight plans.

§ 171.603 Notification of Suspected Communicable Disease or other Public Health Risk Aboard an Aircraft.

(a) Each ATSU, upon receipt of information from a pilot regarding suspected case(s) of communicable disease, or other public health risk, on board the aircraft, must forward a message as soon as possible to the ATSU serving the destination/departure, unless procedures exist to notify the appropriate authority designated by the President and the aircraft operator or its designated representative.

(b) The receiving ATSU must ensure that the information received from a pilot includes:

(1) Aircraft identification;
(2) Departure aerodrome;
(3) Destination aerodrome;
(4) Estimated time of arrival;
(5) Number of persons on board;
(6) Number of suspected cases on board; and
(7) Nature of the public health risk, if known.

(c) When a report of a suspected case(s) of communicable disease, or other public health risk, on board an aircraft is received by an ATSU serving the destination/departure, from another ATSU or from an aircraft or an aircraft operator, the unit concerned must forward a message as soon as possible to the public health authority (PHA) or the appropriate authority designated by the President as well as the aircraft operator or its designated representative, and the aerodrome operator.

SUBPART T - ALERTING SERVICE

§ 171.621 General.

(a) Each ATS provider must provide alerting service –

(1) For all aircraft provided with ATC service;
(2) In so far as practicable, to all other aircraft having filed a flight plan or otherwise known to the air traffic services; and
(3) To any aircraft known or believed to be the subject of unlawful interference.

(b) FICs or ACCs must serve as the central point for collecting all information relevant to a state of emergency of an aircraft operating within the FIR or control area concerned and for forwarding such information to the appropriate RCC.

(c) In the event of a state of emergency arising to an aircraft while it is under the control of a TWR or APP, such unit must notify immediately the FIC or ACC responsible which must in turn notify the RCC, except that notification of the ACC, FIC, or RCC is not required when the nature of the emergency is such that the notification would be superfluous. Nevertheless, whenever the urgency of the situation so requires, the TWR or APP responsible must first alert and take other necessary steps to set in motion all appropriate local rescue and emergency organizations which can give the immediate assistance required.

(d) When alerting service is required in respect of a flight operated through more than one FIR or control area, and when the position of the aircraft is in doubt, responsibility for coordinating such service must rest with the ATSU of the FIR or control area:

(1) Within which the aircraft was flying at the time of last air-ground radio contact;
(2) That the aircraft was about to enter when last air-ground contact was established at or close to the boundary of two FIRs or control areas;
(3) Within which the aircraft’s intermediate stop or final destination point is located:

(i) If the aircraft was not equipped with suitable two-way radio communication equipment; or
(ii) mWas not under obligation to transmit position reports.

(e) Each ATS provider must stipulate who has the overall responsibility for the provision of alerting service and whom to notify and publish details in Part 1 of the ATSPM.

§ 171.623 Notification of RCCs.

(a) Without prejudice to any other circumstances that may render such notification advisable, ATSUs must, except as prescribed in § 171.629(a), notify RCCs immediately when an aircraft is considered to be in a state of emergency in accordance with the following:

(1) Uncertainty phase when:

(i) No communication has been received from an aircraft within a period of thirty minutes after the time a communication should have been received, or from the time an unsuccessful attempt to establish communication with such aircraft was first made, whichever is the earlier; or when
(ii) An aircraft fails to arrive within thirty minutes of the estimated time of arrival last notified to or estimated by ATSUs, whichever is the later, except when no doubt exists as to the safety of the aircraft and its occupants.

(2) Alert phase when:

(i) Following the uncertainty phase, subsequent attempts to establish communication with the aircraft or inquiries to other relevant sources have failed to reveal any news of the aircraft; or when
(ii) An aircraft has been cleared to land and fails to land within five minutes of the estimated time of landing and communication has not been re-established with the aircraft; or when
(iii) Information has been received which indicates that the operating efficiency of the aircraft has been impaired, but not to the extent that a forced landing is likely, except when evidence exists that would allay apprehension as to the safety of the aircraft and its occupants; or when
(iv) An aircraft is known or believed to be the subject of unlawful interference.

(3) Distress phase when:

(i) Following the alert phase, further unsuccessful attempts to establish communication with the aircraft and more widespread unsuccessful inquiries point to the probability that the aircraft is in distress; or when
(ii) The fuel on board is considered to be exhausted, or to be insufficient to enable the aircraft to reach safety; or when
(iii) Information is received which indicates that the operating efficiency of the aircraft has been impaired to the extent that a forced landing is likely; or when
(iv) Information is received, or it is reasonably certain that the aircraft is about to make or has made a forced landing, except when there is reasonable certainty that the aircraft and its

occupants are not threatened by grave and imminent danger and do not require immediate assistance.

(b) The notification must contain such of the following information as is available in the order listed:

(1) INCERFA, ALERFA or DETRESFA, as appropriate to the phase of the emergency; (2) Agency and person calling;
(3) Nature of the emergency;
(4) Significant information from the flight plan;
(5) Unit which made last contact, time and means used;
(6) Last position report and how determined;
(7) Color and distinctive marks of aircraft;
(8) Dangerous goods carried as cargo;
(9) Any action taken by reporting office; and
(10) Other pertinent remarks.

(c) Such part of the information specified in §171.623(b), which is not available at the time notification is made to a rescue coordination center, must be sought by an air traffic services unit prior to the declaration of a distress phase, if there is reasonable certainty that this phase will eventuate.

(d) Further to the notification in (a), the RCC must, without delay, be furnished with:

(1) Any useful additional information, especially on the development of the state of emergency through subsequent phases; or
(2) Information that the emergency situation no longer exists.

§ 171.625 Use of Communication Facilities.

ATSUs must, as necessary, use all available communication facilities to endeavor to establish and maintain communication with an aircraft in a state of emergency, and to request news of the aircraft.

§ 171.629 Information to the Operator.

(a) When an ACC or a FIC decides that an aircraft is in the uncertainty or the alert phase, it must, when practicable, advise the operator prior to notifying the RCC.

(b) All information notified to the RCC by an ACC or FIC must, whenever practicable, also be

communicated, without delay, to the operator.

§ 171.631 Information to Aircraft Operating in the Vicinity of an Aircraft in a State of Emergency.

(a) When it has been established by an ATSU that an aircraft is in a state of emergency, other aircraft known to be in the vicinity of the aircraft involved must, except as provided in bullet (b) below, be informed of the nature of the emergency as soon as practicable.

(b) When an ATSU knows or believes that an aircraft is being subjected to unlawful interference, no reference must be made in ATS air-ground communications to the nature of the emergency unless it has first been referred to in communications from the aircraft involved and it is certain that such reference will not aggravate the situation.

§ 171.633 Handling and Reporting Accidents and Incidents.

(a) Consistent with GACAR § 171.596, each ATS provider must publish procedures in Parts 1 and 2 of the ATSPM to be followed by all ATSU(s) concerning-

(1) Reporting of any incident or accident.
(2) Coordination procedures for adjacent ATSUs that might be affected by the incident/accident.

(b) Each ATS provider must provide all ATSUs with incident/accident report forms that have to be completed as early as practical and forwarded according to reporting procedures.

SUBPART U - EMERGENCIES

§ 171.641 General.

(a) An aircraft known or believed to be in a state of emergency, including being subjected to unlawful interference, must be given maximum consideration, assistance and priority over other aircraft as may be necessitated by the circumstances.

(b) Each ATS provider must provide instructions for controllers relating to an aircraft declaring or appearing to be in an emergency situation, and those instructions must be published in Part 1 of the ATSPM.

(c) In communications between ATS units and aircraft in the event of an emergency, Human Factors principles must be observed.

Note.— Guidance material on Human Factors principles can be found in the Human Factors Training Manual (Doc 9683).

(d) The progress of an aircraft in emergency must be monitored and (whenever possible) plotted on the situation display until the aircraft passes out of coverage of the ATS surveillance system, and position information must be provided to all air traffic services units which may be able to give assistance to the aircraft. Transfer to adjacent sectors must also be effected when appropriate.

(e) If the pilot of an aircraft encountering a state of emergency has previously been directed by ATC to select a specific transponder code and/or an ADS-B emergency mode, that code/mode will normally be maintained unless, in special circumstances, the pilot has decided or has been advised otherwise. Where ATC has not requested a code or emergency mode to be set, the pilot will set the transponder to Mode A Code 7700 and/or the appropriate ADS-B emergency mode.

(f) Whenever a general ADS-B emergency alert is observed on the situation display and there is no other indication of the particular nature of the emergency, the controller must take the following action:

(1) attempt to establish communication with the aircraft to verify the nature of the emergency; or
(2) if no response is received from the aircraft, the controller must attempt to ascertain if the aircraft is able to receive transmissions from the air traffic control unit by requesting it to execute a specified maneuver which can be observed on the situation display.

Note. — To indicate that it is in a state of emergency, an aircraft equipped with an appropriate data

link capability and/or an SSR transponder might operate the equipment as follows:

1) on Mode A, Code 7700; or
2) on Mode A, Code 7500, to indicate specifically that it is being subjected to unlawful interference; and/or
3) activate the appropriate emergency and/or urgency capability of ADS-B or ADS-C; and/or
4) transmit the appropriate emergency message via CPDLC.

§ 171.643 Signals.

(a) Each ATS provider must publish guidance that will assist controllers in identifying either a distress or an urgency situation. This guidance must be published in Part 1 of the ATSPM.

(b) In particular, each ATS provider must publish guidance relating to distress and urgency signals as described in Appendix 1 of Annex 2 to the Convention of International Civil Aviation.

§ 171.645 Unlawful Interference and Aircraft Bomb Threat.

(a) Each ATS provider must ensure ATS personnel are prepared to recognize any indication of the occurrence of unlawful interference with an aircraft.

(b) Whenever unlawful interference with an aircraft is suspected, and where automatic distinct display of SSR Mode A Code 7500 and Code 7700 is not provided, the controller must attempt to verify any suspicion by setting the SSR decoder to Mode A Code 7500 and thereafter to Code 7700.

(c) When an occurrence of unlawful interference with an aircraft takes place or is suspected, ATS units must attend promptly to requests by the aircraft. Information pertinent to the safe conduct of the flight shall continue to be transmitted and necessary action must be taken to expedite the conduct of all phases of the flight, especially the safe landing of the aircraft.

(d) When an occurrence of unlawful interference with an aircraft takes place or is suspected, ATS units must, in accordance with locally agreed procedures, immediately inform the appropriate authority designated by the State and exchange necessary information with the operator or its designated representative.

(e) ATSUs must also:

(1) Transmit, and continue to transmit, information pertinent to the safe conduct of the flight, without

expecting a reply from the aircraft;
(2) Monitor and plot the progress of the flight with the means available, and coordinate transfer of control with adjacent ATSUs without requiring transmissions or other responses from the aircraft, unless communication with the aircraft remains normal;
(3) Inform, and continue to keep informed, appropriate ATSUs, including those in adjacent FIRs, which may be concerned with the progress of the flight;
(4) Notify:

(i) The operator or its designated representative;

(ii) The appropriate RCC in accordance with appropriate alerting procedures;

(iii) Any other authority or organization prescribed by the President.

(5) Relay appropriate messages, relating to the circumstances associated with the unlawful interference, between the aircraft and designated authorities.

(f) The following additional procedures must apply if a threat is received indicating that a bomb or other explosive device has been placed on board a known aircraft. The ATSU receiving the threat information must:

(1) If in direct communication with the aircraft, advise the flight crew without delay of the threat and the circumstances surrounding the threat; or
(2) If not in direct communication with the aircraft, advise the flight crew by the most expeditious means through other ATSUs or other channels.

(g) The ATSU in communication with the aircraft must ascertain the intentions of the flight crew and report those intentions to other ATSUs which may be concerned with the flight.

(h) The aircraft must be handled in the most expeditious manner while ensuring, to the extent possible, the safety of other aircraft and that personnel and ground installations are not put at risk.

(i) Aircraft in flight must be given re-clearance to a requested new destination without delay. Any request by the flight crew to climb or descend for the purpose of equalizing or reducing the differential between the outside air pressure and the cabin air pressure must be approved as soon as possible.

(j) An aircraft on the ground must be advised to remain as far away from other aircraft and installations as possible and, if appropriate, to vacate the runway. The aircraft must be instructed to taxi to a designated or isolated parking area in accordance with local instructions. When the flight crew disembark passengers,

other aircraft, vehicles and personnel must be kept at a safe distance from the threatened aircraft.

(k) ATS units must not provide any advice or suggestions concerning action to be taken by the flight crew in relation to an explosive device.

(l) An aircraft known or believed to be the subject of unlawful interference or which for other reasons needs isolation from normal aerodrome activities must be cleared to the designated isolated parking position. Where such an isolated parking position has not been designated, or if the designated position is not available, the aircraft must be cleared to a position within the area or areas selected by prior agreement with the aerodrome authority. The taxi clearance must specify the taxi route to be followed to the parking position. This route must be selected with a view to minimizing any security risks to the public, other aircraft and installations at the aerodrome.

(m) Recommended phraseologies to be used if the aircraft is in two-way radio contact must be published in Parts 1 and 2 of the ATSPM.

§ 171.647 Radio Communication Failure.

(a) Each ATS provider must publish procedures to be followed when either an airborne or ground-based radio station appears unable to establish two-way communication. This must include expected actions by the aircraft in the event of major communication failures. These procedures must be included in Part 1 of the ATSPM.

(b) Air-ground communication failure. Action by ATCUs when unable to maintain two-way communication with an aircraft operating in a control area or control zone must be as outlined in this paragraph.

(1) As soon as it is known that two-way communication has failed, action must be taken to ascertain whether the aircraft is able to receive transmissions from the air traffic control unit by requesting it to execute a specified maneuver which can be observed by radar or ADS-B or to transmit, if possible, a specified signal in order to indicate acknowledgement. Any maneuvering instructions must be such that the aircraft would regain its current cleared track after having complied with the instructions received. Where it has been established that the aircraft's radio receiver is functioning, continued control can be effected using SSR code/ADS-B transmission changes or IDENT transmissions to obtain acknowledgement of clearances issued to the aircraft.
(2) If the aircraft fails to indicate that it is able to receive and acknowledge transmissions, separation must be maintained between the aircraft having the communication failure and other aircraft, based on

the assumption that the aircraft will comply with the communication failure procedures prescribed in GACAR §91.95 or §91.209. When a controlled aircraft experiencing complete communication, failure is operating or expected to operate in an area and at flight levels where an ATS surveillance service is applied, radar separation minima may continue to be used.
(3) Action taken to ensure suitable separation must cease to be based on the assumption stated in (2) when:

(i) It is determined that the aircraft is following a procedure differing from that in GACAR§91.95 or §91.209;
(ii) Through the use of electronic or other aids, ATCUs determine that action differing from that required by (2) may be taken without impairing safety; or
(iii) Positive information is received that the aircraft has landed.

(4) As soon as it is known that two-way communication has failed, appropriate information describing the action taken by the ATCU, or instructions justified by any emergency situation, must be transmitted blind for the attention of the aircraft concerned, on the frequencies available on which the aircraft is believed to be listening, including the voice frequencies of available radio navigation or approach aids. Information must also be given concerning:

(i) Meteorological conditions favorable to a cloud-breaking procedure in areas where congested traffic may be avoided; and
(ii) Meteorological conditions at suitable aerodromes.

(5) Pertinent information must be given to other aircraft in the vicinity of the presumed position of the aircraft experiencing the failure.
(6) As soon as it is known that an aircraft which is operating in its area of responsibility is experiencing an apparent radio communication failure, an ATSU must forward information concerning the radio communication failure to all ATSUs concerned along the route of flight. The ACC in whose area the destination aerodrome is located must take steps to obtain information on the alternate aerodrome(s) and other relevant information specified in the filed flight plan, if such information is not available.
(7) If circumstances indicate that a controlled flight experiencing a communication failure might proceed to (one of) the alternate aerodrome(s) specified in the filed flight plan, the ATSU(s) serving the alternate aerodrome(s) and any other ATCUs that might be affected by a possible diversion must be informed of the circumstances of the failure and requested to attempt to establish communication with the aircraft at a time when the aircraft could possibly be within communication range. This must apply particularly when, by agreement with the operator or a designated representative, a clearance has been transmitted blind to the aircraft concerned to proceed to an alternate aerodrome, or when

meteorological conditions at the aerodrome of intended landing are such that a diversion to an alternate is considered likely.
(8) When an ATCU receives information that an aircraft, after experiencing a communication failure has re-established communication or has landed, that unit must inform the ATSU in whose area the aircraft was operating at the time the failure occurred, and other ATSUs concerned along the route of flight, giving necessary information for the continuation of control if the aircraft is continuing in flight.
(9) If the aircraft has not reported within thirty minutes after:

(i) The estimated time of arrival furnished by the pilot;
(ii) The estimated time of arrival calculated by the ACC; or
(iii) The last acknowledged expected approach time, whichever is latest, pertinent information concerning the aircraft must be forwarded to aircraft operators, or their designated representatives, and PIC of any aircraft concerned, and normal control resumed if they so desire. It is the responsibility of the aircraft operators, or their designated representatives, and PIC of aircraft to determine whether they will resume normal operations or take other action.

§ 171.648 Degradation of Aircraft Position Source Data.

In order to reduce the impact of a degradation of aircraft position source data, for example, a space-based augmentation system (SBAS) outage for a Global Navigation Satellite System (GNSS), each ATS provider must establish, and publish in Part 1 of the ATSPM, contingency procedures to be followed by control positions and ATCUs in the event of data degradation.

§ 171.649 Emergency Descent.

(a) Upon recognition or receipt of advice that an aircraft is making an emergency descent through other traffic, all appropriate action must be taken immediately to safeguard all aircraft concerned. When deemed necessary, ATCUs must immediately broadcast by means of the appropriate radio aids, or if not possible, request the appropriate communications stations immediately to broadcast an emergency message.

(b) Immediately after such an emergency broadcast has been made the ACC, the APP, or the TWR concerned must forward further clearances to all aircraft involved as to additional procedures to be followed during and subsequent to the emergency descent. The ATSU concerned must additionally inform any other ATSUs and control sectors which may be affected.

§ 171.651 Emergency Separation.

(a) Each ATS provider must provide instructions for application of emergency separation if horizontal or vertical separation cannot be maintained due to an aircraft emergency or following ATC surveillance system alerts or warnings and publish these instructions in Part 1 of the ATSPM.

(b) In an emergency situation, half the applicable vertical separation minimum may be used, i.e., 500 ft between aircraft in airspace where a vertical separation minimum of 1,000 ft is applied, and 1,000 ft between aircraft in airspace where a 2,000 ft vertical separation minimum is applied.

(c) When emergency separation is applied the flight crews concerned must be advised that emergency separation is being applied and informed of the actual minimum used. Additionally, all flight crews concerned must be provided with essential traffic information.

§ 171.653 Plotting Aircraft in a State of Emergency.

(a) When a state of emergency is considered to exist, the flight of the aircraft involved must be plotted on a chart in order to determine the probable future position of the aircraft and its maximum range of action from its last known position. The flights of other aircraft known to be operating in the vicinity of the aircraft involved must also be plotted in order to determine their probable future positions and maximum endurance.

(b) The progress of an aircraft in emergency that is under ATS surveillance must be monitored and (whenever possible) plotted on the situation display until the aircraft passes out of coverage of the ATS surveillance system, and position information must be provided to all ATSUs which may be able to give assistance to the aircraft. Transfer to adjacent sectors must also be effected when appropriate.

SUBPART V - FLIGHT INFORMATION SERVICES

§ 171.671 General.

(a) Flight information service (FIS) must be provided to all aircraft which are likely to be affected by the information and which are:

(1) Provided with ATC service; or
(2) Otherwise known to the relevant ATSUs.

(b) Where ATSUs provide both FIS and ATC service, the provision of ATC service must have precedence over the provision of FIS whenever the provision of ATC service so requires.

(c) The responsibility for the provision of FIS to a flight normally passes from the appropriate ATSU in a FIR to the appropriate ATSU in the adjacent FIR at the time of crossing the common FIR boundary. However, when coordination is required in accordance with GACAR § 171.163, but communication facilities are inadequate, the former ATSU must, as far as practicable, continue to provide FIS to the flight until it has established two-way communication with the appropriate ATSU in the FIR it is entering.

(d) Each ATS provider must-

(1) Determine the responsibility for the provision of FIS and publish the responsibilities in Part 1 of the ATSPM.
(2) Detail such information that constitutes relevant flight information to all flights in Part 1 of the ATSPM.
(3) Detail in which format the transmission of flight information can take place in Part 1 of the ATSPM.

(e) Except as provided for in (d), each ATS provider must ensure that the transmission of flight information and the means of transmission comply with those prescribed by the International Civil Aviation Organization in Annex 11 to the Convention of International Civil Aviation, ICAO Doc.4444 (PANS-ATM) and Regional Supplemental Procedures as specified in ICAO Doc. 7030.

(f) Each ATS provider must ensure that Air-ground communication facilities enable direct, rapid, continuous and static-free two-way communications to take place between a unit providing flight information service and appropriately equipped aircraft flying anywhere within the flight information region.

(g) Each ATS provider must ensure that a flight information center has facilities for communications with

the following units providing a service within its area of responsibility:

(1) the area control center, unless collocated;
(2) approach control units;
(3) aerodrome control towers, and aerodrome flight information services;
(4) appropriate military units;
(5) the meteorological office serving the center;
(6) the aeronautical telecommunications provider serving the center;
(7) appropriate operator's offices;
(8) the rescue coordination center or, in the absence of such center, any other appropriate emergency service;
(9) the international NOTAM office serving the center.

(h) Each ATS provider must ensure that the communication facilities prescribed in (g) include:

(1) communications by direct speech alone, or in combination with data link communications, whereby the communications can be established instantaneously and for other purposes the communications can normally be established within fifteen seconds; and;
(2) printed communications, when a written record is required; the message transit time for such communications being no longer than five minutes;
(3) suitable facilities for automatic recording in all cases where automatic transfer of data to and/or from air traffic services computers is required.

(i) Each ATS provider must ensure that the communication facilities prescribed in (g) are 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.

Note 1.— Flight information service does not relieve the pilot-in-command of an aircraft of any responsibilities and the pilot-in-command has to make the final decision regarding any suggested alteration of flight plan.
Note 2.— It is recognized that in certain circumstances aircraft on final approach, landing, take-off and climb may require to receive without delay essential information other than that pertaining to the provision of air traffic control service.

§ 171.672 Scope of Flight Information Service.

(a) FIS must include the provision of pertinent:

(1) SIGMET and AIRMET information;

(2) Information concerning pre-eruption volcanic activity, volcanic eruptions and volcanic ash clouds;
(3) Information concerning the release into the atmosphere of radioactive materials or toxic chemicals;
(4) Information on changes in the availability of radio navigation services;
(5) Information on changes in condition of aerodromes and associated facilities, including information on the state of the aerodrome movement areas when they are affected by sand, snow, ice or significant depth of water;
(6) Information on unmanned free balloons;
(7) Information on space weather phenomena that have an impact on high frequency radio communications, communications via satellite, GNSS-based navigation, and surveillance systems, and/or pose a radiation risk to aircraft occupants at flight levels; and
(8) Any other information likely to affect safety.

(b) FIS provided to flights must include, in addition to that outlined in (a), the provision of information concerning:

(1) Weather conditions reported or forecast at departure, destination and alternate aerodromes;
(2) Collision hazards, to aircraft operating in airspace Classes C, D, E, F and G as prescribed in GACAR §171.675 and §171.681; and
(3) For flight over water areas, in so far as practicable and when requested by a pilot, any available information such as radio call sign, position, true track, speed, etc., of surface vessels in the area.

(c) ATSUs must transmit, as soon as practicable, special air-reports to other aircraft concerned, to the associated meteorological office, and to other ATSUs concerned. Transmissions to aircraft must be continued for a period to be determined by agreement between the MET providers concerned and the ATS provider.

(d) FIS provided to VFR flights must include, in addition to that outlined in (a), the provision of available information concerning traffic and weather conditions along the route of flight that are likely to make operation under the visual flight rules impracticable.

(e) The meteorological information and operational information concerning radio navigation services and aerodromes included in the flight information service must, whenever available, be provided in an operationally integrated form.

(f) Where integrated operational flight information messages are to be transmitted to aircraft, they must be transmitted with the content and, where specified, in the sequence indicated, for the various phases of

flight.

(g) Operational flight information service broadcasts, when provided, must consist of messages containing integrated information regarding selected operational and meteorological elements appropriate to the various phases of flight. These broadcasts must be of three major types, i.e., HF, VHF and ATIS.

(h) When requested by the pilot, the applicable operational flight information service (OFIS) message(s) must be transmitted by the appropriate ATS unit.

(i) VHF operational flight information service broadcasts must be provided as determined by regional air navigation agreements.

(j) Whenever such broadcasts are provided:

(1) the aerodromes for which reports and forecasts are to be included should be as determined by regional air navigation agreements;
(2) each aerodrome message should be identified by the name of the aerodrome to which the information applies;
(3) when information has not been received in time for a broadcast, the latest available information should be included together with the time of that observation;
(4) the broadcasts should be continuous and repetitive;
(5) The VHF OFIS broadcast message should take into consideration human performance. The broadcast message should, whenever practicable, not exceed five minutes, care being taken that the readability is not impaired by the speed of the transmission;
(6) the broadcast message should be updated on a scheduled basis as determined by regional air navigation agreements. In addition, it should be expeditiously updated immediately a significant change occurs; and
(7) the VHF OFIS message should be prepared and disseminated by the most appropriate unit(s) as designated by each State.

(k) Where VHF OFIS broadcasts are available in more than one language, a discrete channel should be used for each language.

(l) VHF operational flight information service broadcast messages should contain the following information in the sequence indicated:

(1) name of aerodrome;
(2) time of observation;
(3) landing runway;
(4) significant runway surface conditions and, if appropriate, braking action;
(5) changes in the operational state of the radio navigation services, if appropriate;
(6) holding delay, if appropriate;
(7) surface wind direction and speed; if appropriate, maximum wind speed;
(8) visibility and, when applicable, runway visual range (RVR);
(9) present weather;
(10) cloud below 1 500 m (5 000 ft) or below the highest minimum sector altitude, whichever is greater; cumulonimbus; if the sky is obscured, vertical visibility, when available;
(11) air temperature;
(12) dew point temperature;
(13) QNH altimeter setting;
(14) supplementary information on recent weather of operational significance and, where necessary, wind shear;
(15) trend forecast, when available; and
(16) notice of current SIGMET messages.

(m) SIGMET information passed to aircraft must cover a portion of the route up to two hours' flying time ahead of the aircraft.

(n) Amended aerodrome forecasts must be passed to aircraft within 60 minutes from the aerodrome of destination, unless the information has been made available through other means.

Note 1.— The information in (b)(2), including only known aircraft, the presence of which might constitute a collision hazard to the aircraft informed, will sometimes be incomplete and air traffic services cannot assume responsibility for its issuance at all times or for its accuracy.

Note 2.— When there is a need to supplement collision hazard information provided in compliance with (b)(2), or in case of temporary disruption of flight information service, traffic information broadcasts by aircraft may be applied in designated airspaces. Guidance on traffic information broadcasts by aircraft and related operating procedures is contained in Attachment B to Annex 11.

§ 171.673 Automatic Terminal Information Service (ATIS).

(a) Voice-automatic terminal information service (Voice-ATIS) broadcasts must be provided at aerodromes where there is a requirement to reduce the communication load on the ATS VHF air-ground communication channels. When provided, they must comprise:

(1) One broadcast serving arriving aircraft; or
(2) One broadcast serving departing aircraft; or
(3) One broadcast serving both arriving and departing aircraft; or
(4) Two broadcasts serving arriving and departing aircraft respectively at those aerodromes where the length of a broadcast serving both arriving and departing aircraft would be excessively long.

(b) Each ATS provider must-

(1) Determine in which format the ATIS at individual units will be broadcast and whether a separate broadcast will be provided for arrivals and departures. This information must be documented in Part 2 of the ATSPM.
(2) Detail the contents of the ATIS broadcast in Part 1 of the ATSPM.
(3) Coordinate ATIS broadcast procedures with the aeronautical telecommunication service provider authorized under GACAR Part 173.

(c) A discrete VHF frequency must, whenever practicable, be used for Voice-ATIS broadcasts. If a discrete frequency is not available, the transmission may be made on the voice channel(s) of the most appropriate terminal navigation aid(s), preferably a VOR, provided the range and readability are adequate and the identification of the navigation aid is sequenced with the broadcast so that the latter is not obliterated.

(d) Voice-ATIS broadcasts must not be transmitted on the voice channel of an ILS.

(e) Whenever Voice-ATIS is provided, the broadcast must be continuous and repetitive.

(f) The information contained in the current broadcast must immediately be made known to the ATS unit(s) concerned with the provision to aircraft of information relating to approach, landing and takeoff, whenever the message has not been prepared by that (those) unit(s).

(g) Voice-ATIS broadcasts provided at designated aerodromes for use by international air services must be available in the English language as a minimum.

(h) Where Voice-ATIS broadcasts are available in more than one language, a discrete channel must be used for each language.

(i) The Voice-ATIS broadcast message must, whenever practicable, not exceed 30 seconds, care being taken that the readability of the ATIS message is not impaired by the speed of the transmission or by the identification signal of a navigation aid used for transmission of ATIS. The ATIS broadcast message must take into consideration human performance.

Note. — Guidance material on human performance can be found in the Human Factors Training ICAO Manual (Doc 9683).

(k) Where a data link ATIS (D-ATIS) supplements the existing availability of Voice-ATIS, the following apply:

(1) The information must be identical in both content and format to the applicable Voice-ATIS broadcast.
(2) Where real-time meteorological information is included but the data remains within the parameters of the significant change criteria, the content, for the purpose of maintaining the same designator, must be considered identical.
(3) Where a D-ATIS supplements the existing availability of Voice-ATIS and the ATIS requires updating, Voice-ATIS and D-ATIS must be updated simultaneously.

Note.— Guidance material relating to D-ATIS is contained in the Manual of Air Traffic Services Data Link Applications (Doc 9694). The technical requirements for the D-ATIS application are contained in Annex 10, Volume III, Part I, Chapter 3.

(l) Whenever Voice-ATIS and/or D-ATIS is provided:

(1) The information communicated must relate to a single aerodrome;

(2) The information communicated must be updated immediately a significant change occurs;
(3) The preparation and dissemination of the ATIS message must be the responsibility of the air traffic services;
(4) Individual ATIS messages must be identified by a designator in the form of a letter of the ICAO spelling alphabet. Designators assigned to consecutive ATIS messages must be in alphabetical order;
(5) Aircraft must acknowledge receipt of the information upon establishing communication with the ATS unit providing approach control service or the aerodrome control tower, as appropriate;
(6) The appropriate ATS unit must, when replying to the message in (5) above or, in the case of arriving aircraft, at such other time as may be prescribed by the President, provide the aircraft with the current altimeter setting; and
(7) The meteorological information must be extracted from the local meteorological routine or special report.

(m) When rapidly changing meteorological conditions make it inadvisable to include a weather report in the ATIS, the ATIS messages must indicate that the relevant weather information will be given on initial contact with the appropriate ATS unit.

(n) Information contained in a current ATIS, the receipt of which has been acknowledged by the aircraft concerned, need not be included in a directed transmission to the aircraft, with the exception of the altimeter setting, which must be provided in accordance with paragraph (l)(6) above.

(o) If an aircraft acknowledges receipt of an ATIS that is no longer current, any element of information that needs updating must be transmitted to the aircraft without delay.

(p) Contents of ATIS should be kept as brief as possible. Information already available in aeronautical information publications (AIPs) and NOTAM, must only be included when justified in exceptional circumstances.

(q) ATIS messages containing both arrival and departure information must contain the following elements of information, as appropriate, in the order listed:

(1) Name of aerodrome;
(2) Arrival and/or departure indicator;
(3) Contract type, if communication is via D-ATIS;
(4) Designator;
(5) Time of observation, if appropriate;
(6) Type of approach(es) to be expected;
(7) The runway(s) in use;
(8) Status of arresting system constituting a potential hazard, if any;
(9) Significant runway surface conditions and, if appropriate, braking action;
(10) Holding delay, if appropriate;
(11) Transition level, if applicable;
(12) Other essential operational information;
(13) Surface wind direction (in degrees magnetic) and speed, including significant variations and, if surface wind sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;
(14) Visibility and, when applicable, RVR and, if visibility/RVR sensors related specifically to the sections of runway(s) in use are available and the information is required by operators, the indication of the runway and the section of the runway to which the information refers;
(15) Present weather;
(16) Cloud below 1500 m (5000 ft) or below the highest minimum sector altitude, whichever is greater;
(17) Cumulonimbus;
(18) If the sky is obscured, vertical visibility when available;
(19) Air temperature;

(20) Dew point temperature;
(21) Altimeter setting(s);
(23) Any available information on significant meteorological phenomena in the approach and climb out areas including wind shear, and information on recent weather of operational significance;
(24) Trend forecast, when available; and
(25) Specific ATIS instructions.

Note - The surface wind direction and speed and runway visual range (RVR) are to be averaged over 2 minutes and 1 minute, respectively; and the wind information is to refer to conditions along the runway for departing aircraft and to conditions at the touchdown zone for arriving aircraft.

(r) ATIS messages containing arrival information only must contain the following elements of information, as appropriate, in the order listed:

(1) Name of aerodrome;
(2) Arrival indicator;
(3) Items (3) to (25) from (q) above.

(s) ATIS messages containing departure information only must contain the following elements of information, as appropriate, in the order listed:

(1) Name of aerodrome;
(2) Departure indicator;
(3) Items (3) to (25) from (q) above.

§ 171.675 VOLMET broadcasts and D-VOLMET service.

Each ATS Provider must provide HF and/or VHF VOLMET broadcasts and/or D-VOLMET service when it has been determined by regional air navigation agreements that a requirement exists. VOLMET broadcasts must use standard radiotelephony phraseologies.

Note.— Guidance on standard radiotelephony phraseologies to be used in VOLMET broadcasts is given in the Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services (Doc 9377), Appendix 1.

§ 171.677 Traffic Information.

(a) Each ATS provider must publish procedures for issuing both general traffic information and essential traffic information in Part 1 of the ATSPM.

(b) Essential traffic information must be given to controlled flights concerned whenever they constitute essential traffic to each other.

Note. — This information will inevitably relate to controlled flights cleared subject to maintaining own separation and remaining in visual meteorological conditions and also whenever the intended separation minimum has been infringed.

(c) Essential traffic information must include:

(1) Direction of flight of aircraft concerned;

(2) Type and wake turbulence category (if relevant) of aircraft concerned;

(3) Cruising level of aircraft concerned; and

(i) Estimated time over the reporting point nearest to where the level will be crossed;
(ii) Relative bearing of the aircraft concerned in terms of the 12-hour clock as well as distance from the conflicting traffic; or
(iii) Actual or estimated position of the aircraft concerned.

§ 171.679 Traffic Information Broadcasts by Aircraft (TIBA).

Each ATS provider must publish procedures for identifying and managing situations outside of controlled airspace when there is a need to prescribe airspace limits and pilot procedures for TIBA in order to supplement collision hazard information or to cater for temporary disruption of FIS. TIBA airspace designations must be made in accordance with Subpart G of this part and the publication of pilot procedures must be made by way of NOTAM or AIP amendment. Coordination with the AIS provider authorized under GACAR Part 175 must be carried out in compliance with GACAR § 171.159. The pilot procedures must be established in accordance with the requirements prescribed for TIBA in ICAO Annex 11 and published in the KSA AIP.

§ 171.681 Meteorological Information.

(a) Each ATS provider must detail in Part 1 of the ATSPM the requirement for the reporting of:

(1) SIGMET and AIRMET information;
(2) Special reports and amended aerodrome forecast;
(3) Surface wind;

(4) Visibility;
(5) Runway Visual Range;
(6) Present weather;
(7) Cloud base;
(8) Air temperature and dew point;
(9) Altimeter setting; and
(10) Volcanic activity.

(b) Information on the position, intensity, extent and movement of significant meteorological conditions (i.e., heavy showers or well-defined frontal surfaces) as observed on situation displays should, when practicable, be reported to the associated meteorological office.

§ 171.683 Air Traffic Advisory Service.

(a) Each ATSU providing an air traffic advisory service must establish procedures detailing that the objective of the air traffic advisory service is to make information on collision hazards more effective than it would be in the mere provision of flight information service. It may be provided to aircraft conducting IFR flights in advisory airspace or on advisory routes (Class F airspace) where such airspace is established within KSA. These procedures must be published in Part 1 of the ATSPM.

(b) Controllers must be made aware that air traffic advisory service does not afford the degree of safety and cannot assume the same responsibilities as air traffic control service in respect of the avoidance of collisions, since information regarding the disposition of traffic in the area concerned available to the unit providing air traffic advisory service may be incomplete. To make this quite clear, controllers must be made aware that air traffic advisory service does not deliver “clearances” but only “advisory information” and it uses the word “advise” or “suggest” when a course of action is proposed to an aircraft. Where the President requires, on the basis of regional air navigation agreements, that IFR flights must use the air traffic advisory service when operating within Class F airspace, or where an IFR flight elects to use the advisory service, controllers must be aware that those flights are expected to comply with the same procedures as those applying to controlled flights except that:

(1) The flight plan and changes thereto are not subjected to a clearance, since the unit furnishing air traffic advisory service will only provide advice on the presence of essential traffic or suggestions as to a possible course of action;
(2) It is for the aircraft to decide whether or not it will comply with the advice or suggestion received and to inform the unit providing air traffic advisory service, without delay, of its decision;
(3) Air-ground contacts must be made with the air traffic services unit designated to provide air traffic advisory service within the advisory airspace or portion thereof.

(c) Where an aircraft elects to, or is required to use the air traffic advisory service, each ATSU providing that service must:

(1) Advise the aircraft to depart at the time specified and to cruise at the levels indicated in the flight plan if it does not foresee any conflict with other known traffic;
(2) Suggest to aircraft a course of action by which a potential hazard may be avoided, giving priority to an aircraft already in advisory airspace over other aircraft desiring to enter such advisory airspace; and
(3) Pass to aircraft traffic information comprising the same information as that prescribed for area control service.

(d) The criteria used as a basis for action under (c)(2) and (c)(3) must be at least those laid down for aircraft operating in controlled airspace and must take into account the limitations inherent in the provision of air traffic advisory service, navigation facilities and air-ground communications prevailing in the region.

(e) Each ATS provider must provide instructions with regard to air traffic advisory service in respect of format and when to use in Part 1 of the ATSPM.

§ 171.685 Recording and Transmission of Information on the Progress of Flights.

(a) Each ATS provider must establish procedures for the recording and transmission of information on the progress of flights and publish those procedures in Part 1 of the ATSPM.

(b) Information on the actual progress of flights, including those of heavy or medium unmanned free balloons, under neither ATC service nor air traffic advisory service must be:

(1) Recorded by the ATSU serving the FIR within which the aircraft is flying in such a manner that it is available for reference and in case it is requested for search and rescue action;
(2) Transmitted by the ATSU receiving the information to other ATSUs concerned, when so required in accordance with GACAR §171.163.

SUBPART W – COMMUNICATION PROCEDURES

§ 171.751 General.

(a) Except as provided for in (b), each ATS provider must adopt communication procedures (including messaging procedures) that comply with Annex 11 to the Convention of International Civil Aviation, ICAO Doc. 4444 (PANS-ATM), Regional Supplemental Procedures as specified in ICAO Doc. 7030 and the following communications Standards prescribed by the International Civil Aviation Organization in Annex 10, Volume II:

(1) Chapter 4 of Annex 10, Volume II for the Aeronautical Fixed Service (AFS);
(2) Chapter 5 of Annex 10, Volume II for the Aeronautical Mobile Service — Voice Communications;
(3) Chapter 6 of Annex 10, Volume II for the Aeronautical Radio Navigation Service;
(4) Chapter 7 of Annex 10, Volume II for the Aeronautical Broadcasting Service; and
(5) Chapter 8 of Annex 10, Volume II for the Aeronautical Mobile Service — Data Link Communications.

(b) Each ATS provider must incorporate all relevant communications procedures, protocols and phraseologies in Part 1 of their ATSPM.

§ 171.753 Categories of ATS Messages.

Each ATS provider must detail the categories of messages that is handled by aeronautical mobile service together with a description of the individual categories. This information must be documented in Part 1 of the ATSPM.

§ 171.755 Message Composition.

Each ATS provider must detail the composition of messages to be handled by the aeronautical mobile and fixed services in Part 1 of the ATSPM.

§ 171.757 Phonetics and Numbers.

Each ATS provider must list the phonetic alphabet and the pronunciation of numbers from 0 to 10 in Part 1 of the ATSPM.

§ 171.759 Transmitting Technique.

Each ATS provider must publish procedures for radio transmitting technique in Part 1of the ATSPM.

§ 171.761 Ground Station Call Signs.

Each ATS provider must publish a table listing the approved ground station call signs in Part 1of the ATSPM.

§ 171.763 Aircraft Call Signs.

(a) Each ATS provider must issue instructions for the use of both full, abbreviated and changed call signs in Part 1of the ATSPM.

(b) Change of radiotelephony (RTF) call sign for aircraft.

(1) An ATCU may instruct an aircraft to change its type of RTF call sign, in the interests of safety, when similarity between two or more aircraft RTF call signs are such that confusion is likely to occur.
(2) Any such change to the type of call sign must be temporary and must be applicable only within the airspace(s) where the confusion is likely to occur.
(3) To avoid confusion, the ATCU must, if appropriate, identify the aircraft which will be instructed to change its call sign by referring to its position and/or level.
(4) When an ATCU changes the type of call sign of an aircraft, that unit must ensure that the aircraft reverts to the call sign indicated by the flight plan when the aircraft is transferred to another ATCU, except when the call sign change has been coordinated between the two ATCUs concerned.
(5) The appropriate ATCU must advise the aircraft concerned when it is to revert to the call sign indicated by the flight plan.

§ 171.765 Exchange of Communications.

Each ATS provider must publish, in Part 1 of the ATSPM, procedures for exchange of communication between ground stations and aircraft including requirements for sections that must be read back or include corrections and repetitions.

§ 171.767 Distress and Urgency Radiotelephony Communication Procedures.

Each ATS provider must:

(a) Publish detailed procedures in association with aircraft in distress in Part 1 of the ATSPM. These procedures must include the following:

(1) Actions by aircraft in distress;
(2) Action by station acknowledging distress message;
(3) Imposition of silence; and
(4) Action by other stations.

(b) Publish procedures in Part 1 of the ATSPM for action when an aircraft is reporting an urgency condition. This must include:

(1) Action by station acknowledging an urgency message; and
(2) Action by all other stations.

(c) Publish appropriate procedures for direct speech communications must be developed to permit immediate connections to be made for very urgent calls concerning the safety of aircraft, and the interruption, if necessary, of less urgent calls in progress at the time.

§ 171.769 Medical Transport Aircraft Radiotelephony Communication.

Each ATS provider must publish detail procedures for communication with air ambulance aircraft in Part 1 of the ATSPM. This must include all relevant information to ensure the most expeditious flight profile available.

§ 171.771 Coordination With an Aeronautical Communication Station.

Each ATS provider must in Part 2 of the ATSPM detail coordination procedures between the ATSU and an aeronautical communication station. These procedures must also be included in Part 1 of the ATSPM in general terms.

§ 171.773 Unauthorized Use of ATC Frequency.

(a) Each ATS provider must detail procedures to be followed in the event of false and deceptive

transmissions on ATC frequencies in Part 1 of the ATSPM.

(b) When the transmission of false or deceptive instructions and clearances is detected, the ATS provider must take all necessary action to have the transmitter located and the transmission terminated.

§ 171.775 Phraseologies.

(a) Each ATS provider must publish in Part 1 of the ATSPM the approved phraseologies for use by ATS personnel in the provision of ATS.

(b) Except as provided for in (c) and (d), these phraseologies must comply with the phraseologies prescribed by the International Civil Aviation Organization in Annex 10, Volume II, Chapters 5 and 12 of ICAO Doc. 4444 (PANS-ATM) and as supplemented by Regional Supplemental Procedures as specified in ICAO Doc. 7030.

(c) Non-standard phraseologies may be utilized in circumstances not covered by (b) above. Procedures detailing the use of non-standard phraseologies must be published in Part 1 of the ATSPM.

SUBPART X – METEOROLOGICAL REQUIREMENTS

§ 171.781 General.

(a) Each ATS provider must enter into an agreement with a MET service provider certified under GACAR Part 179 for the provision of meteorological information and services necessary for he provision of air traffic services in KSA.

(b) Each ATS provider must establish procedures to ensure that ATSUs are supplied with up-to-date information on existing and forecast meteorological conditions as necessary for the performance of their respective functions. The information must be supplied in such a form as to require a minimum of interpretation on the part of ATS personnel and with a frequency which satisfies the requirements of the ATSUs concerned.

(c) Each ATS provider must establish procedures to ensure that ATSUs are be supplied with available detailed information on the location, vertical extent, direction and rate of movement of meteorological phenomena, as specified in

GACAR Part 179, in the vicinity of the aerodrome, and particularly in the climb-out and approach areas, which could be hazardous to aircraft operations.

(d) When computer-processed upper air data are made available to ATSUs in digital form for use by ATS computers, the contents, format and transmission arrangements must be as agreed between the MET provider and the ATS

provider.

(e) Each ATS provider must stipulate in Part 1 of the ATSPM the necessary meteorological details to be provided to FICs and ATSUs.

(f) Each ATS provider must ensure that ATS units are informed, under the established agreement with MET service provider, of

(1) pre-eruption volcanic activity, volcanic eruptions and volcanic ash cloud which could affect airspace used by flights within their area of responsibility.
(2) the release into the atmosphere of radioactive materials or toxic chemicals which could affect airspace used by flights within their area of responsibility.

§ 171.783 FICs and ACCs.

Each ATS provider must ensure that-

(a) FICs and ACCs are supplied with meteorological information as described in GACAR Part 179 (Ref. ICAO 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 must cover the FIR 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 section, certain changes in meteorological conditions are construed a 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.

(b) FICs and ACCs must be provided, at suitable intervals, with current pressure data for setting altimeters, for locations specified by the FIC or ACC concerned.

(c) FICS and ACCs must be provided with volcanic ash advisory information issued by the associated VAAC.

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

§ 171.785 APPs.

Each ATS provider must ensure that-

(a) APPs are supplied with meteorological information as described in GACAR Part 179 (Ref. ICAO Annex 3, Appendix 9, 1.2) for the airspace and the aerodromes with which they are concerned. Special reports and amendments to forecasts must be communicated to the APPs 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 must be clearly marked to identify the runway and section of the runway monitored by each anemometer.

(b) APPs are provided with current pressure data for setting altimeters, for locations specified by the unit providing approach control service.

(c) APPs providing approach control service for final approach, landing and take-off are equipped with surface wind display(s). The display(s) must 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.

(d) APPs providing approach control service for final approach, landing and takeoff at aerodromes where runway visual range values are assessed by instrumental means are equipped with display(s) permitting read-out of the current runway visual range value(s). The display(s) must be related to the same location(s) of observation and be fed from the same sensor(s) as the corresponding displays in the aerodrome control tower and in the meteorological station, where such a station exists.

(e) APPs providing approach control service for final approach, landing and take-off at aerodromes where the height of cloud base is assessed by instrumental means are equipped with display(s) permitting read-out of the current value(s) of the height of cloud base. The displays must 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.

(f) APPs providing approach control service for final approach, landing and takeoff are supplied with information on wind shear which could adversely affect aircraft on the approach or takeoff paths or during circling approach.

(g) APPs are 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.

Note. — Provisions concerning the issuance of wind shear warnings and alerts and ATS requirements for meteorological information are given in GACAR Part 179.

§ 171.787 TWRs.

Each ATS provider must ensure that-

(a) TWRs are supplied with meteorological information as described in GACAR Part 179 for the aerodrome with which they are concerned. Special reports and amendments to forecasts must 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.

(b) TWRs are provided with current pressure data for setting altimeters for the aerodrome concerned.

(c) TWRs are 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.

(d) TWRs at aerodromes where runway visual range values are measured by instrumental means are equipped with display(s) permitting read-out of the current runway visual range value(s). The display(s) must 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.

(e) TWRs at aerodromes where the height of cloud base is assessed by instrumental means should be equipped with display(s) permitting read-out of the current value(s) of the height of cloud base. The displays must 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.

(f) TWRs are supplied with information on wind shear which could adversely affect aircraft on the approach or takeoff paths or during circling approach and aircraft on the runway during the landing roll or takeoff run.

(g) TWRs and/or other appropriate units are supplied with aerodrome warnings.

(h) TWRs are 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.

Note. — The meteorological conditions for which aerodrome warnings are issued are listed in GACAR Part 179.

§ 171.789 Communication Stations.

Each ATS provider must establish procedures to ensure that, where necessary for flight information purposes, current meteorological reports and forecasts are supplied to communication stations. A copy of such information must be forwarded to the FIC or the ACC.

§ 171.791 Aircraft Observations.

(a) The following aircraft observations must be made:

(1) routine aircraft observations during en-route and climb-out phases of the flight; and
(2) special and other non-routine aircraft observations during any phase of the flight.

(b) Each ATS provider must establish procedures to ensure that routine, special and other non-routine meteorological observations are made-

(1) During en-route and climb-out phases of flights operating on international air routes and for the recording and reporting of these observations;
(2) By aircraft cleared on high-density routes in the Jeddah FIR between 2300 and 0500 UTC;
(3) For rotorcraft/helicopter operations to and from aerodromes on offshore structures at points and times as agreed between the MET service provider and the rotorcraft/helicopter operators concerned.

(c) In the case of air routes with high-density air traffic (e.g., organized tracks), an aircraft from among the aircraft operating at each flight level must be designated, at approximately hourly intervals, to make routine observations in accordance with (a)(1). The designation procedures must be subject to regional air navigation agreement.

(d) In the case of the requirement to report during the climb-out phase, an aircraft must be designated, at approximately hourly intervals, at each aerodrome to make routine observations in accordance with (a)(1).

(e) Aircraft not equipped with air-ground data link may be exempted from making routine aircraft observations.

(f) When air-ground data link is used, and automatic dependent surveillance — contract (ADS-C) or secondary surveillance radar (SSR) Mode S is being applied, automated routine observations should be made every 15 minutes during the en-route phase and every 30 seconds during the climb-out phase for the first 10 minutes of the flight.

(g) When voice communications are used, from the aircraft intending to operate at cruising level on high density air routes, ACCs must designate those which must be required to report routine meteorological observations at each prescribed reporting point. The designation must be made by the ACC delivering the clearance by using the phrase “SEND MET REPORTS”.

(h) Each ATS provider must publish procedures in Part 1 of the ATSPM outlining the methods for requesting and processing routine, special and other non-routine aircraft observations and reports

SUBPART Y - MISCELLANEOUS

§ 171.801 Job Descriptions, Duties and Responsibilities.

(a) Each ATS provider must include job descriptions of all operations personnel involved in ATS operations in Part 1 of the ATSPM.

(b) The duties and responsibilities of the senior person or persons required by §171.41(a)(1) and (2) including responsibilities for safety management must be identified and described in the operations manual.

§ 171.803 Forms.

Each ATS provider must ensure that copies of all administrative and operational forms, checklists and other relevant proforma relating to the administrative and operational provision of services are included in Part 1 of the ATSPM. Any forms or checklists unique to a specific operational unit or location may be included in Part 2 of the ATSPM.

§ 171.805 Unit Logs.

Each ATS provider must make appropriate logs available at all units and issue instructions in the ATSPM on completion and retention of the unit logs.

§ 171.807 Unit Libraries.

(a) Each ATS provider must ensure that unit libraries are maintained at all operating ATSUs. Information contained in unit libraries must be available to all operating personnel on a 24-hour basis and must contain relevant documents of both general and local nature.

(b) Each ATS provider must instruct each ATSU to:

(1) Provide, in suitable binders, information necessary for the operation of a unit, sector, or position;
(2) Provide separate binders for each sector if a unit is sectorized;

(c) Ensure that sector/unit binders are readily available at a position when it is in operation. Each ATS provider must instruct units to periodically review data contained in all publications relative to their respective unit and initiate action as required to ensure accuracy and completeness of published data. The

instructions for the periodic review must be published in Part 2 of the ATSPM.

§ 171.809 Unit Directives.

(a) Each ATS provider must publish information to operational personnel in the form of unit directives in order to keep operational personnel informed of critical safety information.

(b) All unit directives must be issued as:

(1) Operations Letters (OL) or equivalent containing information of an operational nature that will be effective for the long term (i.e., up to one year or longer). OLs must be numbered consecutively.
(2) Operations Bulletins (OB) or equivalent containing information of an operational nature that is more temporary in nature and will be effective for a shorter period of duration, generally three months or less. OBs must be numbered consecutively.
(3) Staff Memos (SM) or equivalent containing information that is administrative or informative in nature only.

(c) Unit directives must be cancelled when the information they contain is no longer valid or has expired. A list of current unit directives must be maintained separately for OLs, OBs and SMs.

§ 171.811 Letters of Agreement.

(a) Each ATS provider must ensure that letters of agreement (LOA) between adjacent ATSUs are established to aid in coordination. LOAs must describe supplementary procedures needed to minimize verbal coordination and to ensure compatibility of procedures between adjacent ATSUs. LOAs between adjacent KSA units must be authorized and signed by the Manager/Chief of both ATSU.

(b) LOAs involving ATSUs in adjacent States must be developed and signed by the Manager/Chief of the ATSU and must also be signed by the GM-ATS after authorization by the President.

(c) A copy of all LOAs of the unit must be kept in the ATSPM, Part 2.

(d) LOAs must cover the following as applicable:

(1) Definition of areas of responsibility and common interest, airspace structure and airspace classification(s);
(2) Any delegation of responsibility for the provision of ATS;
(3) Procedures for the exchange of flight plan and control data, including use of automated and/or

verbal coordination messages;
(4) Means of communication;
(5) Requirements and procedures for approval requests;
(6) Significant points, levels or times for transfer of control;
(7) Significant points, levels or times for transfer of communication;
(8) Conditions applicable to the transfer and acceptance of control, such as specified altitudes/flight levels, specific separation minima or spacing to be established at the time of transfer, and the use of automation;
(9) ATS surveillance system coordination procedures;
(10) SSR code assignment procedures;
(11) Procedures for departing traffic;
(12) Designated holding fixes and procedures for arriving traffic;
(13) Applicable contingency procedures; and
(14) Any other provisions or information relevant to the coordination and transfer of control of flights.

SUBPART Z –RECORDS AND REPORTS

§ 171.851 Applicability.

This subpart prescribes requirements for the preparation, maintenance, and retention of reports and records for each ATS provider.

§ 171.853 Mandatory Reporting of Occurrences.

(a) In addition to all accidents, serious incidents and incidents that must be notified and reported to the President as prescribed under GACAR Part 4, each ATS provider must ensure that occurrences covered by Appendix A of this part are reported to the President within 24 hours of their occurrence.

(b) The reporting of occurrences under paragraph (a) must be made in a form and manner acceptable to the President

§ 171.855 Record of Communications.

(a) A telecommunication log, written or automatic, must be maintained in each station of the aeronautical telecommunication service.

(b) Aeronautical stations must record messages at the time of their receipt, except that, if during an emergency the continued manual recording would result in delays in communication, the recording of messages may be temporarily interrupted and completed at the earliest opportunity.

(c) In written logs, entries must be made only by operators on duty except that other persons having knowledge of facts pertinent to the entries may certify in the log the accuracy of operators' entries.

(d) All entries must be complete, clear, correct and intelligible. Superfluous marks or notations must not be made in the log.

(e) In written logs, any necessary correction in the log must be made only by the person making the initial entry. The correction must be accomplished by drawing or typing a single line through the incorrect entry, initialing same, recording the time and date of correction. The correct entry must be made on the next line after the last entry.

(f) Telecommunication logs, written or automatic recordings, must be retained for a period prescribed in GACAR § 171.857. When logs and automatic recordings are pertinent to inquiries or accident and incident investigations, they must be retained for longer periods until it is evident that they will be no longer required.

(g) The following information must be entered in written logs:

(1) The name of the agency operating the station;
(2) The identification of the station;
(3) The date;
(4) The time of opening and closing the station;
(5) The signature of each operator, with the time the operator assumes and relinquishes a watch;
(6) The frequencies being guarded and type of watch (continuous or scheduled) being maintained on each frequency;
(7) Except at intermediate mechanical relay stations where the provisions of this paragraph need not be complied with, a record of each communication, test transmission, or attempted communication showing text of communication, time communication completed, station(s) communicated with, and frequency used. The text of the communication may be omitted from the log when copies of the messages handled are available and form part of the log;
(8) All distress communications and action thereon;
(9) A brief description of communication conditions and difficulties, including harmful interference. Such entries should include, whenever practicable, the time at which interference was experienced, the character, radio frequency and identification of the interfering signal;
(10) A brief description of interruption to communications due to equipment failure or other troubles, giving the duration of the interruption and action taken; and
(11) Such additional information as may be considered by the operator to be of value as a part of the record of the station’s operations.

§ 171.857 Recordings and Document Retention.

(a) Each ATS provider must ensure that training records, ATS communication and data recordings, ATS watch logs, and ATS units’ data are retained and stored in a form and manner acceptable to the President for the minimum periods shown in the tables below.

Type of Training	*Minimum Retention Period*
Pre On the Job Training (POJT)	3 years
On the Job Training (OJT)	3 years
Recurrent	3 years
Remedial	3 years

Table 171–2 Training Records

Type of Recording	*Minimum Retention Period*
Voice	30 days
Data	30 days

Table 171–3 Voice/Data Recordings

Type of Unit Data	*Minimum Retention Period*
Flight Strips	30 days
Unit Log Book	5 years

Table 171–4 Unit Data

Type of Communication Record	*Minimum Retention Period*
Telecommunication logs, (Written or automatic)	30 days

Table 171–5 Record of Communications

(b) Each ATS provider must ensure that -

(1) The unit log forms and documents are filed and stored on a daily (local time) basis as follows:

(i) Forms, messages, reports, etc. are to be grouped by type, packaged and labeled indicating the site name, year, month and day;
(ii) Data strips are to be separately packaged for each location;

(iii) Electronic data must be stored securely and accessible in a controlled manner. and
(iv) Revenue messages for domestic and international services must be separately packaged and retained for a period of at least 5 years, unless otherwise approved by The President.

(2) The ATS records and log material secured as a result of an accident, incident, regulatory infraction or official complaints must be retained until the investigation or enforcement action is completed. Such ATS records and log material may only be destroyed or deleted if agreed by the President.
(3) At units where electronic logging is performed, that adequate procedures are in place to back-up electronically logged data on a daily basis.

§ 171.859 Access to ATS Records.

Each ATS provider must advise all ATSU of restrictions concerning access to ATS audio and video recordings.

§ 171.861 Flight Strip Filing Procedures.

Each ATS provider must detail procedures for filling of flight strips both for paper and electronic format in Part 1 of the ATSPM.

APPENDIX A TO GACAR PART 171 - LIST OF REPORTABLE OCCURRENCES

Note 1: Although this appendix lists the majority of reportable occurrences, it cannot be completely comprehensive. Any other occurrences, which are judged by those involved to be of hazardous nature must also be reported.
Note 2: This appendix does not include accidents and serious incidents.
Note 3: This appendix includes occurrences which pose an actual or potential threat to flight safety or can compromise the provision of safe air navigation services.
Note 4: The contents of this appendix must not preclude the reporting of any occurrence, situation or condition which, if repeated in different but likely circumstances or allowed to continue uncorrected, could create a hazard to ATM.

I. Near Collision Incidents.

Near collision incidents encompassing specific situations where one aircraft and another aircraft/the ground/a vehicle/person or objects are perceived to be too close to each other including:

(a) Separation minima infringement; (b) Inadequate separation;
(c) "Near-CFIT" (near-controlled flight into terrain);
(d) Runway incursion where avoiding action was necessary.

II. Potential for Collision or Near Collision.

Potential for collision or near collision encompassing specific situations having the potential to be an accident or a near collision, if another aircraft is in the vicinity including:

(a) Runway incursion where no avoiding action is necessary;
(b) Runway excursion;
(c) Aircraft deviation from ATC clearance;
(d) Aircraft deviation from applicable "ATM" (air traffic management) regulation:

(1) Aircraft deviation from applicable published regulations and ATM procedures;
(2) Unauthorized penetration of airspace;
(3) Deviation from ATM-related aircraft equipment carriage and operations, as mandated by GACAR Part 91.

III. ATM-Specific Occurrences.

ATM-specific occurrences encompassing those situations where the ability to provide safe ATM services

is affected, including situations where, the safe operation of aircraft has not been jeopardized. This must include the following occurrences:

(a) Inability to provide ATM services:

(1) Inability to provide air traffic services;
(2) Inability to provide airspace management services; or
(3) Inability to provide air traffic flow management services.

(b) Provision of significantly incorrect, inadequate or misleading information from any ground sources, e.g. ATC, "ATIS" (automatic terminal information service), meteorological services, navigation databases, maps, charts, manuals, etc.

(c) Provision of less than prescribed terrain clearance.

(d) Provision of incorrect pressure reference data (i.e., altimeter setting).

(e) Incorrect transmission, receipt or interpretation of significant messages when this results in a hazardous situation.

(f) Separation minima infringement.

(g) Unlawful radio communication transmission.

(h) Failure of ANS ground or satellite facilities.

(i) Failure of data processing and distribution function;

(j) Failure of navigation aids; or

(k) ATM system security.

IV. ATC Surveillance and Communications.

(a) Significant malfunction or deterioration of service.

(b) Failure or unplanned shutdown of a major operational ATC computer system, requiring reversion to manual back-up and resulting in disruption to the normal flow of air traffic.

V. Aerodrome Hazards.

(a) Significant deterioration of aerodrome infrastructure.

(b) Aerodrome maneuvering areas obstructed by aircraft, vehicles, animals or foreign objects, resulting in a hazardous or potentially hazardous situation.

(c) Errors or inadequacies in marking of obstructions or hazards on aerodrome movement areas resulting in a hazardous situation.

(d) Failure, significant malfunction or unavailability of airfield lighting.

VI. Suspected Problematic Use of Psychoactive Substances.

An aircraft was or could have been endangered by impairment of any member of ground staff (e.g, ATS personnel, vehicle operators, etc.).

APPENDIX B TO GACAR PART 171 - MATERIAL RELATING TO CONTINGENCY PLANNING

I. Status of Contingency Plans.

Contingency plans are intended to provide alternative facilities and services in Jeddah FIR when ANS facilities and services are temporarily not available. Contingency arrangements are therefore temporary in nature, remain in effect only until the ANS services and facilities are reactivated.

II. Responsibility for Developing, Promulgating and Implementing Contingency Plans.

Each ATS provider providing air traffic services and related supporting services in Jeddah FIR is also responsible, in the event of disruption or potential disruption of these services, for instituting measures to ensure the safety of civil aviation operations and, where possible, for making provisions for alternative facilities and services. To that end each ATS provider must
develop, promulgate and implement appropriate contingency plans. Such plans must be developed in consultation with other parties and airspace users concerned and with ICAO, as appropriate, whenever the effects of the service disruption(s)are likely to affect the services in adjacent airspace.

III. Preparatory Action.

(a) Time is essential in contingency planning if hazards to air navigation are to be reasonably prevented. Timely introduction of contingency arrangements requires decisive initiative and
action, which again presupposes that contingency plans have, as far as practicable, been completed and agreed between ANS and the parties concerned before the occurrence of the event requiring contingency action, including the manner and timing of promulgating such arrangements.

(b) Each ATS provider must take preparatory action, as appropriate, for facilitating timely introduction of contingency arrangements. Such preparatory action must include:

(1) Preparation of general contingency plans for introduction in respect of generally foreseeable events;
(2) Assessment of risk to civil air traffic due to military conflict or acts of unlawful interference with civil aviation as well as a review of the likelihood and possible consequences of natural disasters or public health emergencies. Preparatory action must include initial development of special contingency plans in respect of natural disasters, public health emergencies, military conflicts or

acts of unlawful interference with civil aviation that are likely to affect the availability of a portion of the Jeddah FIR for civil aircraft operations and/or the provision of air traffic services and supporting services.

(3) Be recognized that avoidance of particular portions of airspace in Jeddah FIR on short notice will require special efforts by adjacent FIR and by international aircraft operators with regard to planning of alternative routings and services, and the ANS must therefore, as far as practicable, endeavor to anticipate the need for such alternative actions;

(4) Monitoring of any developments that might lead to events requiring contingency arrangements to be developed and applied. Each ATS provider must designate persons/ administrative units to undertake such monitoring and, when necessary, to initiate effective follow-up action; and

(5) Designation/establishment of a secondary location which, in the event of disruption of air traffic services and introduction of contingency arrangements, would be able to provide, 24 hours a day, up-to-date information on the situation and associated contingency measures until the system has returned to normal. An ANS coordinating team must be designated within, or in association with, such a secondary location for the purpose of coordinating activities during the disruption.

IV. Coordination.

(a) When the ATS provider anticipates or experiences disruption of air traffic services and/or related supporting services, the ATS provider must advise, as early as practicable, GACA, and other adjacent States whose services might be affected. Such advice must include information on associated contingency measures.

(b) Each ATS provider must also determine detailed coordination requirements.

(c) In the case of contingency event with other States, each ATS provider must coordinate with GACA in order to establish formal coordination agreements on contingency plan measures to apply with each ATS provider of the concerned States.

(d) Such detailed coordination must also be undertaken with those AST providers whose services will be significantly affected, for example by re-routing of traffic.

(e) Whenever necessary to ensure orderly transition to contingency arrangements, ANS detailed coordination referred to in this section must include agreement on a detailed, common NOTAM text to be promulgated at a commonly agreed effective date.

V. Development, Promulgation and Application of Contingency Plans.

(a) ANS contingency plan must include detail all the information on current and alternative routes, navigational capability of aircraft and availability or partial availability of navigational guidance from ground- based aids, surveillance and communications capability of ANS air traffic services units, volume and types of aircraft to be accommodated and the actual status of the air traffic services, communications, meteorological and aeronautical information services. The main elements to be considered for ANS contingency planning depending upon circumstances, must take into account at least the following factors:

(1) Re-routing of traffic to avoid the whole or part of the Jeddah FIR, normally involving establishment of additional routes or route segments with associated conditions for their use;
(2) Establishment of a simplified route network through Jeddah FIR, if it is available, together with a flight level allocation scheme to ensure lateral and vertical separation, and a procedure for Riyadh and Jeddah ACC to establish longitudinal separation at the entry point and to maintain such separation through Jeddah FIR;
(3) Reassignment of responsibility for providing air traffic services in Jeddah FIR or in delegated airspace;
(4) Provision and operation of adequate air-ground communications, AFTN and ATS direct speech links, including reassignment, to adjacent FIR, of the responsibility for providing meteorological information and information on status of navigation aids;
(5) Special arrangements for collecting and disseminating in-flight and post-flight reports from aircraft;
(6) A requirement for aircraft to maintain continuous listening watch on a specified pilot-pilot VHF frequency in specified areas where air-ground communications are uncertain or non-existent and to broadcast on that frequency, preferably in English, position information and estimates, including start and completion of climb and descent;
(7) A requirement for all aircraft in specified areas to display navigation and anti-collision lights at all times;
(8) A requirement and procedures for aircraft to maintain an increased longitudinal separation that may be established between aircraft at the same cruising level;
(9) A requirement for climbing and descending well to the right of the center line of specifically identified routes;
(10) Establishment of arrangements for controlled access to the contingency area to prevent overloading of the contingency system; and
(11) A requirement for all operations in the contingency area to be conducted in accordance with IFR, including allocation of IFR flight levels, from the relevant Table of Cruising Levels in GACAR

Part 91, to ATS routes in the area.

(b) Notification, by NOTAM, of anticipated or actual disruption of air traffic services and/or related supporting services must be dispatched to users of air navigation services as early as practicable. The NOTAM must include the associated contingency arrangements. In the case of foreseeable disruption, the advance notice must in any case not be less than 48 hours.

(c) Notification by NOTAM of discontinuance of contingency measures and reactivation of the services set forth in the regional air navigation plan must be dispatched as early as practicable to ensure an orderly transfer from contingency conditions to normal conditions.

APPENDIX C TO GACAR PART 171 – DESIGNATION AND CLASSIFICATION OF AIRSPACE

This appendix provides detailed requirements for the designation and classification of airspace by specially authorized ATS providers.

I - Controlled Airspace.

C.1 Controlled Airspace: General.

(a) If the authorized ATS provider determines that an air traffic control service is required in a portion of airspace within a flight information region, the authorized ATS provider must—

(1) Designate that portion of airspace as a control area or a control zone in accordance with this section I; and
(2) Classify that portion of airspace as Class A, B, C, D, or E airspace in accordance with Section II.

(b) The requirements for flights within each class of airspace must be as shown in the table in Appendix 4 of Annex 11 to the Convention of International Civil Aviation.

(c) If another ICAO Contracting State provides an air traffic control service for any portion of KSA airspace, the authorized ATS provider —

(1) May designate that portion of airspace as a control area or a control zone in accordance with this Section only after consulting with the President and the other State; and
(2) Must classify that portion of airspace as Class A, B, C, D, or E airspace in accordance with Section II.

(d) The authorized ATS provider may designate portions of airspace within a control area or control zone as a specific sector to facilitate air traffic management.

(e) A control area or control zone becomes uncontrolled Class G airspace during those times when an air traffic control service is not being provided within that control area or control zone.

(f) For each portion of airspace designated as a control area or control zone the authorized ATS provider must-

(1) Specify the air traffic control unit that has responsibility for providing the air traffic control

service within that control area or control zone; and
(2) Identify the control area or control zone by—

(i) The ICAO nationality letters of the State providing the air traffic control service followed by the letter “A” followed by a number; and
(ii) The name of the air traffic control unit providing the air traffic control service within that control area or control zone, except that, if appropriate, the control area or control zone may be identified with the name of the aerodrome, town, city, or geographical feature over which the control area or control zone is established.

C.3 Control Areas.

(a) The authorized ATS provider may specify a control area designated under this part as—

(1) A terminal control area if the authorized ATS provider determines that an approach control service is required at the confluence of ATS routes in the vicinity of one or more major aerodromes;
(2) An upper control area if the authorized ATS provider determines that an area control service is required; or
(3) An oceanic control area if the authorized ATS provider determines that an area control service is required over the high seas.

(b) The upper limit of a control area must not exceed flight level 660.

(c) The lower limit of a control area will—

(1) Be at least 500 feet below the flight paths of IFR flights that the authorized ATS provider determines to require an air traffic control service; and
(2) Be established at—

(i) The highest practical altitude; and
(ii) Not less than 700 feet above the surface of the earth

(3) When the lower limit of a control area is above 3000 feet AMSL, coincide with a VFR cruising altitude or flight level prescribed in GACAR Part 91.

(d) If a portion of airspace below a control area is designated as another control area, the upper limit of the lower control area will extend to the lower limit of the control area directly above it.

C.5 Control Zones.

(a) The authorized ATS provider may designate as a control zone that portion of airspace around an aerodrome if—

(1) The authorized ATS provider determines that an aerodrome control service or an aerodrome and approach control service is required; and
(2) The traffic density and pattern require controlled airspace.

(b) A control zone must be as small as practical consistent with the need to protect the flight paths of IFR flights arriving at and departing from the aerodrome.

(c) The lateral limits of a control zone must—

(1) Encompass at least those portions of the airspace that are not within a control area containing the paths of IFR flights arriving at and departing from the aerodrome under IMC; and
(2) Extend to at least 5 nm from the center of the aerodrome in the directions from which instrument approaches may be made; and
(3) Take into account the category of IFR aircraft using the aerodrome and the areas of airspace that need to be protected for those IFR flights.

(d) Prominent geographical features must be used, where practical, to define the lateral limits of a control zone.

(e) A control zone with an upper limit above 3000 feet AMSL must coincide with a VFR cruising altitude or flight level prescribed in GACAR Part 91.

C.7 VFR Transit Lanes.

(a) The authorized ATS provider may designate a portion of controlled airspace as a VFR transit lane for either or both of the following purposes:

(1) Separating transiting VFR traffic from arriving and departing IFR flights;
(2) Permitting transiting VFR traffic to operate within the VFR transit lane without requiring an ATC clearance.

(b) A VFR transit lane must be clear of airspace that encompasses IFR arrival and departure procedures

within that controlled airspace.

(c) The authorized ATS provider must —

(1) Ensure that buffer zones are provided between the nominal flight paths of arriving and departing IFR flights and each VFR transit lane; and
(2) Identify each VFR transit lane by the ICAO nationality letters of the State providing the air traffic control service followed by the letter “T” followed by a number.

(d) A VFR transit lane is Class G airspace and may only be active during the day.

C.9 Subsidiary Airspace Designations.

(a) If the authorized ATS provider considers it necessary in the interests of aviation safety, air traffic management, or international agreements, and after coordination with the President, the ATS provider may designate any controlled airspace or portion of controlled airspace as any of the following:

(1) RNP or RNAV airspace, on consideration of air traffic density, ATS route structure, levels of ATS provided and aircraft navigation system performance required;
(2) RVSM airspace, on consideration of air traffic density and ATS route structure, and aircraft altimetry system accuracy. RVSM must be prescribed in that volume of airspace between FL 290 and FL 410 inclusive in the Jeddah FIR; or
(3) RCP airspace, on consideration of regional air navigation agreements and the types of ATS provided in the airspace concerned.

(b) All subsidiary airspace designations must account for airspace monitoring requirements prescribed in Chapter 7 of the Regional Supplemental Procedures as specified in ICAO Doc. 7030.

II - Airspace Classification.

C.21 Class A Airspace.

Any portion of airspace that is designated as a control area or control zone under C.3 or C.5 must be classified as Class A airspace if the authorized ATS provider considers it necessary in the interests of aviation safety where:

(a) IFR flights only are permitted,

(b) all flights are provided with air traffic control service and are separated from each other.

C.23 Class B Airspace.

Any portion of airspace that is designated as a control area or control zone under C.3 or C.5 must be classified as Class B airspace if the authorized ATS provider considers it necessary in the interests of aviation safety where —

(a) IFR and VFR flights are permitted;

(b) all flights are provided with air traffic control service and are separated from each other.

C.25 Class C Airspace

Any portion of airspace that is designated as a control area or control zone under C.3 or C.5 must be classified as Class C airspace if the authorized ATS provider considers it necessary in the interests of aviation safety where—

(a) IFR and VFR flights are permitted,

(b) all flights are provided with air traffic control service and IFR flights are separated from other IFR flights and from VFR flights.

(c) VFR flights are separated from IFR flights and receive traffic information in respect of other VFR flights.

C.27 Class D Airspace

Any portion of airspace that is designated as a control area or control zone under C.3 or C.5 must be classified as Class D airspace if the authorized ATS provider considers it necessary in the interests of aviation safety where—

(a) IFR and VFR flights are permitted and all flights are provided with air traffic control service,

(b) IFR flights are separated from other IFR flights and receive traffic information in respect of VFR flights,

(c) VFR flights receive traffic information in respect of all other flights.

C.29 Class E Airspace.

Any portion of airspace that is designated as a control area under C.3 or C.5 must be classified as Class E airspace if the authorized ATS provider considers it necessary in the interests of aviation safety where—

(a) IFR and VFR flights are permitted; and

(b) IFR flights are provided with air traffic control service and are separated from other IFR flights; and

(c) All flights receive traffic information as far as is practical.

C.31 Class F Airspace.

The authorized ATS provider may classify any portion of uncontrolled airspace as Class F airspace if the ATS provider considers it necessary in the interests of aviation safety where—

(a) IFR and VFR flights are permitted; and

(b) all participating IFR flights receive an air traffic advisory service; and

(c) all flights within the airspace must receive a flight information service if requested.

Note.— Where air traffic advisory service is implemented, this is considered normally as a temporary measure only until such time as it can be replaced by air traffic control.

C.33 Class G Airspace.

Class G airspace is any uncontrolled airspace that is not Class F airspace and IFR and VFR flights are permitted and receive flight information service if requested.

III—Special Use Airspace.

C.41 Special Use Airspace: General.

(a) The authorized ATS provider may designate special use airspace under this Section if the ATS provider considers such airspace is necessary—

(1) In the interests of safety or security within the civil aviation system;
(2) In the interests of national security; or
(3) For any other reason in the public interest.

(b) The authorized ATS provider must ensure that each portion of airspace designated under this Section is as small as practicable consistent with the activities for which the area is required and be contained within simple geometrical limits, so as to permit ease of reference by all concerned.

(c) Airspace designated by the authorized ATS provider under this section must be identified by an alphanumeric designator that is not being used to identify any other portion of airspace designated under this part.

(d) To avoid confusion, identification numbers must not be reused for a period of at least one year after cancellation of the area to which they refer.

C.43 Restricted Areas.

(a) The authorized ATS provider may—

(1) Designate a portion of airspace as a restricted area to restrict the activities of aircraft within that area within the territorial limits of Saudi Arabia; and
(2) Impose conditions under which—

(i) Aircraft may be permitted to fly within that restricted area; and
(ii) The administering authority responsible for the restricted area must operate.

(b) Upon initial establishment of a restricted area, the authorized ATS provider must—

(1) Specify the type of activity for which each restricted area is designated;

(2) Specify the administering authority responsible for each restricted area; and
(3) Identify each area by the nationality letters “OE” followed by the letter “R” followed by a unique number.
(4) ensure that the identification so assigned is used in all subsequent notifications pertaining to that area.
(5) ensure that the identification and full details on each restricted area are provided to the AIS providers authorized under GACAR Part 175 and are published in the KSA AIP.

C.45 Prohibited Areas.

(a) The authorized ATS provider may designate a portion of airspace as a prohibited area within which the flight of aircraft is prohibited except as provided in GACAR §91.133.

(b) Upon initial establishment, the authorized ATS provider must then—

(1) Specify the administering authority responsible for each prohibited area; and
(2) Identify each area by the nationality letters “OE” followed by the letter “P” followed by a unique number
(3) ensure that the identification so assigned is used in all subsequent notifications pertaining to that area.
(4) ensure that the identification and full details on each prohibited area are provided to the AIS providers authorized under GACAR Part 175 and are published in the KSA AIP.

C.47 Military Operating Areas.

(a) The authorized ATS provider may—

(1) Designate a portion of airspace as a military operating area to segregate military activities from other traffic; and
(2) Impose conditions under which—

(i) Aircraft may be permitted to fly within that military operating area; and
(ii) An administering authority specified under paragraph (b)(2) must operate.

(b) The authorized ATS provider must—

(1) Specify the type of activity for which each military operating area is designated; and

(2) Specify the administering authority responsible for each military operating area; and
(3) Identify each military operating area by the nationality letters “OE” followed by the letter “M” followed by a unique number.

C.49 Mandatory Broadcast Zones.

(a) The authorized ATS provider may designate a portion of uncontrolled airspace as a mandatory broadcast zone if, due to traffic density or special circumstances, the pilots within that zone are required to make radio broadcasts of their position and intentions.

(b) The authorized ATS provider must—

(1) Identify each mandatory broadcast zone by the nationality letters “OE” followed by the letter “B” followed by a unique number; and
(2) Assign the radio frequency to be used within the mandatory broadcast zone for the mandatory radio broadcasts; and
(3) Prescribe the procedures, message content and maximum interval between a pilot’s mandatory radio broadcasts.

C.51 Volcanic Hazard Zones.

(a) The authorized ATS provider may designate a portion of airspace as a volcanic hazard zone if volcanic activity (such as flying rocks, gas plumes, and ash clouds) may present a hazard to aircraft.

(b) The authorized ATS provider must identify each volcanic hazard zone by the nationality letters “OE” followed by the letter “V” followed by a unique number.

C.53 Danger Areas.

(a) The authorized ATS provider may designate a portion of airspace as a danger area to notify operators that there is a potential danger to aircraft flying in the area.

(b) Upon initial establishment of a danger area, the authorized ATS provider must—

(1) Specify the nature of the danger for which each danger area is designated;
(2) If the authorized ATS provider considers it necessary, nominate a using agency as the contact

point for a danger area. The using agency must be a person or organization that is responsible for the activity that necessitated the danger area being so designated; and
(3) Identify the area by the nationality letters “OE” followed by the letter “D” followed by a unique number.
(4) ensure that the identification so assigned is used in all subsequent notifications pertaining to that area.
(5) ensure that the identification and full details on each danger area are provided to the AIS providers authorized under GACAR Part 175 and are published in the KSA AIP.

IV - Transponder Mandatory Airspace.

C.61 Transponder Mandatory Airspace Within Controlled Airspace.

The authorized ATS provider may designate a control area or a control zone, or any portion of a control area or a control zone, as transponder mandatory airspace if—

(1) The operation of transponders is required for the provision of an air traffic control surveillance service; or

(2) The authorized ATS provider determines that the traffic density in the airspace requires the operation of transponders to reduce the risk of an airborne collision with those aircraft that are required to be fitted with an airborne collision avoidance system.

C.63 Transponder Mandatory Airspace Within Special Use Airspace.

The authorized ATS provider may designate any portion of special use airspace as transponder mandatory airspace if the authorized ATS provider determines that the traffic density in the airspace requires the operation of transponders to reduce the risk of an airborne collision with those aircraft that are required to be fitted with an airborne collision avoidance system.

V—Miscellaneous.

C.71 Visual Reporting Points.

(a) The authorized ATS provider may designate visual reporting points for the purpose of—

(1) Facilitating the requirements of air traffic services for information regarding the progress of aircraft in flight; or
(2) Facilitating the safe conduct of flight by visual reference.

(b) The authorized ATS provider must ensure that visual reporting points —

(1) Are based on prominent geographical features; and

(2) Are identified by names or designators that—

(i) Are easily recognizable in voice communications;
(ii) Will not be confused with those of other reporting points in the same general area; and
(iii) Do not create confusion with other communications exchanged between pilots and between air traffic services and pilots.

C.73 Mountainous Zone.

The authorized ATS provider may designate a portion of airspace as a mountainous zone if, in the interests of safety, the authorized ATS provider considers it necessary to increase the minimum obstacle clearance to provide additional height above terrain for IFR flights to accommodate the possible effects of turbulence, down draughts, and other meteorological phenomena on the performance of aircraft.

C.75 Designated Air Defense Identification Zones (ADIZ).

The authorized ATS provider may designate a portion of airspace as an ADIZ for which special flight procedures apply in order to facilitate national security.

APPENDIX D TO GACAR PART 171 - PERFORMANCE-BASED OPERATIONS

I - Performance-based navigation (PBN)

D1 – PBN Operations

(a) When applicable, the navigation specification(s) for designated areas, tracks or ATS routes must be prescribed by an ATS Provider on the basis of regional air navigation agreements.

(b) In designating a navigation specification, limitations may apply as a result of navigation infrastructure constraints or specific navigation functionality requirements.

(c) ATS Providers must take every opportunity to implement performance-based navigation operations as soon as practicable.

(d) The prescribed navigation specification must be appropriate to the level of communications, navigation and air traffic services provided in the airspace concerned.

Note - Applicable guidance on performance-based navigation and implementation is published in the Performance based Navigation (PBN) Manual (Doc 9613).

II Performance-based communication (PBC)

D3 - PBC Operations

(a) When applicable, the RCP specification(s) must be prescribed by an ATS Provider on the basis of regional air navigation agreements. In prescribing an RCP specification, limitations may apply as a result of communication infrastructure constraints or specific communication functionality requirements.

(b) The prescribed RCP specification must be appropriate to the air traffic services provided.

Note - Information on the performance-based communication and surveillance (PBCS) concept and guidance material on its implementation are contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).

III Performance-based surveillance (PBS)

D5 - PBS Operations

(a) When applicable, the RSP specification(s) must be prescribed on the basis of regional air navigation agreements. In prescribing an RSP specification, limitations may apply as a result of surveillance infrastructure constraints or specific surveillance functionality requirements.

(b) The prescribed RSP specification must be appropriate to the air traffic services provided.

(c) Where an RSP specification has been prescribed for performance-based surveillance, ATS units must be provided with equipment capable of performance consistent with the prescribed RSP specification(s).

Note - Information on the PBCS concept and guidance material on its implementation are contained in the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).

APPENDIX E TO GACAR PART 171 – REMOTE AERODROME TOWER OPERATIONAL REQUIREMENTS

This appendix provides details on the main operational requirements that must be met for the provision of remote aerodrome air traffic services. For the purpose of this appendix, the following definitions apply:

Conventional tower: A facility located at an aerodrome from which aerodrome Air Traffic Services (ATS) is provided principally through direct out-of-the-window observation of the aerodrome and its vicinity.

Latency: The amount of time it takes to deliver data from one interface point to another interface point, corresponding to the processing and communication durations.

Out-the-window view (OTW): A view of the areas of responsibility of the aerodrome ATS unit from a conventional tower, obtained via direct visual observation.

Remote Aerodrome ATS: Provision of aerodrome Air Traffic Services (ATS) from a remote tower/remote tower module (RTM).

Remote tower: A geographically independent facility from which aerodrome ATS is provided principally through indirect observation of the aerodrome and its vicinity, by means of a visual surveillance system. (It is to be seen as a generic term, equivalent in level to a conventional tower).

Remote Tower Centre (RTC): A facility housing one or more Remote Tower Module (RTM)s.

Remote tower module (RTM): A combination of systems and constituents from where remote aerodrome ATS can be provided, including one or more ATCO/AFISO workstation(s) and the visual presentation. (It can be compared with the tower cabin of an aerodrome conventional tower).

Single mode of operation: The provision of ATS from one RTM for one aerodrome at a time.

Visual presentation: A view of the area(s) of responsibility of the aerodrome ATS unit, provided by a visual display.

Visual surveillance system: An electro-optical system providing an electronic visual presentation of traffic and any other information necessary to maintain situational awareness at an aerodrome and its

vicinity.

I. – REMOTE AERODROME TOWER

E1. Modes of operations

The ATS provider may provide remote aerodrome ATS from a centralized facility known as a Remote Tower Centre (RTC), which could house one or several RTMs. In all cases, the provision of remote aerodrome air traffic services (ATS) can be implemented using the following modes of operation:

(a) **Single mode of operations:** refers to the provision of ATS to one aerodrome at a time, from a single remote tower module (RTM). The operational applications for this mode of operation include, but are not limited to:

(1) the provision of ATS to one aerodrome;
(2) planned or unplanned contingency situations, as a dedicated backup solution for an existing aerodrome ATS.
(3) to unsighted or visually blind areas of an aerodrome, for which the view from the conventional tower is inadequate or non-existent, by implementing visual surveillance system elements at the conventional tower.

(b) **Multiple mode of operation:** refers to the provision of ATS to more than one aerodrome at a time, i.e., simultaneous service provision, from a single RTM. The operational applications for this mode of operation include, but are not limited to:

(1) the provision of ATS to more than one aerodrome simultaneously from one RTM.
(2) the local or mixed conventional and remote aerodrome ATS operations — the situation where a conventional tower or local facility at the aerodrome is also providing ATS to another aerodrome remotely (additionally and simultaneously with the provision ATS to the local aerodrome), through the use of a visual surveillance system providing the visual view of the remote aerodrome.

(c) When the remote aerodrome tower is used as backup facility, the ATS provider must define:

(1) the required level of human-machine interface (HMI) similarity with respect to the conventional tower;
(2) the rules on traffic complexity (mix of aircraft and vehicles etc.), capacity and duration of service, and switchover time for the backup facility.

Note: Similarity to the ATCO/AFISO workstations and support tools provided in the conventional tower would reduce both the ATCO/AFISO familiarization time during the transition into contingency phase as well as the need for recurrent contingency training.

(d) When an ATS provider considers use of multiple mode of operation for the provision of remote aerodrome ATS, the following requirements applied:

(1) The number and size of aerodromes to be combined in multiple mode of operation must be carefully assessed through a comprehensive aeronautical study and safety risk assessment, taking into account operational and technical considerations such as traffic density, complexity, simultaneous aircraft movements, meteorological conditions across the aerodromes, geographical locations and the aerodromes' surrounding topography/terrain, and runway orientations;
(2) Demonstrate that a suitable level of systems and equipage will support the intended ATS operations;
(3) No mixed ATS services i.e., ATC and AFIS in multiple mode of operation are allowed; and
(4) Submit the aeronautical study and the safety risk assessment (SRA) required under Paragraph (d)(1) to the President for acceptance.

Note: The results of the validation exercises performed at regional level show that the multiple mode of operation can be applied for the simultaneous provision of ATS to two low-density aerodromes by a single ATCO/AFISO.

II.– REMOTE AERODROME ATS FACILITIES

E3. List of remote ATS Facilities

For remote aerodrome tower, the ATS facilities and associated configuration must be carefully assessed and selected according to the operational needs and supported and identified by the safety, security, and human factors assessments. The remote aerodrome ATS facilities must, at least, include the following:

(a) Visual presentation, replacing, or complementing, the OTW view of a conventional tower;

(b) Binocular functionality (e.g., a pan-tilt-zoom (PTZ) camera/function, as defined and described in the updated EUROCAE Document -240A), fulfilling/emulating the function of a binocular in a conventional tower by allowing the ATCO/AFISO to have a close-up view of a specific location or object;

(c) Signaling lamp, remotely controlled;

(d) Aerodrome ambient sound reproduction;

(e) Telecommunications means to provide aeronautical mobile service, aeronautical fixed service and surface movement control service;

(f) presentation of ATS surveillance system(s), (e.g., air situation displays or surface movement control display(s)), when available;

(g) presentation and updating of flight plan and control data;

(h) access to all relevant operational data (e.g., AIP information, NOTAMs, Manual of operations, etc.) required for conducting the ATS tasks.

(i) presentation of the correct time in the format of hours, minutes and seconds in UTC;

(j) Operation and monitoring of ground navigation aids, and aerodrome ground lights;

(k) Monitoring of electrical systems and status of the power supply for the facilities used for the provision of remote ATS;

(l) Meteorological information;

(m) If needed, dedicated means to facilitate the detection and identification, as well as enabling automatic tracking of aircraft or vehicles in the visual presentation (e.g., by overlaid labels based on data from ATS surveillance systems/sensors such as ADS-B, PSR, SSR, A-SMGCS, complemented by flight plan correlation when available, commonly referred to as ‘surveillance tracking’);

(n) Dedicated means to facilitate the detection and tacking of moving objects in the visual presentation (e.g., by highlighting/framing such objects based on image processing techniques, commonly referred to as ‘visual tracking’);

(o) System support to help the ATCO/AFISO detect smaller foreign object debris (FOD), highlighting the existence of such small objects in the visual presentation;

(p) Other overlaid information in the visual presentation such as framing and/or designation of runways, taxiways, etc., compass directions, meteorological information, aeronautical information (NOTAM, SNOWTAM, etc.), other operational information (e.g. runway surface condition with contaminent as defined under GACAR Part 139, Appendix E-3, etc.);

(q) Enhanced functionalities of the binocular functionality, e.g., automatic following of moving objects;

III.– REMOTE AERODROME ATS PROCEDURAL CONSIDERATIONS

E5. Operational documentation

(a) The ATS Provider must:

(1) Submit to GACA the remote aerodrome tower System specifications, a compliance matrix between System Specifications and Technical and Operational Documentation and GACAR Part 173 Appendix C Requirements with justification and details for any variation or deviation.
(2) A comprehensive Safety Risk Assessment (SRA) identifying all potential hazards and safety requirements;
(3) Define the arrangements for managing each RTC and associated RTMs with clear Job description of management and supervisory positions;
(4) Identify the required unit endorsement(s) for ATCOs/AFISOs to provide remote aerodrome ATS in accordance with GACAR Part 64 requirements.
(5) Setup a roster for ATCOs/AFISOs allowing the regular exercise of the privileges with a minimum number of hours that must be retained for each unit endorsement individually and a number of hours for the overall exercises of the privileges.
(6) develop and submit an End-User Guide and manual to the President for acceptance. This documentation must contain all relevant information associated with the operation of the remote aerodrome tower by ATCOs/AFISOs. The End-User guide and manual must provide a complete and accurate information on how to operate and maintain the system.
(7) prepare and submit user training for the President acceptance where the user may be an ATCO/AFISO, and System Administrators. This training material is to provide ATCO/AFISO, and System Administrators with a solid understanding of proper system operations, capabilities, and limitations as detailed in the End-User Guide & Manual. The system administrators may be designated by a certified ATEL provider.
(8) sign a contractual arrangement with a certified ATEL provider under GACAR Part 173 covering the operation and maintenance of all facilities used in the provision remote aerodrome ATS. The contractual arrangements must be accepted by the President..
(9) Ensure that appropriate local agreements are signed with all stakeholders (e.g. aerodrome operator, aerodrome MET Office/station…etc.) that identify clear responsibilities concerning operation and support, monitoring and reporting of events, maintenance, and contingency arrangements for remote aerodrome tower systems.

(b) In addition to the aerodrome ATS requirements prescribed in Subpart O of this part, the ATS provider must establish appropriate procedures to:

(1) allow ATCOs/AFISOs to verify the status of the aerodrome (in terms of traffic, weather situation,

etc.) and its related systems before initiating ATS service provision, or before assuming responsibility for service provision, and to properly organize handover/takeover the control of operational systems;
(2) enable ATCOs/AFISOs to identify any failure or irregularity in the remote ATS facilities which could adversely affect the safety or efficiency of flight operations and/or the provision of ATS, such as corrupt, delayed (beyond the defined maximum latency value) or frozen image of the visual surveillance system, and to take the appropriate measures;
(3) enables the transfer of responsibility of ATS for aerodromes between RTMs within the RTC. The procedures must also cover the merging and splitting of aerodromes between RTMs;
(4) manage capacity peaks or high ATCO/AFISO workload for any other reason to address when and how to open an additional position in the RTM or when and how to split aerodromes into separate RTMs. All mechanisms and arrangements must be validated, documented in the End-user guidance and manual, and accepted by the President.
(5) When service can be provided to one aerodrome from different locations (RTC, conventional tower) the ATS provider must establish appropriate procedures and conditions for switching and assuming of responsibility of ATS between these locations to adequately manage the operational circumstances (e.g. ‘when and how’) for any such scenario. All defined procedures and conditions must be validated, documented in the operations manual, and accepted by the President;
(6) coordinate with the aerodrome operational units or contracted certificated ATEL provider on-site checks of the status of equipment and systems in case of warnings or abnormal behavior of the visual surveillance system or other facilities. The coordination may also include circumstances for when to alert rescue and firefighting services.

IV.– LOCAL OPERATIONAL VISUAL PERFORMANCE (OVP) REQUIREMENTS

E7. OVP Considerations

(a) The ATS provider must define the local operational visual performance, tailored to the specific operational needs and the specific operational context.

(b) In addition to the local operational visual performance needs to be identify as required in (a), the ATS provider must ensure that, at least, the following operational visual performance requirements are met for the provision of remote aerodrome ATS:

(1) the visual surveillance system is operationally validated in various visual conditions (e.g., dawn, daylight, dusk, darkness and different visibility conditions), not only as a variation in time but also as a variation in the presented view of the aerodrome and its vicinity at one point in time — as light conditions are likely to differ across the view.

Note: It may be beneficial to apply a 'scenario/use case' approach both when defining and validating operational visual performance requirements. For instance, a scenario could be: 'Detect an aircraft of a certain type/size at 5 NM final, recognize the aircraft at some stage to be able to give a landing clearance, be able to see/follow the aircraft during its complete landing from detection to landing, roll-out, taxiing off the runway and until taxiing to apron (leaving the manoeuvering area)'.

(2) the visual surveillance system and presentation must allow ATCO/AFISO, within the area of responsibility of the remote aerodrome ATS, to recognize, identify, and observe under various visual conditions:

(i) any aircraft type, and unmanned aircraft during all ground surface movements including holding positions or in-flight with information on its relative altitude, speed, and distance from the threshold during approach or after take-off;
(ii) the position of all flights in the traffic circuit, during approach, landing, and take-off and to assess any resulting conflict;
(iii) any helicopter during taxiing, hovering and its relative positions from other aircraft.
(iv) aircraft abnormal configurations or conditions, such as landing gear not or only partly extended or unusual smoke emissions from any part of the aircraft;
(v) location of vehicles, mobile or fix obstructions, and presence of personnel on the manoeuvering area;
(vi) significant meteorological conditions in the take-off and climb-out area;
(vii) visual communication from aircraft and helicopters in the vicinity of the aerodrome (e.g aircraft flashing or showing landing lights (in darkness), moving ailerons (or rudder) (in daylight), aircraft repeatedly changing its bank angle "rocking wings" (in daylight));
(viii) visibility landmarks and visual reporting points used by VFR flights in order to verify the aircraft relative positions;
(ix) status of visual aids, ground lighting, and obstacle lights in the movement area;
(x) work-in-progress in the movement area which may affect the aircraft operations.

(c) The ATS provider must ensure that visual surveillance system:

(1) includes means to reduce the impact caused by environmental factors, variable light conditions across the field of view, counter-light effects (e.g., glare from direct sunlight/low standing sun), dust, precipitation (e.g. rain, snow, hail), condensation, winds, or any other weather phenomena as applicable to the local conditions at the aerodrome;
(2) is cleaned regularly and on short notice by ATCOs/AFISOs to keep the fidelity of the visual presentation as required for ATS service provision.

V.– AERODROME RELATED ASPECTS

E9. Aeronautical Publication

The ATS provider must develop, and validate the aeronautical information related to the provision of remote aerodrome ATS. This information must be coordinated and agreed with the aerodrome operator prior to its submission for publication in KSA AIP pursuant to GACAR Part 175 requirements;

E11. Aerodrome manual

(a) The ATS provider must coordinate with the aerodrome operator to ensure that, at least the following, operational information and procedures are inserted in the aerodrome manual.

(1) procedures for the day-to-day coordination (day- and night-time) between the aerodrome operator and the ATS Unit providing remote aerodrome ATS, including wildlife management, airside work in progress, etc.,
(2) procedures for the participation of ATS personnel in the aerodrome's safety committees, including the Local Runway Safety Team;
(3) procedures to facilitate site awareness of remote aerodrome ATS personnel (ATCOs/AFISOs), including e.g., the frequency and the agenda for on-site familiarization visits;
(4) procedures for low-visibility/extreme weather situations;
(5) information about the location of facilities (maps, charts), installations and equipment enabling and supporting the remote aerodrome ATS, within and, if applicable, outside the aerodrome's boundaries;
(6) operating, maintenance (including emergency maintenance) repair and service instructions, troubleshooting and inspection procedures of facilities, installations and equipment enabling and supporting the remote aerodrome ATS. The information must focus on the aerodrome responsibilities;
(7) procedures for aerodrome meteorological observations;
(8) procedures and measures for site protection of facilities, installations and equipment enabling and supporting the remote aerodrome ATS, control of activities, and ground maintenance in the vicinity of these installations;
(9) procedures for safeguarding remote aerodrome ATS facilities, installations and equipment from unauthorized access and cyberthreats;
(10) procedures for the use of light and pyrotechnic signals to aerodrome traffic;
(11) procedures for initiating a NOTAM on the degradation of remote aerodrome ATS in the event of failure of facilities, installations and equipment enabling and supporting the remote aerodrome ATS.