



Part 174

Certification and operation of Egyptian organizations providing aeronautical telecommunication services

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Subpart A General

174.1 Applicability

- (a) The objective of the aeronautical telecommunications service is to ensure that the telecommunications and radio aids to air navigation necessary for the safety, regularity, and efficiency of air navigation.
- (b) This Part prescribes rules governing:
 - (1) "Aeronautical telecommunications systems" that includes radio navigation aids and aeronautical communications systems.
 - (2) The certification and operation of Egyptian organizations providing aeronautical telecommunication services (communications procedures) in support of IFR flight or an air traffic service.

174.3 Definitions and abbreviations

A- Definition

SERVICES

- **Aeronautical fixed service (AFS).** A telecommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air services.
- **Aeronautical fixed telecommunication network (AFTN).** A worldwide system of aeronautical fixed circuits provided, as part of the aeronautical fixed service, for the exchange of messages and/or digital data between aeronautical fixed stations having the same or compatible communications characteristics.
- **Aeronautical mobile service (RR S1.32).** A mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radio beacon stations may also participate in this service on designated distress and emergency frequencies.
- **Aeronautical mobile (R)* service (RR S1.33).** An aeronautical mobile service reserved for communications relating to safety and regularity of flight, primarily along national or international civil air routes.
- **Aeronautical fixed telecommunication network (AFTN).** A worldwide system of aeronautical fixed circuits provided, as part of the aeronautical fixed service, for the exchange of messages and/or digital data between aeronautical fixed stations having the same or compatible communications characteristics.
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- STATIONS

- **Aerodrome control radio station.** A station providing radio communication between an aerodrome control tower and aircraft or mobile aeronautical stations. * route Chapter 1 Annex 10 — Aeronautical Telecommunications 1-3 10/11/16
- **Aeronautical fixed station.** A station in the aeronautical fixed service. Aeronautical station (RR S1.81). A land station in the aeronautical mobile service. In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea. Aeronautical telecommunication station. A station in the aeronautical telecommunication service.
- **AFTN communication centre.** An AFTN station whose primary function is the relay or retransmission of AFTN traffic from (or to) a number of other AFTN stations connected to it.

- **AFTN destination station.** An AFTN station to which messages and/or digital data are addressed for processing for delivery to the addressee.
- **AFTN origin station.** An AFTN station where messages and/or digital data are accepted for transmission over the AFTN.
- **AFTN station.** A station forming part of the aeronautical fixed telecommunication network (AFTN) and operating as such under the authority or control of a State.
- **Communication centre.** An aeronautical fixed station which relays or retransmits telecommunication traffic from (or to) a number of other aeronautical fixed stations directly connected to it.
- **Mobile surface station.** A station in the aeronautical telecommunication service, other than an aircraft station, intended to be used while in motion or during halts at unspecified points.
- **Network station.** An aeronautical station forming part of a radiotelephony network.
- **Radio direction finding (RR S1.12).** Radio determination using the reception of radio waves for the purpose of determining the direction of a station or object.
- **Radio direction-finding station (RR S1.91).** A radio determination station using radio direction finding.
Note. — The aeronautical application of radio direction finding is in the aeronautical radio navigation service.
- **Regular station.** A station selected from those forming an en-route air-ground radiotelephony network to communicate with or to intercept communications from aircraft in normal conditions.
- **Tributary station.** An aeronautical fixed station that may receive or transmit messages and/or digital data but which does not relay except for the purpose of serving similar stations connected through it to a communication centre.
-

COMMUNICATION METHODS

- **Air-ground communication.** Two-way communication between aircraft and stations or locations on the surface of the earth.
- **Air-to-ground communication.** One-way communication from aircraft to stations or locations on the surface of the earth.
- **Blind transmission.** A transmission from one station to another station in circumstances where two-way communication cannot be established but where it is believed that the called station is able to receive the transmission.
- **Broadcast.** A transmission of information relating to air navigation that is not addressed to a specific station or stations.
- **Duplex.** A method in which telecommunication between two stations can take place in both directions simultaneously.
- **Ground-to-air communication.** One-way communication from stations or locations on the surface of the earth to aircraft.
- **Interpilot air-to-air communication.** Two-way communication on the designated air-to-air channel to enable aircraft engaged in flights over remote and oceanic areas out of range of VHF ground stations to exchange necessary operational information and to facilitate the resolution of operational problems.
- **Non-network communications.** Radiotelephony communications conducted by a station of the aeronautical mobile service, other than those conducted as part of a radiotelephony network.
- **Radiotelephony network.** A group of radiotelephony aeronautical stations which operate on and guard frequencies from the same family and which support each other in a defined manner to ensure maximum dependability of air-ground communications and dissemination of air-ground traffic.
- **Readback.** A procedure whereby the receiving station repeats a received message or an appropriate part thereof back to the transmitting station so as to obtain confirmation of correct reception.
- **Simplex.** A method in which telecommunication between two stations takes place in one direction at a time.

- *Note.*— In application to the aeronautical mobile service this method may be subdivided as follows: a) single channel simplex; b) double channel simplex; c) offset frequency simplex.
- **Telecommunication** (RR S1.3). Any transmission, emission, or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems.

- DIRECTION FINDING

- **Homing.** The procedure of using the direction-finding equipment of one radio station with the emission of another radio station, where at least one of the stations is mobile, and whereby the mobile station proceeds continuously towards the other station.
- **Radio bearing.** The angle between the apparent direction of a definite source of emission of electro-magnetic waves and a reference direction, as determined at a radio direction-finding station. A true radio bearing is one for which the reference direction is that of true North. A magnetic radio bearing is one for which the reference direction is that of magnetic North.

- TELETYPEWRITER SYSTEMS

- **Automatic relay installation.** A teletypewriter installation where automatic equipment is used to transfer messages from incoming to outgoing circuits.
Note. — This term covers both fully automatic and semi-automatic installations.
- **Fully automatic relay installation.** A teletypewriter installation where interpretation of the relaying responsibility in respect of an incoming message and the resultant setting-up of the connections required to effect the appropriate retransmissions is carried out automatically, as well as all other normal operations of relay, thus obviating the need for operator intervention, except for supervisory purposes.
- **Message field.** An assigned area of a message containing specified elements of data.
- **Semi-automatic relay installation.** A teletypewriter installation where interpretation of the relaying responsibility in respect of an incoming message and the resultant setting-up of the connections required to effect the appropriate retransmissions require the intervention of an operator but where all other normal operations of relay are carried out automatically.
- **Teletypewriter tape.** A tape on which signals are recorded in the 5-unit Start-Stop code by completely severed perforations (Chad Type) or by partially severed perforations (Chadless Type) for transmission over teletypewriter circuits.
- **“Torn-tape” relay installation.** A teletypewriter installation where messages are received and relayed in teletypewriter tape form and where all operations of relay are performed as the result of operator intervention.

- AGENCIES

- **Aeronautical telecommunication agency.** An agency responsible for operating a station or stations in the aeronautical telecommunication service.
- **Aircraft operating agency.** A person, organization or enterprise engaged in, or offering to engage in, an aircraft operation.

FREQUENCIES

- **Primary frequency.** The radiotelephony frequency assigned to an aircraft as a first choice for air-ground communication in a radiotelephony network.
- **Secondary frequency.** The radiotelephony frequency assigned to an aircraft as a second choice for air-ground communication in a radiotelephony network.

- DATA LINK COMMUNICATIONS

- **Controller-pilot data link communications (CPDLC).** A means of communication between controller and pilot, using data link for ATC communications.

- **CPDLC message.** Information exchanged between an airborne system and its ground counterpart. A CPDLC message consists of a single message element or a combination of message elements conveyed in a single transmission by the initiator.
- **CPDLC message set.** A list of standard message elements and free text message elements.
- **Current data authority.** The designated ground system through which a CPDLC dialogue between a pilot and a controller currently responsible for the flight is permitted to take place.
- **Free text message element.** Part of a message that does not conform to any standard message element in the PANS-ATM (Doc 4444). Logon address. A specified code used for data link logon to an ATS unit.
- **Next data authority.** The ground system so designated by the current data authority through which an onward transfer of communications and control can take place. Standard message element. Part of a message defined in the PANS-ATM (Doc 4444) in terms of display format, intended use and attributes.

- MISCELLANEOUS

- **Aeronautical fixed circuit.** A circuit forming part of the aeronautical fixed service (AFS).
- **Aeronautical fixed telecommunication network circuit.** A circuit forming part of the aeronautical fixed telecommunication network (AFTN).
- **Aeronautical telecommunication log.** A record of the activities of an aeronautical telecommunication station.
- **Air-report.** A report from an aircraft in flight prepared in conformity with requirements for position, and operational and/or meteorological reporting.
Note. — Details of the AIREP form are given in the PANS-ATM (Doc 4444).
- **Altitude.** The vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL). ATS direct speech circuit.
- **An aeronautical fixed service (AFS) telephone circuit,** for direct exchange of information between air traffic services (ATS) units.
- **Automatic telecommunication log.** A record of the activities of an aeronautical telecommunication station recorded by electrical or mechanical means.
- **Flight level.** A surface of constant atmospheric pressure which is related to a specific pressure datum, 1 013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals. Note 1.— A pressure type altimeter calibrated in accordance with the standard atmosphere: a) when set to a QNH altimeter setting, will indicate altitude; b) when set to a QFE altimeter setting, will indicate height above the QFE reference datum; c) when set to a pressure 1 013.2 hPa, may be used to indicate flight levels. Note 2.— The terms “height” and “altitude”, used in Note 1 above, indicate altimetric rather than geometric heights and altitudes.
- **Frequency channel.** A continuous portion of the frequency spectrum appropriate for a transmission utilizing a specified class of emission. Note.— The classification of emissions and information relevant to the portion of the frequency spectrum appropriate for a given type of transmission (bandwidths) are specified in the ITU Radio Regulations, Article S2 and Appendix S1.
- **Height.** The vertical distance of a level, a point or an object considered as a point, measured from a specified datum. Human performance. Human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.
- **Location indicator.** A four-letter code group formulated in accordance with rules prescribed by ICAO and assigned to the location of an aeronautical fixed station.
- **Meteorological operational channel.** A channel of the aeronautical fixed service (AFS), for the exchange of aeronautical meteorological information.
- **Meteorological operational telecommunication network.** An integrated system of meteorological operational channels, as part of the aeronautical fixed service (AFS), for the exchange of aeronautical meteorological information between the aeronautical fixed stations within the network. Note. — “Integrated” is to be

interpreted as a mode of operation necessary to ensure that the information can be transmitted and received by the stations within the network in accordance with pre-established schedules.

- **NOTAM.** A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.
- **Operational control communications.** Communications required for the exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of the safety of the aircraft and the regularity and efficiency of a flight. Note. — Such communications are normally required for the exchange of messages between aircraft and aircraft operating agencies. Route segment. A route or portion of route usually flown without an intermediate stop. Routing Directory. A list in a communication centre indicating for each addressee the outgoing circuit to be used.
- **SNOWTAM.** A special series NOTAM notifying the presence or removal of hazardous conditions due to snow, ice, slush or standing water associated with snow, slush and ice on the movement area, by means of a specific format.

Aeronautical telecommunication service means:

- (a) A telecommunication service provided to support the following services (as defined in Annex 10, Volume II, Chapter (1);
 - (1) Aeronautical broadcasting service;
 - (2) Aeronautical fixed service (AFS); and
 - (3) Aeronautical mobile service.
- (b) Any other telecommunication service provided specifically to support the Egyptian air navigation system:

Annex 10 means Annex 10 Volume II to the Convention:

Facility means:

- (a) The following types of communication systems for the aeronautical broadcast service (as that service is defined in Annex 10, Volume II, Chapter 1); meteorological information for aircraft in flight (VOLMET); and automatic terminal information service (ATIS);
- (b) The following types of communication systems for the aeronautical fixed service (as that service is defined in Annex 10, Volume II, Chapter 1); ATS direct speech circuits; aeronautical fixed telecommunication network (AFTN); ground- ground data interchange; and
 - (1) The ground elements of the following types of communication systems for the aeronautical mobile service (as that service is defined in Annex 10, Volume II, Chapter 1); HF air-ground communication; VHF air-ground communication; and selective calling system (SELCAL); air-ground data interchange.

174.5 Requirement for certification

- (a) No person shall provide an aeronautical telecommunication service except under the authority of, and in accordance with, the provisions of a telecommunication service Certificate issued under this ECAR part.
- (b) A person who operates any equipment that is part of an aeronautical telecommunications system referred to in Annex 10 to the Convention shall ensure that:
 - (1) The system is operated in accordance with the standards specified in Annex 10; and documentation is maintained that shows how compliance with the standards referred to in Paragraph (a).
 - (2) No person shall perform a function related to the operation of any aeronautical
 - (3) Telecommunication equipment unless the person has successfully completed training.
 - (4) In the performance of that function and has been certified.

174.7 Application for certification

- (a) Each applicant for the grant of a telecommunication service certification shall:

- (1) Complete the form ECAA issued by the ECAA which requires the following information:
 - (i) The applicant's name and address for the service in Egypt;
 - (ii) The specific telecommunication service to be provided;
 - (iii) The aerodrome location at, or within which the service will be provided; and
 - (iv) Such other particulars relating to the applicant and the intended service as may be required by the ECAA as indicated on the form.
- (2) Submit the completed form to ECAA with:
 - (i) The exposition required by 174.61; and
 - (ii) Payment of the appropriate application official fee:
- (b) Each applicant shall include with the application:
 - (1) For each aerodrome a schedule of proposed hours of service for the first 12 months of operation; and
 - (2) In respect of an aerodrome not currently provided with a telecommunication service, a summary of safety factors shall be considered before seeking certification.

174.9 Issue of certificate

An applicant is entitled to a telecommunication service organization certificate if:

- (a) The applicant meets the requirements of this part;
- (b) The applicant, and the applicant's senior person or persons required by 174.51(a)(1) and (2) are fit and proper persons; and
- (c) The granting of the certificate is not contrary to the interests of aviation safety as (AFTN/CIDIN/HF/SSB AND VOLMET).

174.11 Privileges of certificate holder

- (a) A telecommunication service certification specifies the types of facilities that the certificate holder is authorized to operate.
- (b) Subject to 174.111, the holder of a telecommunication service certificate may operate any of the facility types listed on the holder's certificate provided that:
 - (1) Each facility operated is listed in the holder's exposition; or
 - (2) If the facility is not listed in the exposition, its operation is for site test purposes controlled by the procedures required by 174. 59.

174.13 Duration of certification

- (a) A telecommunication service Certification may be granted or renewed for a period of up to 5 years
- (b) A telecommunication certificate remains in force until it expires or is suspended or revoked.
- (c) The holder of a telecommunication certificate that expires or is revoked shall promptly surrender the certificate to the ECAA.
- (d) The holder of a telecommunication certificate that is suspended shall promptly produce the certificate to the ECAA for appropriate endorsement.

174.15 Renewal of certificate

Incase of the suspension of the certification:

- (a) An application for the renewal of a telecommunication service certificate shall be made on the appropriate application form.
- (b) The application shall be submitted not less than 60 days before the certificate expires.
- (c) The certificate holder shall comply with any additional conditions specified by the ECAA to renew the certificate.

174.16 ECAA Inspection Authority

- (a) Each person holds a certificate under this part (or applied for such certificate) shall grant unrestricted and unlimited access for ECAA inspectors to inspect his personnel, facilities, equipment, documents and records to determine:
 - (1) Eligibility to continue to hold his certificate.
 - (2) Compliance with this ECAR part
- (b) Failure to comply with paragraph (a) above shall be a basis to suspend, withdraw or revoke any certificate issued under this part.

174.17 Impose a penalty, suspension or revocation

- (a) Penalties
 - (1) ECAA may impose a penalty (according to the Civil Aviation Law N.28 item No. 157), or reduce some privileges to the certificate holder if:
 - (i) It finds that the certificate holder does not comply with the requirements of this Part and such holder failed to remedy such non-compliance within 60-days after receiving notice in writing from ECAA to do so;
 - (ii) Such action is necessary in the interest of safety;
 - (iii) Its inspector is prevented by the provider from carrying out a safety inspection when his report recommends such action; and
 - (iv) The certificate holder failed to provide the service in the required standard level, which is confirmed to ECAA by receiving reports from the users of the service and proved by a legal investigation.
 - (2) When proposing a penalty, ECAA will state the reasons for such action and will furnish them to the certificate holder.
- (b) Suspension of Certificate this is a subsequent procedure to impose a penalty:
 - (1) ECAA may suspend for a defined period, an Telecommunication certificate issued under this part if:
 - (i) Subject to item 174.17 Paragraph (a), ECAA is satisfied that the certificate holder still unable to remedy any of these non-compliant areas with the specified time frame of 60-days;
 - (ii) The investigation, in case of an accident, proves that it was caused due to the faulty procedures and/or the malfunction or failure of Telecommunication equipment or system;
 - (iii) The certificate holder failed to perform the action plan stated in the certificate in the exact period of time if so stated; and
 - (iv) Such actions still necessary in the interest of aviation safety.
 - (2) When proposing a suspension, the ECAA will state the reasons for such action and furnish them to the certificate holder;
 - (3) The certificate holder may appeal against such notice within 30-days or receipt;
 - (4) The appellant shall furnish to ECAA any documents, records, or other pertinent information supporting the appeal; and
 - (5) ECAA may confirm, modify, or set aside the proposed suspension based on the appeal.
- (c) Revocation of Certificate this is a subsequent procedure to suspension.
 - (1) ECAA may permanently revoke an Telecommunication unit certificates issue under this part if:
 - (i) It is verified that the certificate holder will not be able termed non-compliant areas; or
 - (ii) The certificate holder stops providing the service concerned without a convincing argument.
 - (2) ECAA has decided for the interest of safety to terminate services provided at this aerodrome;
 - (3) The Ministerial Order issued for the certificate holder is revoked; and
 - (4) The revoked certificate cannot be renewed, it has to be reissued not less than one year after the revocation date.
- (d) Provisional Approval

- (1) ECAA may, if it is considered in the interest of safety, grant an existing certificate holder a provisional approval to act as a substitute Telecommunication service provider in respect to a certificate that has been withdrawn suspended or revoked.
- (2) The substituting provider shall follow the specified conditions and responsibilities stated in the certificate.

174.19 Contingency plan

Each applicant for the grant of a telecommunication services certificate shall establish a Contingency plan providing for the safe and orderly flow of information in the event of a disruption, and/ or interruption.

174.21 Emergency Plan

Each applicant for the grant of a telecommunication services certificate shall establish a emergency plan providing for the safe and orderly flow of information in the emergency cases.

174.23 Operations Manuals

- (a) Each holder of an aeronautical telecommunication officer certificate shall provide, for compliance by its personnel, an operations manual or system of manuals for the services listed;
- (b) The operations manuals must be a controlled document and therefore the amendment process must similarly be controlled;
- (c) The provider must amend the manual whenever it is necessary to do so to keep it in an up-to-date form; and
- (d) Operation manual should include at least:
 - (1) A statement setting, and the related functions, that the provider processes to perform;
 - (2) The proposed hours of operations of each service;
 - (3) The specific location or locations in case of distributed facility;
 - (4) Organization structure including names, qualifications, experience and position of the principles;
 - (5) Duties and responsibilities of supervising positions;
 - (6) AMS functions and operational staff required;
 - (7) Operational instructions;
 - (8) Records (logbooks, etc.) to be kept
 - (9) Administrations.

Subpart B Certification Requirements

174.51 Personnel Requirements

- (a) Each applicant for the grant of a telecommunication service Certification shall engage, employ or contract:
 - (1) A senior person identified as the Chief Executive who has the authority within the applicant's organization to ensure that all activities undertaken by the organization can be financed and carried out to meet applicable operational requirements, and in
 - (2) accordance with the requirements prescribed by this part;
 - (3) A senior person or group of senior persons who are responsible for ensuring that the applicant's organization complies with the requirements of this part. Such nominated person or persons shall be ultimately responsible to the chief executive; and
 - (4) Sufficient personnel to inspect, supervise, and maintain the facilities listed in the applicant's exposition.
 - (i) University degree or second class in telegraph and telephone wireless.
 - (ii) Basic, advanced, and specialized courses in COM. Field.
 - (iii) At least 15 years of experience in COM. Field.
- (b) The applicant shall:
 - (1) Establish a procedure acceptable to the ECAA of those personnel who are nominated by the applicant authorized by the ECAA to place any of the facilities listed in the applicant's exposition into operational service;
 - (2) Establish a procedure to maintain the competence of those authorized personnel; and
 - (3) Provide those authorized personnel with written evidence of the scope of their authorization.

Note: The approved training requirements for the above mentioned personnel is detailed in 174.63 and their prequalification requirements are detailed in 174.65

174.53 Network protection

Each applicant for the grant of a telecommunication service Certification shall establish a network password system for the facilities listed in their exposition.

174.55 Documentation

- (a) Each applicant for the grant of a telecommunication service Certificate shall hold copies of relevant equipment manuals, relevant technical standards and practices (including Annex 10) and any other documentation (including technical instructions) that is necessary for the provision and operation of the facilities listed in their exposition.
- (b) The applicant shall establish a procedure acceptable to the ECAA to control all the documentation required by Paragraph (a). The procedure shall ensure that:
 - (1) All documentation is reviewed and authorized by the appropriate personnel before issuance;
 - (2) Current issues of all relevant documentation are available to staff at all locations where they need access to such documentation for the provision and operation of facilities;
 - (3) All obsolete documentation is promptly removed from all points of issue or use;
 - (4) Changes to documentation are reviewed and approved by appropriate personnel; and
 - (5) The current version of each item of documentation can be identified to preclude the use of out of date editions.

174.57 Records

- (a) Each applicant for the grant of a telecommunication service Certification shall establish procedures acceptable to the ECAA identify, collect, index, store, and maintain the records that are necessary for the safe provision and operation of the facilities listed in their exposition. Dispose of the records that are unnecessary.
- (b) The procedures shall ensure that:
 - (1) A file is kept for each facility in order to:
 - (i) Document the performance of the facility; and
 - (ii) Provide a history of its maintenance and the periodic inspections and tests.
 - (iii) The history shall be traceable to the person or persons responsible for each of the filed activities;
 - (2) There is a file of concerning the establishment of, or change in, the periodic tests for a facility;
 - (3) There is a file for each item of test equipment required for the measurement of critical performance parameters. The file shall provide a traceable history of the location, maintenance, and the calibration checks for such test equipment; and
 - (4) There is a file of each facility malfunction filed and investigated under the procedures required by 174.59(a). The file shall detail the nature of the malfunction, the findings of the investigation, the follow up corrective actions, or where applicable include a copy of the report forwarded to the ECAA;
 - (5) There is a file of each internal quality assurance review of the applicant's organization carried out under the procedures required by 174.73(a);
 - (6) There is a file for each person who is authorized by the applicant to place facilities into operational service. The file shall include details of their experience, qualifications, training, competence assessments and current authorizations;
 - (7) All files are legible and of a permanent nature; and
 - (8) All facility files are retained for a period of at least 3-years unless a longer period is required to establish a performance history for a facility.

174.59 Internal Quality Assurance

- (a) Each applicant for the grant of a telecommunication service certificate shall establish internal quality assurance procedures acceptable to the ECAA ensure compliance with, and the adequacy of, the procedures and programs required by this part,
- (b) The senior person who has the responsibility for internal quality assurance shall have direct contact with the chief executive on matters affecting the performance of facilities.

174.61 Organization exposition

- (a) An applicant for the grant of a telecommunication service certificate shall provide an exposition which shall contains:
 - (1) A statement confirming that the exposition and any included manuals:
 - (i) Define the organization and demonstrate its means and methods for ensuring ongoing compliance with this part; and
 - (ii) Will be complied with at all times;
 - (2) The titles and names of the senior person or persons required by 174.51(a)(1) and (2);
 - (3) The duties and responsibilities of the senior person or persons specified in paragraph (a)(2) including matters for which they have responsibility to deal directly with the ECAA on behalf of the organization;
 - (4) An organization chart showing lines of responsibility of the senior persons specified in paragraph (a)(2) and extending to each location listed under paragraph (a)(7);
 - (5) A summary of the applicant's staffing structure at each location listed under paragraph (a)(7);
 - (6) A list of the types of facilities to be covered by the Certification;

- (7) A summary of the scope of activities at each location where personnel are based for the purpose of providing or maintaining
- (8) A list providing the operational details of each system associated with each location listed under Paragraph (a)(7);
- (9) Details of the applicant's network protection required by 174.55; and
- (10) Details of the applicant's procedures required by:
 - (i) 174.51(b)(1) and (2) regarding the competence of personnel;
 - (ii) 174.53 (b) regarding operation of temporary facilities for site tests; and
 - (iii) 174.55 regarding the control of documentation.
 - (iv) Procedures to control amend and distribute the exposition.
- (b) The applicant's exposition must be acceptable to the ECAA.

174.63 Training

- (a) Each applicant for the grant of TELECOM service certificate shall establish procedures acceptable to ECAA and follow the approved training programs for TELECOM officers as follows:

General requirements

- (1) Training Must Be In Full Time.
- (2) Training Is Going To Be Cancelled If Interrupted By More Than 10 % Of Total Time
- (3) Training Program Shall Be Approved From The ECAA
- (4) Personal Giving Instructions Shall Hold Appropriate Current Instructor Authorization And Supervised By The ECAA
- (5) At The End Of Training , An Examination Shall Be Held
- (6) A Examination Usually Consists Of
 - (i) Written
 - (ii) Practical
 - (iii) Oral
- (7) Minimum marks required to pass the examination is 70% of total marks of each
- (8) In case of failure in practical examination, training must continue for another period not less than 60 hours.
- (9) In case of failure in written or oral examination, re-examination will be held after one month.
- (10) In case of failure in practical, written or oral examination for second time, another training course will be held for the trainee.
- (b) Instructor responsibilities:
 - (1) Manage and co-ordinate training program schedule.
 - (2) Follow up trainee's progress to take appropriate action in the right time
 - (3) Prepare training program materials and tests
 - (4) Supervise training records
 - (5) Evaluate training progress in accordance with the evaluation form.
 - (6) Provide performance feedback.
- (c) Training Programs
 - (1) Basic indoctrination training
 - (i) Is required for the newly hired telecommunication officer.
 - (ii) Its duration shall be at least 40 hours.
 - (iii) Shall include the following subjects :
 - (A) Overview of company structure.
 - (B) Familiarization with company exposition , policy and procedures manuals , if separate from operation manual.
 - (C) Company operation manual .
 - (D) Appropriate provision of Egyptian civil aviation law and regulations and related documents.
 - (E) Any other pertinent information.
 - (2) Initial training

- (i) Initial training is required for the telecommunication officer first exposure to specific company to qualify telecommunication officer who has never worked in operational positions.
- (ii) Training shall be conducted in :
 - (A) Class room for not less than 30 hours.
 - (B) Simulation for not less than 30 hours.
 - (C) On- the job- training three months.
- (3) Initial training shall include the following subjects :
 - (i) Specific training in one of an telecommunication positions
 - (ii) Procedures and phraseology
 - (iii) Meteorology
 - (iv) Navigation aids
 - (v) Emergencies and abnormal situation
 - (vi) Aeronautical charts
 - (vii) Equipment functions
 - (viii) Any other pertinent information
- (4) Re-current training
 - (i) Recurrent training must ensure that each telecommunication officer remain adequately trained and currently proficient in assigned duties and responsibilities in relation to each working position
 - (ii) A telecommunication officer shall complete re-current training every 24 calendar months
 - (iii) Re-current training shall completed for not less than 30 hours
 - (iv) Recurrent training shall include.
 - (i) Updated topics.
 - (ii) Emergencies and abnormal situations.
 - (iii) Equipment proper use.
 - (iv) Review and discussion of previous incidents and accidents.
 - (v) Human factor any other pertinent information.
- (5) Re-medial training
 - Remedial training shall be conducted inn at least 15 hours in simulator
 - Remedial training shall include the following subjects
 - Procedures.
 - Phraseology.
 - Reviews and analysis of the incidents or accident .
 - (vi) Emergencies and abnormal situations.
 - (vii) Human factors.
 - (viii) Any other pertinent information.
- (6) Practical training
- (d) Experience, time interval between positions for not less than 3 calendar months
- (e) Theoretical study for not less than 30 hours
 - (1) Radio telephony communication. Teletypewriter peroration system.
 - (2) Associated operational duties and responsibilities.
 - (3) Standard phraseology.
 - (4) Coordination.
 - (5) Operation priorities.
 - (6) Emergencies and abnormal situations.
 - (7) Metrology.
 - (8) Responsibilities area.
 - (9) Aeronautical charts (airways).
 - (10) Handling VIP movements.
 - (11) Any other pertinent information.
- (f) On the job training up to competency check.
- (g) Passing simulation evaluation and on the job training , written and oral examination

174.64 Training Record

Each applicant for the grant of aeronautical telecommunication services certificate shall establish procedures acceptable to the ECAA for keeping training Record of All technical staff and maintained up to date.

174.65 Qualification**(a) Requirement of qualification**

No person shall perform a functions related to the operation of the international telecommunication facilities under 174.5 (a) (1) (2) (3) unless aeronautical telecommunication officer has successfully completed telecommunication courses and aeronautical telecommunication qualifications (ratings) mentioned in 174.75 In the performance of that function and has been certified under this ECAR parts.

(b) Re-qualification Requirements

Each TELECOM officer who became unqualified due to not having satisfactorily completed recurrent training, competency or familiarization within the appropriate eligibility period or to re-establish an invalid rating.

174.67 Safety Management System

A certificate holder who is certified under this part , shall show a complete compliance with ECAR Part 19 , by establishing a safety management system that is acceptable to the ECAA, maintaining it, and completing its implementation as per the chronology mentioned in this regulation.

174.69 Security for telecom

- (a) Each applicant for the grant of a TELECOM service certificate shall prepare a TELECOM security procedure ref. ECAR 107.
- (b) The security procedures shall specify the physical security requirements procedures to be followed for the purpose of minimizing the risk of destruction of damage to, or interference with the operation of any TELECOM service operated by the applicant where such destruction, damage or interference is likely to endanger the safety of aircraft.
- (c) The security procedures shall specify such physical security requirements practices, and procedures as may be necessary :
 - (1) To ensure that entrances to permanent TELECOM facilities operated by the applicant are subject to positive access control at all times , so as to prevent unauthorized entry and
 - (2) To protect personnel on duty , and
 - (3) To be followed in the event of a bomb threat or other threat of violence against any TELECOM services unit.
 - (4) To monitor unattended TELECOM building to ensure that any intrusion or interference is detected.
 - (5) To ensure the protection of the data relating to flight safety and flight regulation by password.
 - (6) The responsibility of security requirement related to TELECOM services in items 1,2,3 at the Egyptian air ports lies on the Egyptian company for the air ports (security general directorate) .

174.71 CO – ordination

Each applicant for the grant of a TELECOM service certificate shall establish system and procedures acceptable to the ECAA to ensure where applicable co – ordination between each ATS unit listed in the applicant exposition and the following agencies:

- (a) The international Tele communication centers.
- (b) Domestic circuits.
- (c) Local circuits.
- (d) Meteorological department.
- (e) ATS unit

- (f) AIS unit.
- (g) Military sector.
- (h) Aircraft operating agencies.
- (i) Flight safety department incases of movement of VIP.
- (j) Petroleum Aviation service. (PAS)
- (k) Domestic aerodromes to achieve communications and instructions.

174.73 Telecommunication services:

- (c) The TELECOM service is operating continuously (24 hours daily)
- (d) There are five teams; each team consists of 6 TELECOM officers at least are operating at (CANC) 6 hours-6 hours and 12 hours per day.
- (e) There some aerodromes working from sun rise to sun set such as (HEOC-HEKG – HEDK – HESC – HETR – HEPS – HEMM -).
 - (1) There are some aerodromes working 15 days and off 15 days divided into two shifts each working 12 hours continuously such as (HEBA-HEBL-HEGN-HESH-HETB-HEAR).

174.75 Categories of the telecommunication officers

The telecommunication officer staff divided into four categories supervisors:

- (a) Telecommunication officer assistance
 - (1) Certificate of professions in telegraph and radio telephony or university degree.
 - (2) Experience of al least 3 years.
 - (3) Basic course.
- (b) Telecommunication officer
 - (1) Certificate of professions in telegraph and radio telephony or university degree.
 - (2) Basic course.
 - (3) Telecommunication officer assistant rating .
 - (4) Telecommunication assistant and telecommunication officer rating..
- (c) Telecommunication specialist
 - (1) Certificate of professions in telegraph and radio telephony or university degree.
 - (2) Experience in the telecommunication field 10 years at least.
 - (3) Basic and advanced course.
 - (4) Assistance and telecommunication officer rating .
- (d) Supervisor telecommunication group
 - (1) Certificate of professions in telegraph and radio telephony or university degree
 - (2) Experience in telecommunication field 15 years at least
 - (3) basic, advanced and specialized communication courses
 - (4) All communications ratings (telecommunication officer assistant, telecommunication officer, telecommunication specialist and supervisor of telecommunication group).

Subpart C

Operating Requirements

174.101 Continued compliance

Each holder of a telecommunication service certificate shall:

- (a) Hold at least one complete and current copy of their exposition at each major location specified in their exposition;
- (b) Comply with all procedures detailed in their exposition;
- (c) Make each applicable part of their exposition available to personnel who require hose parts to carry out their duties;
- (d) Continue to meet the standards and comply with the requirements of this Part; and
- (e) Notify of any changes of address for service, a telephone number or facsimile number.

174.103 Identification codes and call signs

Each holder of a telecommunication service certificate requiring an identification code for a radio navigation facility or a call sign for a communications facility shall apply to the ECAA.

174.105 Communication procedures

Each holder of a telecommunication service certificate shall ensure that their procedures for operating the facilities listed in their exposition are in accordance with the applicable communication procedures prescribed in Annex 10, Volume II.

174.107 Operating and maintenance instructions

Each holder of a telecommunication service certificate shall provide, for the use and guidance of their personnel, operating instructions for each facility listed in their exposition. The instructions shall be controlled by the documentation control procedures required by 174.55 (b) and shall set out the requirements for operating and maintaining each facility approved in accordance with ECCA Part 171 The instructions shall include a list of:

- (a) The critical performance parameters;
- (b) The associated minimum performance levels for those parameters;
- (c) The test equipment required for the measurement of those parameters;
- (d) The mandatory check procedures for placing the facility into operational service; and
- (e) The mandatory inspection and test procedures for the operation and maintenance of the facility.

174.109 Deviations

- (a) Subject to compliance with 174.105 (a), the holder of a telecommunication service certificate may deviate from any requirement of this Part to meet an emergency situation if there is a need to take immediate action for the protection of life or property involving carriage by air.
- (b) A certificate holder who deviates from a requirement of this Part under paragraph (a) shall provide a written report The ECAA as soon as practicable, but in any event not later than 14-days after the emergency. The report shall cover the nature, extent, and duration of the deviation.
- (c) The telecommunication officers have the right of four ratings but they hold two ratings only are covering all the telecommunication services.
- (d) Some telecommunication officers were employed with certificates other than university degree or the proficiency in telegraphs and radio telephony.

174.111 Limitations on certification holder

- (a) The holder of a telecommunication service certificate shall not operate a facility except for site test purposes controlled by the procedures required by 174.59. If there is any cause to suspect the integrity of the information being provided by the facility. A cause to suspect the integrity of the information being provided by a facility includes the infringement of any critical site area of the facility until performance checks on the facility verify that the infringement does not and will not affect the performance of the facility.

- (b) Except where a deviation under 174.109 is required or a site test is carried out under the procedures required by 174.53(b), a certificate holder shall not operate a facility unless:
- (1) The facility is listed in the holder's exposition;
 - (2) The performance of the facility meets the applicable published information;
 - (3) The performance of the facility meets the applicable facility requirements in 174.51(a);
 - (4) Any integrity monitoring system for the facility is fully functional;
 - (5) All the periodic tests for the facility are completed in accordance with the programs established under 174.59(c)(2) and (3);
 - (6) The facility is included in the holder's networks security procedures if the destruction, damage, or interference of the facility is likely to endanger the safety of an aircraft in flight; and
 - (7) The provisions of the holder's network security procedures for the facility are being complied with.

174.113 Changes to certification holder's organization

- (a) Each holder of a telecommunication service certificate shall ensure that their exposition is amended to maintain a current description of the holder's organization and facilities.
- (b) The certification holder shall ensure that any amendments made to the holder's exposition meets the applicable requirements of this part and complies with the amendment procedures contained in the holder's exposition.
- (c) The certificate holder shall provide a copy of each amendment to the holder's exposition as soon as practicable after its incorporation into the exposition.
- (d) Where a certificate holder proposes to make a change to any of the following, prior notification to the ECAA for acceptance is required:
 - (1) The chief executive;
 - (2) The listed senior persons;
 - (3) The TELECOM security procedures; and
 - (4) The types of facility the holder operates.
- (e) The ECAA may prescribe conditions under which a certificate holder may operate during or following any of the changes specified in paragraph (d).
- (f) A certificate holder shall comply with any conditions prescribed under paragraph (e).
- (g) Where any of the changes referred to in this rule requires an amendment to the certificate, the certificate holder shall forward the certificate as soon as practicable.
- (h) The certificate holder shall make such amendments to the holder's exposition as considered necessary in the interests of aviation safety.

174.115 Facilities and equipment

- (a) Firstly: departments
 - (1) Aeronautical Messages Switching Centre (AMSC) Directorate.
 - (2) Aeronautical mobile service (AMS) directorate.
 - Direct speech circuit (SSB) communicate with domestic airports on (HF/SSB)
 - (3) Commercial directorate.
 - (4) Aerodromes Telecommunication Directorate
- (b) Secondly: sections
 - (1) Technique investigation
 - (2) Training section
 - (3) Quality Directorate
 - (4) Technique affairs
- (c) Thirdly: accommodation

All accommodation in the department units should be according to document 9426 part 3 section (ii) facility required chapter (1) items 1.2, 1.4 and 1.5

174.117 Aeronautical Messages Switching Centre (AMSC) Directorate

- (a) Cairo AMSC is provided with the following minimum facilities and equipment:

- (1) Adequate table/counter space for the working position
- (2) Photocopier
- (3) Local and direct telephones and Fax
- (4) Electronic mail
- (5) Reliable two clocks for international (UTC) and local time
- (6) Reference charts and documents
- (7) Log books and quality forms.
- (b) The operation positions' equipment are:
 - (1) Chief Position:
PC including 17" or more LCD screen and printer
 - (2) Supervisor Position
PC including 17" or more LCD screen and printer
 - (3) Statistics Position
PC including 17" or more LCD screen and printer
 - (4) Events Position
PC including 17" or more LCD screen and printer
 - (5) Alarms Position
PC including 17" or more LCD screen and printer
 - (6) Correction Position
PC including 17" or more LCD screen and printer
 - (7) Interception Position
PC including 17" or more LCD screen and printer
 - (8) Commercial position
PC including 17" or more LCD screen and printer
 - (9) Channels Serviceability Position
PC including 17" or more LCD screen and printer
 - (10) Manual Access and Telex Position
PC including 17" or more LCD screen and printer
 - (11) AMC Position
PC including 17" or more LCD screen, printer, and an internet access with Microsoft operating system and office.
 - (12) Documents PC position
PC including 17" or more LCD screen, printer, and an Internet access with Microsoft operating system and office.

174.119 Aeronautical mobile service (AMS) directorate (HF/RT).

- (a) Cairo AMS is provided with the following minimum facilities and equipment:
 - (1) Adequate table/counter space for the working position
 - (2) Photocopier
 - (3) Local and direct telephones and Fax
 - (4) Electronic mail
 - (5) Reliable two clocks for international (UTC) and local time
 - (6) Reference charts and documents
 - (7) Log books and quality forms
 - (8) ICAO documents
 - (9) AIP
- (b) The operation positions' equipment are:
 - AFI position 1 and AFI position 2 Structures and building on are :-
 - (1) loud speaker equipped with volume button.
 - (2) microphone .
 - (3) Screen connected to computer which all deals as changing frequencies and all other operations appears on it also the reserved frequencies an addition to frequencies of SSB of south position and frequencies for north position.
 - (4) Transmission hand button or foot press button.
 - (5) the type of system units are transceiver .
 - (6) Digital electric clock adjusted on the universal co-ordinate time.
 - (7) SELCAL system.

- (8) Single lamp used in case on common light be off.
- (9) Hot line panel (VCCS).
- (10) The system is operating by four units at a time (two in work and two standbys). The first two in work contains one for ground to air powered by 1000 watt and the other used to operated with ground to ground powered by 125 watt used also for the calling by SELCAL after be converted to amplitude modulation (AM).
- (11) The selected frequencies mentioned before to for causing global coverage.
- (12) the frequencies are chosen from designated frequencies by ICAO for AFI, MID and EUR.
- (13) The system is able to use two frequencies at the same time.
- (14) The mouse of the computer selects the desired frequency.
- (c) The selecting call code system (SELCAL) Composition:-
Tone selector Consists of two rows of push buttones in the bottom.
 - (1) Send button
Is used to transmit the two pulse four tone signal. The send switch is inoperative until all four code letters have been entered. The letters enter from right to left.
 - (2) Cancel button
Is pressed whenever it is desirable to clear the encoder of a code or portion of code also to erroneous code transmission.
 - (3) Indicator
The green indicator is lit whenever AC power is applied. The red indicator is lit when the send button is pressed. Remain during the transmission of code.
- (d) Hot line panel (VCCS)
It used for direct contact with ATC. Units, Aerodromes. Military sector, FIC. FDPS. In addition to, tower.
- (e) SSB Positions
SSB South Position and North Position
Ref. AIP 16 MARS 2006 /AIRAC03106
Composition:-
 - (1) loud speaker
 - (2) Mike
 - (3) foot press used for transmission
 - (4) multi frequencies transmission unit , equipped with 6 frequencies.
 - (5) digital electric watch adjusting on U.T.C time .
 - (6) multi frequencies receiving unit.
 - (7) hot line panel.
- (e) VOLMET. Broadcast position
D-VOLMET workstation operation training course manual.
Compositions:-
 - (1) The Volmet consists of pc connected to master and standby server in the equipment room connected to the AFTN circuit with CAIRO AMSC.
- (f) Telephone System
 - (1) At the aeronautical mobile service and direct speech high frequency (SSB), there are (4) telephone lines.
 - (2) Two set on aeronautical mobile service station and the last one equipped by zero number to get chance to contact with external positions. And two sets at SSB are used as alternate mean instead of SSB in case of out of order.

174.121 Commercial directorate.

- (a) Commercial directorate is provided with the following minimum facilities and equipment:
 - (1) Adequate table/counter space for the working position
 - (2) Photocopier
 - (3) Local and direct telephones and Fax
 - (4) Electronic mail
 - (5) Reliable two clocks for international (UTC) and local time

- (6) ICAO documents
- (7) AIP
- (8) AFTN circuit connected to CAIRO com center
- (9) SCANNER
- (10) Log books and quality forms.

174.123 Aerodromes Telecommunication Directorate

(a) Aerodromes Telecommunication Directorate is provided with the following:

Firstly: facilities and equipment:

- (1) Adequate table/counter space for the working position
- (2) Photocopier
- (3) Local and direct telephones and Fax
- (4) Electronic mail
- (5) Reliable two clocks for international (UTC) and local time
- (6) Reference charts and documents
- (7) Log books and quality forms.
- (8) ICAO documents
- (9) AIP

Secondly: sections:

- (1) Technique investigation
- (2) Training section
- (3) Quality directorate
- (4) Technique affairs

(b) Are provided with the following minimum facilities and equipment:

- (1) Photocopier
- (2) Local and direct telephones and Fax
- (3) Electronic mail
- (4) Reliable two clocks for international (UTC) and local time
- (5) Reference charts and documents
- (6) Log books and quality forms.
- (7) ICAO documents
- (8) AIP

174.125 Prevention of fatigue

All Aeronautical Telecommunication officers shall follow the procedures acceptable to the ECAA to ensure that radio operators are not subject to fatigue by ensuring that:

- (a) Aeronautical Telecommunication officers do not serve for more than 6 consecutive hours or for more than 8 hours during a period of 24 consecutive hours, unless a rest period of at least 6 hours at or before the end of the 8 hours of duty have been attained; and
- (b) Except in an emergency, aeronautical telecommunication officers refrain from performing any duties for at least 24 consecutive hours at least once
- (c) Aeronautical Telecommunication officers shall be provided with at least 30-minutes rest after each 3-hours of continuous work on an operating position.
- (d) If the duty at some positions is more fatiguing than at others, the supervisor on duty should rotate the staff during their shifts between heavily loaded and more lightly loaded positions. 9426 part 4 (2.1.5)

174.127 Shift Roster

- The TELECOM service is operating continuously (24 hours daily)
- There are five groups; each group consists of at least 7 TELECOM officers operating 6 hours (morning shift), 6 hours (afternoon shift), and 12 hours (night shift).
- Three groups on duty and the other two groups, one of them out from the night shift and the other one in weekly rest, sequentially for each group.
- The three groups work through local time as follows:

Morning	Afternoon	Night	Out of night	Weekly rest
B	C	E	D	A
A	B	C	E	D
D	A	B	C	E
E	D	A	B	C
C	E	D	A	B

174.129 Sign On/Off Procedures

- The signature in the radio log should be made in a full signature. 9426 1.8.4(a)
- Sing on in the radio log as applicable, as having accepted responsibility for the position. 9426 1.7.5 (e)

174.131 Hand over and vacating operating position Procedures

- (a) Prior to taking over an operating of position, a Aeronautical Telecommunication officers should ensure that he has full understanding and awareness about the situations of operation on the position. 9426 part 4 - 1.7.5 (a)
- (b) Familiarize yourself with the serviceability of all equipment under your duty. 9426 1.7.5 (b)
- (c) Ensure you are fully conversant with the latest orders, instructions, notices and information, with reference to the operations. 9426 1.7.5 (d)
- (d) The supervisor on watch should review the entries of radio log. 9426 1.8.5
- (e) Aeronautical Telecommunication officers handing over watch to another person should ensure that his successor is provided with full information on the current traffic situation and any matters which have affected on the development of the situation during his duty. 9426 1.7.6
- (f) Before vacating an operating position for any reason whiles a unit is still in operation, the person vacating that position should ensure that a clear understanding to assume the responsibility for that particular operating position. 9426 1.7.3

SUBPART (D)

174.201 Division of service

- (a) The international aeronautical telecommunication service is divided into four parts:
 - (1) Aeronautical fixed service;
 - (2) Aeronautical mobile service;
 - Direct speech circuit (SSB) communicate with domestic airports on (HF/SSB)
 - (3) Aeronautical broadcasting service.

174.203 Hours of service

The designated aeronautical telecommunication agencies receive the information of the different stations and offices hours of service by declared by their corresponding Authorities

174.205 Changing normal hours service

The telecommunication service provider shall give notification of any change in the normal hours of service to the ECAA, before such as change is effected. Such changes, whenever necessary, will be promulgated in NOTAM.

174.207 Requesting change in hours service by and aircraft station

If a station of the international aeronautical telecommunication service or an aircraft operating agency is requesting the change, they shall be informed of the result of its request as soon as possible.

174.209 Supervision

The ECAA has the right to access, inspect and supervise all the activities conducted by the Egyptian international aeronautical telecommunication stations to ensure that the service is conducted in accordance with the Provisions of this Part and the Procedures given in Annex.10 volume 2

174.211 Infringements

The Occasional infringements of the procedures contained herein, when not serious, should be dealt with immediately by direct communication between the parties by personal contact.

174.213 Serious infringements

When a station commits serious or repeated infringements, representations relating to them shall be made to the ECAA.

174.215 Unusual transmission phenomena

The telecommunication service providers should exchange information regarding the performance of systems of communication, radio navigation, operation and maintenance, and unusual transmission phenomena.

174.217 Superfluous transmissions

No wilful transmission of unnecessary or anonymous signals, messages or data shall be made by any station within Egypt.

174.219 Interference

Before conducting authorized tests and experiments in any station, all possible precautions shall be taken to avoid harmful interference, such as the choice of frequency and of time, and the reduction or, if possible, the suppression of radiation. Any harmful interference resulting from tests and experiments shall be eliminated as soon as possible.

174.221 General

The procedures outlined in this subpart are general in character and shall be applied where appropriate to the other subparts of this Part.

174.223 Extensions of service

Stations of the international aeronautical telecommunication service shall extend their normal hours of service as required to provide for traffic necessary for flight operation.

174.225 Before closing down

Before closing down, a station shall notify its intention to all other stations with which it is in direct communication, confirm that an extension of service is not required and advise the time of re-opening if other than its normal hours of service.

174.227 Working regularity in a network

When it is working regularly in a network on a common circuit, a station shall notify its intention of closing down either to the control station, if any, or to all stations in the network. It shall continue watch for two minutes and may then close down if it has received no call during this period.

174.229 Stations other than continuous hours of operation

Stations with other than continuous hours of operation, engaged in, or expected to become engaged in distress, urgency, unlawful interference, or interception traffic, shall extend their normal hours of service to provide the required support to those communications.

174.231 Acceptance transmission

Only those messages coming within the categories acceptable shall be accepted for transmission by the aeronautical telecommunication service station.

174.233 The responsibility for determining the acceptability

The responsibility for determining the acceptability of a message shall rest with the station where the message is filed for transmission.

174.235 Messages is deemed acceptable

Once a message is deemed acceptable, it shall be transmitted, relayed and (or) delivered in accordance with the priority classification and without discrimination or undue delay.

174.237 The authority in control

Any station, through which a message is relayed, should make representations at a later date to the ECAA regarding any message which is considered unacceptable.

The authority in control of any station through which a message is relayed, should make representations at a later date to the authority in control of the accepting station regarding any message which is considered unacceptable.

174.239 Acceptable messages

Only messages for stations forming part of the aeronautical telecommunication service shall be accepted for transmission, except where special arrangements have been made with the telecommunication authority concerned.

174.241 Acceptance as a single message

Acceptance as a single message of a message intended for two or more addresses, whether at the same station or at different stations, shall be permitted subject to the provisions prescribed in Annex 10 volume 2 chapter 4

174.243 Messages handled for aircraft operating agencies

Messages handled for aircraft operating agencies shall be accepted only when handled in to the telecommunication station in the form prescribed herein and by an authorized representative of that agency, or when received from that agency over an authorized circuit.

174.245 Messages be delivered to more aircraft operating agencies

For each station of the aeronautical telecommunication service from which messages are delivered to one or more aircraft operating agencies, a single office for each aircraft operating agency shall be designated by agreement between the aeronautical telecommunication agency and the aircraft operating agency concerned.

174.247 The responsibility for delivery by aeronautical stations

Stations of the international aeronautical telecommunication service shall be responsible for delivery of messages to addressee(s) located within the boundaries of the aerodrome(s) served by that station and beyond those boundaries only to such addressee(s) as may be agreed by special arrangements with the ECAA.

174.249 Formation of delivery

Messages shall be delivered in the form of a written record, or other permanent means as prescribed by the ECAA.

174.251 Delivery of written messages

In cases where telephone or loudspeaker systems are used without recording facilities for the delivery of messages, a written copy should be provided, as confirmation of delivery, as soon as possible.

174.253 Messages originated in the aeronautical mobile service by an aircraft in flight

Messages originated in the aeronautical mobile service by an aircraft in flight and which require transmission over the aeronautical fixed telecommunication network to affect delivery, shall be reprocessed by the aeronautical telecommunication station into the message format.

174.255 Messages requiring transmission over aeronautical mobile service

Messages originated in the aeronautical mobile service by an aircraft in flight and which require transmission over the aeronautical fixed service, other than on AFTN circuits, shall also be reprocessed by the aeronautical telecommunication station into the ICAO message format

174.257 Messages (including air-reports)

Messages (including air-reports) without specific address containing meteorological information received from an aircraft in flight shall be forwarded without delay to the meteorological office associated with the point of reception.

174.257.1 Messages (including air-reports) without specific address containing air traffic services information from aircraft in flight shall be forwarded without delay to the air traffic services unit associated with the communication station receiving the message

174.257.2 PANS.— When recording the text of air-reports in AIREP form, the data conventions approved by ICAO for this purpose shall be used wherever possible. Note. — Provisions relating to the composition, including data conventions, of air-reports and to the order and form in which the elements of such reports are transmitted by the aircraft stations and recorded and retransmitted by the aeronautical stations, are contained in the PANS-ATM (Doc 4444).

PANS.— When air-reports in AIREP form are to be retransmitted by telegraphy (including teletypewriting), the text transmitted shall be as recorded in compliance with 3.3.7.4.

174.259 Messages (including air-reports)

Messages (including air-reports) without specific address containing air traffic services information from aircraft in flight shall be forwarded without delay to the air traffic services unit associated with the communication station receiving the message.

174.261 Universal Co-ordinated Time (UTC)

Universal Co-ordinated Time (UTC) shall be used by all stations in the aeronautical telecommunication service. Midnight shall be designated as 2400 for the end of the day and 0000 for the beginning of the day.

174.263 Date-time group

Date-time group shall consist of six figures, the first two figures representing the date of the month and the last four figures the hours and minutes in UTC.

174.265 Record of communications

A telecommunication log, written or automatic, shall be maintained in each station of the aeronautical telecommunication service except that an aircraft station, when using radiotelephony in direct communication with an aeronautical station, need not maintain a telecommunication log.

174.267 Recording the messages

Aeronautical stations should 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.

174.269 Harmful interference

When a record is maintained in an aircraft station, either in a radiotelephone log or elsewhere, concerning distress communications, harmful interference, or interruption to communications, such a record should be associated with information concerning the time and the position, and altitude of the aircraft.

174.271 Written log

In written logs, entries shall 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.

174.273 Review at the logs

The unit chief should review the logs at least once every working day, taking note of all significant entries. All personnel should read those log entries of concern to them which were made during the period since the end of their last tour of duty before accepting responsibility for an operating position.(ICAO Doc.9426 part IV item 1.8.5)

174.275 Radio log entries

All entries shall be complete, clear, correct and intelligible. Superfluous marks or notations shall not be made in the log.

174.277 Written log correction

In written logs, any necessary correction in the log shall be made only by the person making the initial entry. The correction shall be accomplished by drawing or typing a single line through the incorrect entry, initialling same, recording the time and date of correction. The correct entry shall be made on the next line after the last entry.

174.279 Telecommunication logs, written or automatic

Telecommunication logs, written or automatic, shall be retained for a period of at least thirty days. When logs are pertinent to inquiries or investigations they shall be retained for longer periods until it is evident that they will be no longer required.

174.281 retained of written and voice record

(a)Written records (ATS messages, duty logs, etc.) should be retained for a minimum of 90 days and should only be destroyed thereafter if no specific need for further retention has come to light. When the need for such data has become apparent destruction of the material should only be done after specific authorization has been granted by the appropriate authority. 9426part 1 (8.4.2)

(b)Voice recordings of air-ground or telephone communications should be retained for a minimum of 30 days, again with the proviso that those for which a need for further

retention has been made known shall be destroyed only after special authorization to do so have been received. 9426part 1 (8.4.4)

174.283 Entries

The following information shall be entered in written logs:

- (a) The name of the agency operating the station;
- (b) The identification of the station;
- (c) The date;
- (d) The time of opening and closing the station;
- (e) The signature of each operator, with the time the operator
- (f) The frequencies being guarded and type of watch assumes and relinquishes a watch; (continuous or scheduled) being maintained on each frequency;
- (g) Except at intermediate mechanical relay stations where the provisions of this paragraph need not be complied 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;
- (h) All distress communications and action thereon;
- (i) 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; (j) a brief description of interruption to communications due to equipment failure or other troubles , giving the duration of the interruption and action taken;
- (j) 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.

174.285 Establishment of radio communication

All stations shall answer calls directed to them by other stations in the aeronautical telecommunication service and shall exchange communications on request.

174.287 Minimum power

All stations shall radiate the minimum power necessary to ensure a satisfactory service

174.289 Use of abbreviations and codes

Abbreviations and codes shall be used in the international aeronautical telecommunication service whenever they are appropriate and their use will shorten or otherwise facilitate communication.

174.291 Use of abbreviations and codes other than approved by ICAO

Where abbreviations and codes other than those approved by ICAO are contained in the text of messages, the originator shall, if so required by the aeronautical telecommunication station accepting the message for transmission, make available to that station a decode for the abbreviations and codes used

174.293 Cancellation of messages

Messages shall be cancelled by a telecommunication station only when cancellation is authorized by the message originator

Subpart E**174.301 General**

The aeronautical fixed service shall comprise the following systems and applications that are used for ground i.e. point-to-point and/or point-to-multi unit communications in the international aeronautical telecommunication service.

- (a) ATS direct speech circuits and networks;

- (b) Meteorological operational circuits, networks and broadcast systems;
- (c) The aeronautical fixed telecommunications network AFTN;
- (d) The common ICAO data interchange network (CIDIN);
- (e) The air traffic services (ATS) message handling services (AMHS); and
- (f) Inter – centre communications (ICC)

174.303 Material permitted in AFS messages

The following characters are allowed in text:

Letters: ABCDEFGHIJKLMNOPQRSTUVWXYZ

Figures: 1234567890

Other signs : - (hyphen)

? (Question mark)

: (colon)

((Open bracket)

) (close bracket)

. (Full stop, period, or decimal point)

, (comma)

‘ (Apostrophe)

= (double hyphen or equal sign)

/ (oblique)

+ (plus sign)

Characters other than those listed above shall not be used in messages unless absolutely necessary for understanding of the text. When used, they shall be spelled out in full.

174.305 Permitted signals in a message using the ITA-2 code

For the exchange of messages over the teletypewriter circuits, the following signals of the International Telegraph Alphabet No. 2 (ITA-2) shall be permitted:

- (a) Signals nos. 1 to 3 - in letter and in figure case;
- (b) Signal no. 4 - in letter case only;
- (c) Signal no. 5 - in letter and in figure case;
- (d) Signals nos. 6 to 8 - in letter case only;
- (e) Signal no. 9 - in letter and in figure case;
- (f) Signal no. 10 - in letter case only; and
- (g) Signals nos. 11 to 31 - in letter and figure case.

174.305.1 Messages using the ITA-2 code shall not contain:

- (a) Any uninterrupted sequence of signals nos. 26, 3, 26 and 3 (ZCZC in letter case or figure case) in this order, other than the one in the heading as prescribed in 174.407 ; and
- (b) Any uninterrupted sequence of four times signal no. 14 (N in letter case or figure case) other than the one in the ending as prescribed in 174.485

174.307 Permitted signals in a message using the ITA-5 code

- (a) For the exchange of messages over the teletypewriter circuits, the following characters of Inter-national Alphabet No. 5 (IA-5) shall be permitted:

- (1) - characters 0/1 to 0/3, 0/7 - in the priority alarm (see 4.4.15.2.2.5), 0/10, 0/11 - in the ending sequence (see 4.4.15.3.12.1), 0/13;
- (2) - characters 2/0, 2/7 to 2/9, 2/11 to 2/15;
- (3) - characters 3/0 to 3/10, 3/13, 3/15;
- (4) - characters 4/1 to 4/15;
- (5) - characters 5/0 to 5/10; and
- (6) - Character 7/15.

- (b) 174.307. a The exchange of messages using the full IA-5 shall be subject to agreement between the Administrations concerned

174.307.1 Messages using the ITA-2 code shall not contain:

- (a) Character 0/1 (SOH) other than the one in the heading;
- (b) Character 0/2 (STX) other than the one in the origin line;
- (c) Character 0/3 (ETX) other than the one in the ending;
- (d) Any uninterrupted sequence of characters (ZCZC);
- (e) Any uninterrupted sequence of characters (+:+:);
- (f) Any uninterrupted sequence of four times character (NNNN); or
- (g) Any uninterrupted sequence of four times character (,,,))

174.309 The text of message

Shall be drafted in plain language or in abbreviations and codes. The originator shall avoid the use of plain language when reduction in the length of the text by appropriate abbreviations and codes is practicable words and phrases which are not essential, such as expressions of politeness shall not be used.

174.311 Wishing of alignment functions

If the originator of a message wishes alignment functions (<=) to be transmitted at specific places in the text part of such message, the sequence [<°] shall be written on each of those places.

174.313 Meteorological operational channels and meteorological operational Telecommunication networks

Meteorological operational channels procedures and meteorological operational Communication network procedures shall be compatible with aeronautical fixed Telecommunication network (AFTN) or ATS message handling services (AMHS) procedures.

Note.— “Compatible” is to be interpreted as a mode of operation ensuring that the information exchanged over the meteorological operational channels also can be exchanged over the aeronautical fixed telecommunication network AFTN or AMHS without harmful effect on the operation of the aeronautical fixed telecommunication network AFTN or AMHS and vice versa

174.315 Categories of messages

The aeronautical fixed telecommunication network shall handle the following categories of message:

- (a) Distress messages;
- (b) Urgency messages;
- (c) Flight safety messages;
- (d) Meteorological messages;
- (e) Flight regularity messages;
- (f) Aeronautical information services (AIS) message;
- (g) Aeronautical administrative messages; and
- (h) Service messages;

174.317 Distress messages

Procedures acceptable to the E.C.A.A. Distress messages (priority indicator SS). These messages shall comprise those messages sent by mobile stations reporting that they are threatened by grave and imminent danger and all other messages relative to the immediate assistance required by the mobile station in distress .

174.319 Urgency messages

Urgency messages (priority indicator DD). This category shall comprise messages concerning the safety of a ship, aircraft or other vehicles, or of some person on board or within sight.

174.321 Flight safety messages

Procedures acceptable to the E.C.A.A. Flight safety messages (priority indicator FF shall comprise).
Movement and control messages;
Messages originated by an aircraft operating agency of immediate concern to aircraft in flight or preparing to depart;
Meteorological messages restricted to SIGMET information, special air-reports, AIRMET messages, and volcanic ash and tropical cyclone advisory information and amended forecasts;

174.323 Meteorological messages

Meteorological messages (priority indicator GG shall comprise:
Messages concerning forecasts, e.g. terminal aerodrome forecasts (TAFS), area and route forecasts; and,
Messages concerning observations and reports, e.g. METAR, SPECI

174.325 Flight regularity messages

Flight regularity messages (priority indicator GG shall comprise:
Aircraft load messages required for weight and balance computation;
Messages concerning changes in aircraft operating schedules;
Messages concerning aircraft servicing;
Messages concerning changes in collective requirements for passengers, crew and cargo covered by deviation from normal operating schedules.
Messages concerning non-routine landings;
Messages concerning pre-flight arrangements for air navigation services and operational servicing for non-scheduled aircraft operations, e.g. over flight clearance requests;
Messages originated by aircraft operating agencies reporting an aircraft arrival or departure;
Messages concerning parts and materials urgently required for the operation of aircraft;

174.327 Aeronautical information services

Aeronautical information services (AIS messages (priority indicator GG) shall comprise:
Messages concerning NOTAM'S; and
Messages concerning SNOTAMS.

174.329 Aeronautical administrative messages

Aeronautical administrative messages (priority indicator KK) shall comprise:
Messages regarding the operation or maintenance of facilities provided for the safety or regularity of aircraft operations;
Messages concerning the functioning of aeronautical telecommunication service; and
Messages exchanged between civil aviation authorities relating to aeronautical services.

174.331 The selection of priority

Messages requesting information shall take the same priority indicator as the category of message being requested except where a higher priority is warranted for flight safety.

174.333 Service messages

Service messages (priority indicator as appropriate). This category shall comprise messages originated by aeronautical fixed station to obtain information or verification concerning other messages which appear to have been transmitted incorrectly by the aeronautical fixed service, confirming channel sequence numbers, etc.

174.335 Service messages preparation

Service messages shall be prepared in the format of service messages addressed to an aeronautical fixed station identified only by a location indicator, this Indicator shall be immediately followed by the ICAO three letters designator YFY, followed by an appropriate 8th letter.

174.337 Priority of service messages

Service messages shall be assigned the appropriate priority indicator.

174.339 Service message previously transmitted

When service messages refer to messages previously transmitted, the priority Indicator assigned should be that used for the message (s) to which they refer.

174.341 Service messages

Service messages correcting errors in transmission shall be addressed to all addresses that will have received the incorrect transmission.

174.343 Reply to a service message

Reply to a service messages shall be addressed to the station which originated the initial service message.

174.345 Text of a service message

The text of all service messages should be as concise as possible

174.347 SS service message

A service message, other than one acknowledging the receipt of SS messages, shall further identified by the use of abbreviation SVC as the first item in the text.

174.349 Service message

When a service message refers to a message previously handled, reference to the previous message shall be made by use of appropriate transmission identification.

174.351 Order of priority

The order of priority for the transmission of messages in the aeronautical fixed telecommunication network may be as follows:

Transmission Priority.	Priority indicator
1	SS.
2	DD FF.
3	GG KK.

174.353 Messages having the same priority indicator

Messages having the same priority indicator shall be transmit in the order which they are received for transmission.

174.355 Routing of messages.

All communications shall be routed by the most expeditious route available to affect delivery to the addressee.

174.357 Predetermined diversion routing.

Predetermined diversion routing arrangements shall be made, when necessary, to expedite the movement of communication traffics. Each communication center shall have the appropriate diversion routing lists, agreed by the Administrations operating the communication centers affected and shall use them when necessary.

174.359 Diversion routing.

Diversion routing should be initiated:

- In a fully automatic communication center; Immediately after detection of the circuit outage when the traffic is to be diverted via a fully automatic communication center;
- Within a 10-minutes period after detection of the circuit outage, when the traffic is to be diverted via a non-fully automatic communication center. In a non-fully automatic communication center within 10 minutes period after diction of the circuit

outage. Service message notification of the diversion requirement should be provided where no bilateral or multilateral prearranged agreements exist.

174.361 Disposing traffic over the aeronautical fixed service

As soon as it is apparent that it will be impossible to dispose of traffic over the aeronautical fixed service within a reasonable period, and when the traffic is held at the station where it was filed, the originator shall be consulted regarding further action to be taken unless otherwise agreed between the station concerned and the originator, or arrangement exist whereby delayed traffic automatically diverted to commercial Telecommunication services without reference to the originator.

174.363 Supervision of message traffic.

Continuity of message traffic: The receiving station shall check the transmission identification of incoming transmissions to ensure the correct sequence of channel sequence numbers received over that channel

174.365 Missing channel-sequence numbers

When the receiving station detects that one or more channel-sequence numbers are missing, it shall send a complete service message, to the previous station rejecting receipt of any message that may have been transmitted with such missing number (s). The text of this service message shall comprise the signal QTA, the procedure signal MIS followed by one or more missing transmission identification and the end of text signal.

Note.— The following examples illustrate application of the above-mentioned procedure. In example 2) the hyphen (-) separator is understood to mean “through” in plain language. 1) when one channel-sequence number is missing: SVC→QTA→MIS→ABC↑123↓<≡

174.367 Responsibility for transmission of the message

The station notified of the Missing message (s) condition by the service message shall reassume its responsibility for transmission of the message or messages that it had previously transmitted with the transmission identification concerned, and shall re-transmit that message or those messages with a new correct in sequence transmission identification concerned. The receiving station shall synchronize such that the next expected channel – sequence number is last received channel – sequence number plus one.

174.369 If the channel sequence less than that expected

When the receiving detects that a message has a channel sequence number less than that expected it should advise the previous station using a service message with a text comprising the:

Abbreviation SVC;

Procedure signal LR followed by the transmission identification of the received message;

Procedure signal EXP followed by the transmission identification expected; and

End of test signal.

the end-of-text signal. Note.— The following example illustrates application of the above-mentioned procedure: SVC→LR→ABC↑123→↓EXP→ABC↑135↓<≡

174.371 Correcting the channel sequence number

The station receiving out of sequence message should synchronize such that the expected channel sequence number is the last received channel sequence number plus one. The previous station checks its outgoing channel sequence numbers and, if necessary, corrects the sequence.

174.373 Misrouted messages

When the receiving station detects that a message has been misrouted to it, it shall either:

- (a) Send a service message to the previous station rejecting receipt of the misrouted message; or

- (b) It assumes responsibility for transmission of the message to all addressee indicators.

174.375 Receiving a misrouted message

The text of the service message shall comprise the abbreviation SVC, the signal QTA, the procedure signal MSR followed by the transmission identification

174.377 Misrouted message

When the sending station is notified of the misrouted message condition by service message, it shall reassume its responsibility for the message and shall re-transmit as necessary on the correct outgoing channel or channels.

174.379 Interrupted circuit

When a circuit becomes interrupted and alternative facilities exist, the last channel sequence numbers sent and received shall be exchanged between the stations concerned. Such exchanges shall take the form of complete service messages with the text comprising the abbreviation SVC, the procedure signals LS and LS followed by the transmission identification of the relevant messages and the end – of – text signal

174.381 Failure of communications

Should communication on any fixed service fail, the station concerned attempt to re-establish contact as soon as possible.

174.383 Alternative circuit

If contact cannot re-establish within a reasonable period on the normal fixed service circuit, an appropriate alternative circuits should be used. If possible, attempts should be made to establish communication on authorized fixed service circuit available.

- (a) International circuit

According to ICOA routing directory

- (b) Domestic circuit

ZIZX circuit diverted on YFYX and RADAR circuits diverted on YFYX circuit. When YFYX CIRCUIT became U/S all circuit diverted on SSB frequencies.

- (c) LOCAL circuit

If the circuit have two channel shall divert the out of order channel to other normal work channel i.e. (YMYX channels A and B). If the circuit have not alternate shall kept it until became normal and advise all the circuit traffic on hand U.F.N.

174.385 Failing attempts

If attempts fail, use of any available air-ground frequency is permitted only as an exceptional and temporally measure when no interference to aircraft in flight is ensured.

174.387 Failing of radio circuits due to propagation conditions

Where a radio circuit fails due to signal fade- out or adverse propagation conditions, a receiving watch shall be maintained on the regular fixed service frequency normally in use. In order to re-establish contact on this frequency as soon as possible the following shall be transmitted:

- (a) The procedure signal DE;
- (b) The identification of the transmitting station transmitted three times;
- (c) The alignment function (<=);
- (d) The letters RY repeated without separation for three lines of page copy;
- (e) The alignment function (<=); and
- (f) End of message signal (NNNN) the forgoing sequence shall be repeated as required.

174.389 Action be taken in case of radio communication failure

A station experiencing a circuit or equipment failure shall promptly notify other stations with which it is in direct communication if the failure will affect routing by those stations restoration to normal shall also be notified to the same stations.

174.391 Diverted traffic

Where diverted traffic will not be accepted automatically or where a predetermined diversion routing has not been agreed, a temporary diversion routing shall be established by the exchange of service messages. The text of such service messages shall comprise:

- (a) The abbreviation SVC;
- (b) The procedure signal QSP; and
- (c) If required, the procedure signals RQ, NO or CNL to request, refuse or cancel a diversion.

174.393 AFTN traffic records

Copies of all messages, in their entirety, transmitted by an AFTN origin station shall be retained for a period of at least 30 days.

174.395 AFTN destination stations

AFTN destination stations shall retain, for a period of at least 30 days, a record containing the information necessary to identify all messages received and the action taken thereon.

174.397 Period of retention of traffic at the AFTN radio station

AFTN communication centers should retain, for a period of at least 30 days, a record containing the information necessary to identify all messages relayed or re-transmitted and the action taken thereon.

174.399 Period of retention of traffic at the AFTN radio station

AFTN communication centers shall retain, for a period of at least one hour, a copy of all messages, in their entirety. Re-transmitted or relayed by that the communication center

174.401 Acknowledgement.

In cases where acknowledgement is made between AFTN communication centers, a relay center shall be considered as having no further responsibility for retransmission or repetition of a message for which it has received positive acknowledgement and it may be deleted from its records.

174.403 Test messages

Test messages transmitted on AFTN channels for the purpose of testing and repairing lines should consist of the following:

- (a) The start-of-message signal;
- (b) The procedure signal QJH1;
- (c) The originator indicator;
- (d) Three page-copy lines of the sequence of characters RY. In ITA-2 or U (5/5)* (2/10) in IA-5; and
- (e) The end-of-message signal.

174.405 Messages using (ITA-2)

All messages, other than those prescribed in 174.403 and 173.495, shall comprise the components specified in 174.497 to 174.485 inclusive.

174.407 Heading

The heading shall comprise:

- (a) Start-of-message signal, the characters ZCZC.
- (b) Transmission identification comprising:
 - (1) Circuit identification; and
 - (2) Channel sequence number.
- (c) Additional service information if necessary comprising:
 - (1) One SPACE;
 - (2) Not more than ten characters; and
 - (3) Spacing signal.

174.409 Contents of the circuit identification

The circuit identification shall consists of three letters selected and assigned by the transmitting station, the first letter identifying the transmitting, the second letter the receiving end of the circuit and the third letter to identify the channel, where there is only one channel between the transmitting and the receiving station. Channels letter A shall be assigned, where more than one channel between Stations is provide, the channels shall be identified as A,V,C etc. in respective Order.

174.411 Three digits channel- sequence numbers

Three digits channel- sequence numbers from 001 to 000 (representing 1000) shall be assigned sequentially by the telecommunication stations to all messages Transmitted directly from one station to another. A separate series of these Numbers shall be assigns for each channel and a new series shall be started at 0000 hours.

174.413 The use of four digit channel sequence number

The use of four digit channel sequence number, to preclude duplication of the same numbers during the 42 hour period, is permitted subject to agreement between the authorities responsible for the operation of the circuit.

174.415 The transmission identification

The transmission identification shall be sent over the circuit in the following sequence:

- (a) Space;
- (b) Transmitting terminal letter;
- (c) Receiving terminal letter;
- (d) Channel identification letter;
- (e) Figure shift; and
- (f) Channel sequence number (3 digits)

174.417 Teletypewriter operation

In teletypewriter operation, the spacing signal, consisting of 5 SPACES [→→→→→] followed by 1 LETTER SHIFT [↓], shall be transmitted immediately following the transmission identification Tape Page-copy →GLB↑039→→→→→↓ GLB039 (This indicates the 39th message of the day transmitted on Channel B of the circuit from Station G to Station L.)

174.419 Optional service information

Optional service information can be inserted following the transmission identification subject to agreement between the authorities responsible for the operation of the circuit. Such additional service information shall be preceded by a SPACE followed by not more than ten characters and shall not contain any alignment functions.

174.421 Misinterpretation

To avoid any misinterpretation of the diversion indicator specially when considering the possibility of a partly mutilated heading, the sequence of two consecutive signals NO 22 in the letter case or in the figure case should not appear in any other component of the heading.

174.423 Address

The address shall comprise:

- (a) Alignment function;
- (b) Priority indicator;
- (c) Addressee indicator; and
- (d) Alignment function.

174.425 Priority indicator

Priority indicator shall consist of the appropriate two-letter group assigned by the originator in accordance with the following priorities:

- (a) Message category indicator;

- (b) Distress messages SS;
- (c) Urgency messages DD;
- (d) Flight safety messages FF;
- (e) Meteorological messages GG;
- (f) Flight regularity messages GG;
- (g) Aeronautical information services messages GG; and
- (h) Aeronautical administrative messages KK.

174.427 An addressee indicators

Addressee indicators, which shall be immediately preceded by a SPACE, except when it is the first address indicator of the second or third line of address, shall comprise:

- (a) The four-letter location indicator of the place of destination; and
- (b) The three-letter designator identifying the organization/function (authority, service or aircraft operating agency) addressed and an additional letter, which shall represent a department, division or process within the organization/function addressed. The letter X shall be used to complete the address when explicit identification is not required.

174.429 Address has not been allocated an ICAO

Where a message is to be addressed to an organization that has not been allocated an ICAO three letters designator of the type prescribed in 4.4.3.1.2, the location indicator of the place of destination shall be followed by the ICAO three letters designator YYY (or the ICAO three letter designator YXY in the case of a military service or organization). The name of the addressee organization shall then be included in the first item of the text of the message the 8th position letter following the ICAO three letters designator YYY or YXY shall be filler letter X.

174.431 Message addressed to an aircraft in flight

Where a message is to be addressed to an aircraft in flight and, therefore, requires handling over the AFTN for part of its routing before transmission over the aeronautical mobile service, the location indicator of the aeronautical station which is to relay the message to the aircraft shall be followed by the ICAO three designator ZZZ the identification of the aircraft shall then be included in the first item of the text of the message. The position letter following the ICAO three designator ZZZ shall be the filler letter.

Note.— The following examples illustrate application of the Standards in 4.4.3.1.2.1 and 4.4.3.1.2.2: 1) addressee indicators (possible types):

LGATZTZX aerodrome control tower (ZTZ) at LGAT LGATYMYF section (F) of the Meteorological Office (YMY) at LGAT LGATKLMN department (N) of the aircraft operating agency KLM (KLM) at LGAT LGATYYYX the aircraft operating agency whose name appears in the beginning of the message text and whose office location is served by LGAT LGATZZZX the aeronautical station (LGAT) is required to relay this message in the aeronautical mobile service to the aircraft whose identification appears in the beginning of the message text.

2) YYY ICAO three-letter designator: Example of a message addressed to (say) “Penguin Airlines” at NCRG by the PHNL office of the same aircraft operating agency. The Heading and Ending of the message are not shown in this example of teletypewriter pagecopy form. (Address) GG NCRGYYYX (Origin) 311521 PHNLYYYX (Text) AIR PENGUIN FLIGHT 801 CANCELLED

3) ZZZ ICAO three-letter designator: Example of a message addressed to aircraft GABCD via aeronautical station NZAA from Area Control Centre at NZZC. The Heading and Ending of the message are not shown in this example of teletypewriter page-copy form. (Address) FF NZAAZZZX (Origin) 031451 NZZCZQZX (Text) GABCD CLR DES 5000FT HK NDB

174.433 The complete address

The complete address shall be restricted to three lines of page printing copy and comma except as provided in 4.4.14, a separate addressee indicator shall be used for each addressee whether at the same or at different location.

174.435 Messages offered in page copy

Where messages offered in page copy form for transmission and contain more addressee indicator than can be accommodated on three lines of a page copy, such message shall be converted, before transmission into two or more messages, each of which shall conform with the provisions of 174.435 and .437, during such conversion, the addressee indicator shall, in so far as practicable be positioned in the sequence which will ensure that the minimum number re-transmissions will be required at subsequent communication center.

174.437 Completion of each line of addressee

On teletypewriter circuits, the completion of each line of addressee indicator groups in the address of a message shall be immediately followed by the alignment function [$\leq$].

174.439 Origin

The origin shall comprise:

- (a) Filing time;
- (b) Originator indicator;
- (c) Priority alarm (when necessary);
- (d) Optional heading field; and
- (e) Alignment function.

174.441 The filing time

The filing time shall comprise the 6-digit date time group indicating the date and time of filing the message for transmission in Teletype write operation, the filling time shall followed by one letter shift.

174.443 The origin indicator

An originator indicator, which shall immediately preceded by a space shall comprise:

- (a) The four-letter location indicator of the place at which the message is originated;
- (b) The three-letter designator identifying the organization function (aeronautical authority, service or aircraft operating agency) which originated the message; and
- (c) An additional letter which shall represent a department, division or process within the organization/function of the originator. The letter X shall be used to complete the address when explicit identification is not required.

174.445 Organization has not been allocated an ICAO

Where a message is originated by an organization that has not been allocated and ICAO three letter designator of the type the location Indicator of the place at which the message is originated shall be followed immediately by the ICAO three letter designator YYY followed by the filler Letter X (or the ICAO three letter designator YXY followed by the filler X In the case a military service or organization). The name of the organization (or Military service) shall then be included in the first item in the text of the message.

174.447 Message originated by an aircraft in flight

Where a message originated by an aircraft in flight requires handling on the AFTN for part of its routing before delivery, the originator shall comprise the location indicator of the aeronautical station responsible for transferring the message to the AFTN, followed immediately by the ICAO three letters designator ZZZ followed The filler letter X. the identification of the aircraft shall then be included in the First item in the text of the message.

174.449 Messages relayed over AFTN

Messages relayed over the AFTN that have been originated in other networks shall have a valid AFTN originator that has been agreed for use by the relay or gateway function linking the AFTN with the external network.

174.451 The priority alarm

The priority alarm shall be used only for distress messages. When used it shall consist of the following, in the order stated;

- (a) FIGURE SHIFT [- ---];
- (b) FIVE transmissions of signal no. 10 (figure case); and
- (c) LETTER SHIFT [□].

174.453 The inclusion of optional data

The inclusion of optional data in the origin line shall be permitted provided a total of 96 characters is not exceeded and subject to agreement between the authorities concerned.

174.455 The presence of the optional data

The presence of the optional data field should be indicated by one occurrence of the space character and terminated by the alignment function.

174.457 Additional addressing information in a message

When additional addressing information in a message needs to be exchanged between source and destination addresses, it should be conveyed in the optional data field (ODF), using the specific format characters one and full stop to indicate the parameter code for the additional address function three modifier characters followed by an equal sign (=) and the assigned 8- characters ICAO address, and the character (-) to terminate the additional address parameter field.

174.459 Separate address for service messages

When a separate address for service messages or inquiries is different from the originator indicator, the modifier SVC should be used.

174.461 The origin line

The origin line shall be concluded by and alignment function.

174.463 Drafted messages

The text of messages shall be drafted in accordance with ICAO message format

174.465 Beginning of the text

When an originator's reference is used, it shall appear at the beginning of the text

174.467 ICAO three letter designator

When the ICAO three letter designator YXY, YYY or ZZZ comprise the second element of addressee indicator and it therefore, becomes necessary to identify in the text the specific addressee of the message, such identification group will precede the originator's (if used) and become the first item of the text

174.469 ICAO three letter designator YXY, YYY or ZZZ

When the ICAO three letter designator YXY, YYY or ZZZ comprise the second element of the originator indicator and it thus, becomes necessary to identify in the text the name of organization or (military service) or the aircraft, which originated the message, such identification shall be inserted in the first item of the text of the message.

174.471 ICAO three letters designator (s) YXY, YYY or ZZZ

When applying the provisions of messages where the ICAO three letters designator (s) YXY, YYY or ZZZ is (are) used to refer to two or more different organizations or (military services), the sequence of further identification in the text shall correspond to the complete sequence used in the address and origin of the message. In such instance, used

in the address each addressee identification shall be followed immediately by an alignment function. Message shall the name of the (YXY, YYY or ZZZ) organization originating the function. Message shall then be preceded with (FROM) (STOP) followed by an alignment function shall then be included in the text at the end of these identification to proceed the remainder of the text wording.

174.473 Alignment function

An alignment function (<=) shall be transmitted at the end of each printed line of the text.

174.475 When it is desired to confirm a portion of the text of a message in teletypewriter operation, such confirmation shall be separated from the last text group by an alignment function

174.477 When it is discovered that an error has been made in the text, the correction shall be separated from the last text group or confirmation, if any, by an alignment function

174.479 Stations shall make all indicated corrections on the page-copy prior to local delivery.

174.481 The end of text

At the end of the text the following end- of – text signal shall be transmitted one letter shift, alignment function (<=).

174.483 The length of text

- (a) When messages are transmitted only on low-speed circuits, The text of messages entered by the AFTN origin station shall not exceed 1800 characters in length. AFTN messages exceeding 1800 characters shall be entered by the AFTN origin station in the form of separate messages..
- (b) The transmission on medium- or high-speed circuits of AFTN messages with text exceeding 1 800 characters that have not been entered by the AFTN origin station in the form of separate messages shall be subject to agreement between the Administrations concerned and not diminish the performance characteristics of the network or link.

Note 1— Low-speed circuits operate at 300 bits per second or less.

Note 2— Medium-speed circuits operate at speeds in the range between 300 and 3000 bits per second. High-speed circuits operate at speeds in excess of 3000 bits per second.

Note 3 — The character count includes all printing and nonprinting characters in the text/message from, but not including, the start-of-text signal to, but not including, the first alignment function of the ending.

174.485 The ending

The ending shall comprise: the page – feed sequence consisting of seven line feed the end of message signal consisting of the letter N (letter case of signal NO140 appearing four times in undivided sequence the message separation signal consisting of a letter shift transmitter 12 times in uninterrupted sequence.

Note 1.— Nothing but letter shifts are to be transmitted in message traffic between the end-of-message signal of one message and the start-of-message signal of the next.

*Note 2.— The following illustrates the procedures specified in 4.4.2 to 4.4.6.1 inclusive for a message in page-copy form: (Heading) *ZCZC LPA183 (Address) GG LGGGZRZX LGATKLMW (Origin) 201838 ELLKLMW (Text) As required (Ending) (Page feed) NNNN** **

*Note 2A.— If this message had been one of a series and there had been no manual paper-feed action between messages by the operator attending the receiving page teletypewriter, the “NNNN” of the preceding message would have appeared here. **Note 2B.— In the circumstances described in Note 2A, the heading of the next message received would be printed on page-copy at this position.*

Note 2C.— In actual station practice, messages would be separated on page-copy by tearing through the page-feed sequence. The end-of-message signal would then appear to have become a component part of the next message.

This apparent misplacement is, however, unlikely to give rise to any misunderstanding on the part of communicators or addressees since, in practice, the end-of-message signal has no significance on page-copy. 4.4.6.2 AFTN messages entered by the AFTN origin station shall not exceed 2 100 characters in length.

Note.— The character count includes all printing and non-printing characters in the message from and including the start-of-message signal (ZCZC) to and including the end-of-message signal (NNNN).

174.487 AFTN messages

- (a) When messages are transmitted only on low-speed circuits, Messages entered by the AFTN origin station shall not exceed 2100 characters in length.
- (b) The transmission on medium- or high-speed circuits of AFTN messages exceeding 2100 characters that have not been entered by the AFTN origin station in the form of separate messages shall be subject to agreement between the Administrations concerned and not diminish the performance characteristics of the network or link.

Note 1— Low-speed circuits operate at 300 bits per second or less.

Note 2— Medium-speed circuits operate at speeds in the range between 300 and 3000 bits per second. High-speed circuits operate at speeds in excess of 3000 bits per second.

Note 3—The character count includes all printing and non-printing characters in the message from and including the start-of-heading character (SOH) to and including the end-of-text character.

174.488

The transmission of message texts that do not require conversion to the IA-2 code and format and with message lines containing more than 69 printable and non-printable characters shall be subject to agreement between the Administrations concerned.

174.489 Stripped address

Stripped address shall be used when an AFTN communication center shall omit from the address or the addressee indicators not required for: onward transmission by the AFTN communication center to which the message is transmitted. Local delivery to the addressee (s) by the AFTN destination station onward transmission or local delivery by the aggregate of stations on a multi- point circuit.

174.491 Characters and spaces

A single line of page-copy shall not contain more than a total of 69 characters and/or spaces.

174.493 Line of the text of a message.

One CARRIAGE RETURN (<) and one LINE FEED IMPULSES (=) shall be transmitted between each printed page – line of the text of a message.

174.495 Channel-check transmissions

Channel-check transmissions, the following periodic transmissions shall be sent on teletypewriter circuits:

- (a) Heading;
- (b) Alignment function;
- (c) The procedure signal CH;

- (d) Alignment function;
- (e) End-of-message signal [NNNN]; and
- (f) Message-separation signal, (if required): The receiving station shall then check the transmission identification of this incoming transmission to ensure its correct sequence in respect of all messages received over that incoming channel.

174.497 Periodical check

Where a circuit is unoccupied, the transmission should be at H+00, H+20, and H+ 40.

174.499 In case of periodical check not received

If a periodic channel check transmission is not received within a tolerant agreed for that channel a station shall send a service message to the station from which the transmission was expected, the text of this service message shall comprise:

- (a) The abbreviation SVC;
- (b) The procedure signal MIS;
- (c) The procedure signal CH;
- (d) (Optionally) the time at which transmission was expected;
- (e) The procedure signal LR;
- (f) The transmission identification of the last message received; and
- (g) The end of text signal

174.501 Channel check transmission

When a teletypewriter channel is equipped with a system of controlled circuit protocol and following agreement between the Administrations responsible, the periodic Transmission shall be sent on teletypewriter circuits.

174.503 Channel-check transmissions

channel-check transmissions and station radio identifications. In order to satisfy the requirements of ITU regarding periodic transmission of the station radio identification, those AFTN stations using radio teletypewriter channels may combine the station radio identification transmission with the channel-check transmission specified in 174.495..

174.505 *When multichannel radio teletypewriter circuits are used (e.g. MET and AFTN) the station radio call sign transmission should be sent on only one channel of the circuit. The channel chosen should be the one which is the most convenient for this purpose with the identification transmission being sent in conformance with the format used on that channel. When an AFTN channel is chosen the identification transmission should be combined with the channel-check transmission.*

174.507 Automatic error correction

When a teletypewriter circuit is associated with Automatic Error Correction equipment, and following agreement between the Administrations responsible, the transmissions need not be made.

174.509 Periodical responsibility

Messages shall be transmitted in accordance with predetermined responsibility for onward relay as agreed between the Administrations responsible for the operation of directly connected stations.

174.511 Predetermined responsibility list

Arising from the responsibility agreements established under the predetermined responsibility, each station of the AFTN shall employ and, adhere to a Routing Directory which consists of the Routing list.

174.513 In case of containing identical location indicator in the address

When an incoming message contains only identical location indicator in the lines following the heading the receiving station shall accept responsibility for further relay. If possible such relay shall be effected on the normal outgoing circuit to the place of destination of the message if it is not possible to use the normal circuit; an appropriate alternative outgoing circuit shall be used. When neither of these facilities is in operation, the message shall not be re-transmitted over the circuit from which it was received without prior service notification of this action being given to the station that had made the previous transmission.

174.515 AFTN message originator not capable of handling service messages

An AFTN message originator not capable of handling service messages should agree with the AFTN center it is connected to on a method of exchanging service message.

174.517 Form of transmission

Form of transmission - teletypewriter operation: All transmission shall comprise the following order starting pulse:

- (a) Heading;
- (b) Address;
- (c) Origin;
- (d) Text; and
- (e) Ending.

174.519 Message format

Message format all messages shall be prepared in accordance with: (ITA-2 format) or (IA-5 format)

174.521 The heading line

The heading line with the exception of the SOH character, should be omitted on circuits employing one of the data link control procedures.

174.523 Re-processing procedures

A message requiring re-transmission shall have its previous heading deleted by the station which received such message for relay. The re-transmission shall commence with the new heading using the transmission identification for the outgoing channel.

174.525 Transmission of address

The transmission of address part of the message shall commence at some point during the 5 spaces, 1 letter shift immediately preceding the first alignment function.

174.527 Acknowledgement of receipt

Acknowledgement of receipt of messages: In teletypewriter operation a receiving station shall not transmit acknowledgement of receipt of incoming messages.

174.529 The receipt of distress messages

The receipt of distress messages (priority indicator SS.) shall be individually acknowledged by the AFTN destination station by sending a service message to the AFTN origin station. Such acknowledgement of receipt shall take the format of a complete message addressed to the AFTN origin station, shall be assigned priority indicator SS and the associated priority alarm and shall have a text comprising:

- (a) The procedure signal R;
- (b) The origin without priority alarm, or optional heading information of the message being acknowledged; and
- (c) The end of text signal.

174.531 Repetition of multi-address message

In cases where an addressee of a multi- address message request repetition from the origin station, the origin station shall address the repeat of the message procedure only to the addressee requesting the repeat. Under this condition the signal DUPE shall not be included.

174.533 Detecting a mutilated message during the re-transmission

Before retransmission is commenced, a relay station detects that one or more messages have been mutilated at some point ahead of the end-of-message signal, and it has reason to believe that this mutilation had occurred during or subsequent to its transmission from the previous station, it shall send a service message to the previous station rejecting the mutilated transmission and requesting a repetition of the incorrectly received message (or messages).

174.533.1 Responsibility of the originator of mutilated message

When the provisions of 174.533 are applied, the originator as identified by the originator indicator in the origin of the mutilated message shall reassume responsibility for the mutilated message, and shall comply with the provisions of 174.533.2

174.533.2 Preparing the mutilated message

Following shall be accomplished before the un mutilated version of the message is transmitted for the second time towards the same addressee or addressees:

- (a) Insert a new heading;
- (b) Remove the ending of the message
- (c) Insert in lieu thereof the procedure signal DUPE.

174.533.3 Detecting mutilated messages during the re-transmission

before retransmission is commenced, a relay station detects that one or more messages have been mutilated at some point ahead of the end-of-message signal, and it has reason to believe that this mutilation had occurred during or subsequent to its transmission from the previous station, it shall send a service message to previous station rejecting the mutilated transmission and requesting a repetition of the incorrectly received message (or messages).

174.535 Receiving service Message for mutilated message

The station receiving the service message shall re-assume the responsibility for the referenced message. It shall then re-transmit the un mutilated copy of the referenced message with a new transmission identification. If that station is not possession of an mutilated copy of the original message, it shall take the action required.

174.537 Before re-transmission is commenced

If before re-transmission is commenced a relay station detects that a received message has a recognizable but mutilated end-of-message signal. It shall where necessary repair this mutilation before re-transmission.

174.539 After a message has been transmitted

If after a message has been transmitted into, a station detects that the text or the origin of the message was mutilated or incomplete, it shall transmit to all addresses concerned a service message with the following text, if an unmotivated copy of the message is available in the station:

SVC CORRECTION (THE ORIGIN INCORRECT MESSAGE) STOP (FOLLOWED BY THE CORRECT TEXT).

174.541 If after transmission of the text

After transmission of the message text, if a relay station detects that the message has an obviously mutilated end-of-message signal; it shall insert a proper end of-message signal into the channel.

174.543 Incomplete end of message signal

After transmission of the text material of a message, if a relay station can detect that there is no complete end-of-message signal, but has no practicable means of discovering whether the irregularity has affected only the end of- message signal or whether it may have also caused part of the original text to have been lost, it shall insert into the channel the following:

- (a) ^<=CHECK=TEXT=NEW ENDING ADDED ;
- (b) Its own station identification;
- (c) ^<=; and
- (d) A proper ending as described in 174.485.

174.545 Relay stations

Relay stations applying the procedural should, if practicable, ensure that the appropriate material therein prescribed is inserted prior to the transmission of a complete start-of-message signal associated with any following message.

174.547 Receiving completely mutilated address line

If a relay station detects that a message was received with a completely mutilated address line, it shall send a service message to the previous station rejecting the mutilated transmission.

174.549 The text of this service message

The text of this service message shall comprise:

- (a) The abbreviation SVC
- (b) The procedure signal QTA
- (c) The procedure signal ADS
- (d) The transmission identification of the message rejected
- (e) The indication corrupt
- (f) The end of text signal

174.551 Resuming the responsibility

The station receiving such a service message shall re-assume responsibility for the referenced message and shall re-transmit the message with a corrected address line, and new transmission identification.

174.553 Length of messages other than 8 letters

If a relay station detects a received message with an invalid (i.e. length other than 8 letters) or unknown addressee indicator, it shall relay the message to those valid addresses for which it has relay responsibility using the stripped address procedure.

174.555 Service requesting correction in errors

The station shall send a service message to the previous station requesting correction of the error. The text of this service message shall comprise:

- (a) The abbreviation SVC;
- (b) The procedure signal ADS;
- (c) The transmission identification of the message in error;
- (d) An alignment function;
- (e) The first address line of the message as received;
- (f) An alignment function; and
- (g) Either:
 - (1) For an invalid addressee indicator: the indication CHECK;
 - (2) For an unknown addressee indicator: the indication UNKNOWN;
 - (3) The invalid or unknown addressee indicator(s); or
 - (4) The end-of-text signal.

174.557 Station receiving a service message

A station receiving a service message shall, if a Correct addressee indicator is available, repeat the message to that addressee only using the stripped address procedure or, if a correct addressee indicator is not available, the shall send a service message to the previous station requesting correction of the error.

174.559 Unknown addressee indicator

In the case of an unknown addressee indicator, and if the origin of the message is without fault, the station shall send a service message to the originator. The text of this service message shall comprise:

- (a) The abbreviation SVC;
- (b) The procedure signal ADS;
- (c) The origin of the message in error;
- (d) An alignment function;
- (e) The first address line of the message as received;
- (f) An alignment function;
- (g) The indication UNKNOWN;
- (h) The unknown addressee indicator(s); and
- (j) The end-of-text signal.

174.561 Correct addressee indicator

The station receiving a message described in 174.561 shall obtain a correct addressee indicator and shall repeat the message to the addressee using the stripped address procedure.

174.563 The first relay station

When the first relay station detects that a message was received with a mutilated origin line or without any origin, it shall:

- (a) Stop processing the message; and
- (b) Send a service message to the station from which the station from which the message was received.

174.565 The text of this service message

The text of this service message shall comprise:

- (a) The abbreviation SVC;
- (b) The procedure signal QTA;
- (c) The procedure signal OGN;
- (d) The transmission identification of the message rejected;
- (e) The indication CORRUPT; and
- (f) The end-of-text signal.

174.567 Action be taken on a service message

The station receiving a service message shall reassume responsibility for the referenced message and shall retransmit the message with a correct origin line and a new transmission identification.

174.569 Receiving incorrect originator indicator

When the first relay station detects that a message was received with an incorrect originator indicator, it shall:

- (a) Stop processing the message; and
- (b) Send a service message to the station from which the message was received.

174.571 Text of the service message

The text of the service message shall comprise:

- (a) The abbreviation SVC;
- (b) The procedure signal QTA;
- (c) The procedure signal OGN;
- (d) The transmission identification of the message rejected;
- (e) The indicator INCORRECT; and
- (f) The end-of-text signal.

174.573 The station receiving a service message

The station receiving a service message shall resume responsibility for the referenced message and shall retransmit the message with a correct originator indicator and if applicable, a new transmission identification.

174.575 Typing of the ending

The ending must be typed without error.

174.577 Predetermined distribution system

When it has been agreed between the Administrations concerned to make use of a predetermined distribution system for AFTN messages.

174.579 Predetermined distribution addressee indicator (PDAI)

The predetermined distribution addressee indicator shall be constructed as follows:

- (a) The first and second letters: The first two letters of the Location Indicator of the communications centre of the State which has agreed to implement the system and which receives messages over a circuit for which it has a predetermined routing responsibility;
- (b) The third and fourth letters: The letters ZZ, indicating a requirement for special distribution;
- (c) The fifth, sixth and seventh letters:
 - (1) The fifth, sixth and seventh letters taken from the series A to Z and denoting the national and/or international distribution list(s) to be used by the receiving AFTN centre;
 - (2) “N” and “S”, as the fifth letter, are reserved for NOTAM and SNOWTAM respectively (detailed specifications concerning NOTAM, including formats for SNOWTAM are contained in PANS-AIM (Doc\10066));
- (d) The eighth letter: Either the filler letter “X” or a letter taken from the series A to Z to further define the national and/ or international distribution list(s) to be used by the receiving AFTN centre.

174.581. AFTN messages carrying predetermined addressee indicator

Distribution addressee indicators allocated by the State receiving the message shall be routed to the addressees listed on the associated list of addressee indicators described in 173.583.

174.583 States shall send their list of selected predetermined list

States shall send their list of selected Predetermined Distribution Addressee Indicators together with the associated lists of Addressee Indicators to:

- (a) The States from which they will receive AFTN messages for predetermined distribution, to assure correct routing; and
- (b) The States which will originate AFTN messages for predetermined distribution to facilitate the treatment of requests for retransmission and to assist originators in using the predetermined distribution addressee indicators correctly.

174.585 The list of addressee indicator of (PDAI)

The list of Addressee Indicators associated with a predetermined distribution addressee indicator shall include either:

- (a) Addressee Indicators for national distribution;
- (b) Addressee Indicators for international distribution;
- (c) Predetermined Distribution Addressee Indicators for international distribution; or
- (d) Any combination of (a), (b) and (c).

174.587 Message format

Message format — International Alphabet No. 5 (IA-5): When it has been agreed between the Administrations concerned to use International Alphabet No. 5 (IA-5) , it shall be the responsibility of Administrations using IA-5 to accommodate adjacent AFTN stations employing ITA-2 code.

174.589 Heading

The heading shall comprise:

- (a) Start-of-heading (SOH) character 0/1;
- (b) Transmission identification comprising:
- (c) circuit or link identification;
- (d) channel-sequence number;
- (e) Additional service information (if necessary) comprising:
- (f) One SPACE; and
- (g) No more than 10 characters.

174.591 On point-to-point circuits

On point-to-point circuits or links, the identification shall consist of three letters selected and assigned by the transmitting station; the first letter identifying the transmitting, the second letter the receiving end of the circuit, and the third letter the channel. Where only one channel exists, the letter A shall be assigned. Where more than one channel between stations is provided, the channels shall be identified Alphabet No. 5 (IA-5) as A, B, C, etc., in respective order. On multipoint channels, the identification shall consist of three letters selected and assigned by the circuit control or master station.

174.593 Channel sequence numbers

Three-digit channel-sequence numbers from 001 to 000 (representing 1 000) shall be assigned sequentially by telecommunication stations to all messages transmitted directly from one station to of these numbers shall be assigned another A separate series for each channel and a new series shall be started daily at 0000 hour.

174.595 The expansion of the channel-sequence number

The expansion of the channel-sequence number to preclude duplication of the same numbers during the 24-hour period should be permitted subject to agreement between the authorities responsible for the operation of the circuit.

174.597 The transmission identification

The transmission identification shall be sent over the circuit in the following sequence:

- (a) Transmitting-terminal letter;
- (b) Receiving-terminal letter;
- (c) Channel-identification letter; and
- (d) Channel-sequence number.

174.599 Additional service information

Additional service information shall be permitted to be inserted following the transmission identification subject to agreement between the Authorities responsible for the operation of the circuit. Such additional service information shall be preceded by a SPACE (→) followed by not more than 10 characters inserted into the heading of message immediately following the last digit of the channel-sequence number and shall not contain any alignment functions. When no such additional service information is added of transmission identification shall be followed immediately by address.

174.601 Address

The address shall comprise:

- (a) Alignment function [$\leq$];
- (b) Priority indicator;
- (c) Addressee indicator(s); and
- (d) Alignment function [$\leq$].

174.603 The priority indicator

The priority indicator shall consist of the appropriate two-letter group assigned by the originator in accordance with the following:

- (a) SS distress messages;
- (b) DD urgency messages;
- (c) FF flight safety messages;
- (d) GG meteorological messages;
- (e) GG flight regularity messages;
- (f) GG aeronautical information services messages;
- (g) KK aeronautical administrative messages; and
- (h) As appropriate service messages.

174.605 Order of priority

The order of priority shall be the same as specified in previous item.

174.607 Addressee indicator

An addressee indicator, which shall be immediately preceded by a SPACE, except when it is the first address indicator of the second or third line of addresses, shall comprise:

- (a) The four-letter location indicator of the place of destination;
- (b) The three-letter designator identifying the organization/function (aeronautical authority, service or aircraft operating agency) addressed; and
- (c) An additional letter, which shall represent a department, division or process within the organization/function addressed. The letter X shall be used to complete the address when explicit identification is not required.

174.609 Message be addressed to an organization

Where a message is to be addressed to an organization that has not been allocated an ICAO three-letter designator; the location indicator of the place of destination shall be followed by the ICAO three-letter Designator YYY (or the ICAO three-letter designator YXY in the case of a military service or organization). The name of the addressee organization shall then be included in the first item in the text of the message. The eighth position letter following the ICAO three-letter designator YYY or YXY shall be the filler letter.

174.611 Message be addressed to an aircraft in flight

Where a message is to be addressed to an aircraft in flight and, therefore, requires handling over the AFTN for part of its routing before retransmission over the Aeronautical Mobile Service, the location indicator of the aeronautical station which is to relay the message to the aircraft shall be followed by the ICAO three-letter designator ZZZ. The identification of the aircraft shall then be included in the first item of the text of the message. The eighth position letter following the ICAO three-letter designator ZZZ shall be the filler letter

174.613 Three address lines

The complete address shall be restricted to three lines of page-printing copy, as provided in a separate addressee indicator shall be used for each addressee whether at the same or different locations.

174.615 The completion of the addressee indicator

The completion of the addressee indicator group(s) in the address of a message shall be immediately followed by the alignment function.

174.617 Messages offered on page copy

Where messages are offered in page-copy form for transmission and contain more addressee indicators than can be accommodated on three lines of a page copy, such messages shall be converted, before transmission, into two or more messages, each of which shall conform to the provisions as 174.615. During such conversion, the addressee indicators shall, in so far as practicable, be positioned in the sequence which will ensure that the minimum number of retransmissions will be required at subsequent communication centres.

174.619 Origin

The origin shall comprise:

- (a) Filing time;
- (b) Originator indicator;
- (c) Priority alarm (when necessary);
- (d) Optional heading information;
- (e) Alignment function [$\leq$]; and
- (f) start-of-text character, character 0/2 (STX).

174.621 The filing time

The filing time shall comprise the 6-digit date-time group indicating the date and time of filing the message for transmission.

174.623 The originator indicator

The originator indicator, which shall be immediately preceded by a SPACE, shall comprise:

- (a) The eighth position letter following the ICAO three-letter;
- (b) The four-letter location indicator of the place at which the message is originated;
- (c) The three-letter designator identifying the organization/ function (aeronautical authority, service or aircraft operating agency) which originated the message; division or process within the organization/function of the originator. The letter X shall be used to complete the address when explicit identification is not required; and
- (d) An additional letter which shall represent a department, organization/function of the originator. The letter X shall be used to complete the address when explicit identification is not required.

174.625 Message originated by an organization

Where a message is originated by an organization that has not been allocated an ICAO three-letter designator, the location indicator of the place at which the message is originated shall be followed immediately by the ICAO three-letter designator YYY followed by the filler letter X (or the ICAO three-letter designator YXY followed by the filler letter X the case of a military service or organization). The name of the organization (or military service) shall then be included in the first item in the text of the message.

174.627 Messages relayed over the AFTN

Messages relayed over the AFTN that have been originator indicator that has been agreed for use by the relay or gateway function linking the AFTN with the external network.

174.629 Message originated by an aircraft in flight and requesting handling over AFTN

Where a message originated by an aircraft in flight requires handling on the AFTN for part of its routing before delivery, the originator indicator shall comprise the location indicator of the aeronautical station responsible for transferring the message to the AFTN, followed immediately by the ICAO three-letter designator ZZZ followed by the filler letter X. The identification of the aircraft shall then be included in the first item in the text of the message.

174.631 The priority alarm

The priority alarm shall be used only for distress messages. When used it shall consist of five successive BEL (0/7) characters.

174.633 The inclusion of optional data

The inclusion of optional data in the origin line shall be permitted provided a total of 69 characters is not exceeded and subject to agreement between the administrations concerned.

174.635 The presence of the optional data

The presence of the optional data field should be indicated by one occurrence of the space character and terminated by the alignment function.

174.637 Exchanging of additional addressing information

When additional addressing information in a message needs to be exchanged between source and destination addresses, it should be conveyed in the optional data field (ODF), using the following specific format:

- (a) Characters one and full stop (1.) to indicate the parameter code for the additional address function;
- (b) Three modifier characters, followed by an equal sign (=) and the assigned 8-character ICAO address; and
- (c) The character hyphen (-) to terminate the additional address parameter field

174.639 Modifier SVC

When a separate address for service messages or inquiries is different from the originator indicator, the modifier SVC should be used.

174.641 The origin line

The origin line shall be concluded by an alignment function [$\leq$] and the start-of-text (STX) (0/2) character.

174.643 The text

The text of messages shall be drafted in accordance with 174.303 and shall consist of all data between STX and ETX.

174.645 Originator's reference

When an originator's reference is used, it shall appear at the beginning of the text.

174.647 ICAO three-letter designators

When the ICAO three-letter designators YXY, YYY or ZZZ comprise the second element of the addressee indicator and it, therefore, becomes necessary to identify in the text the specific addressee of the message, such identification group shall precede the originator's reference (if used) and become the first item of the text.

174.649 ICAO three-letter designators

When the ICAO three-letter designators YXY, YYY or ZZZ comprise the second element of the originator indicator and it thus becomes necessary to identify in the text the name of the organization (or military service) or the aircraft which originated the message, such identification shall be inserted in the first item of the text of the message.

174.651 ICAO three-letter designator(s)

Where the ICAO three-letter designator(s) YXY, YYY, ZZZ refer to two or more different organizations (or military services), the sequence of further identification in the

text shall correspond to the complete sequence used in the address and originator indicator of the message. In such instance, each addressee identification shall be followed immediately by an alignment function. The name of the (YXY, YYY or ZZZ) organization originating the message shall then be preceded with "FROM". "STOP" followed by an alignment function shall then be included in the text at the end of this identification and preceding the remainder of text.

174.653 An alignment function

An alignment function shall be transmitted at the end of each printed line of the text. When it is desired to confirm a portion of the text of a message in teletypewriter operation, such confirmation shall be separated from the last text group by an alignment function [$\leq$], and shall be indicated by the abbreviation CFM followed by the portion being confirmed.

174.657 The text of messages

The text of messages entered by the AFTN origin station shall not exceed 1 800 characters in length. AFTN messages exceeding 1 800 characters shall be entered by the AFTN origin station in the form of separate messages.

When messages or data are transmitted only on medium or high speed circuits the text may be increased to a length that exceeds 1 800 characters as long as performance characteristics of the network or link are not diminished and subject to agreement between the Administrations concerned.

174.659 Ending

The ending of a message shall comprise the following in the order stated: An alignment [$\leq$] function following the last line of text page-feed character, character 0/11 (VT); end-of-text character 0/3 (ETX).

174.661 Station terminal equipment (page printers)

Station terminal equipment (page printers) on the International Alphabet Number 5 (IA-5) shall be provided with a capability to generate sufficient line feed functions for local station use upon the reception of a VERTICAL TAB character (0/11).

174.663 Message does not transit ITA-2

When the message does not transit ITA-2 portions of the AFTN, or where Administrations have made provisions to add automatically and shall have a text comprising:

174.665 Messages length

Messages entered by the AFTN origin station shall not exceed 2 100 characters in length.

174.667 Procedures for messages using IA5 code

Except as provided in 174.668 to 174.669 and 174.673 to 174.677, the procedures of 174.489 and 174.491 to 174.575 shall be used for messages using IA-5 code.

174.668 Channel-check transmissions

Channel -check transmissions. In the case where continuous control of channel condition is not provided the following periodic transmissions shall be sent on tele-typewriter circuits.

174.669 Periodical check transmission

Where a circuit is unoccupied and uncontrolled, the transmission identified in 174.668 should be sent at H + 00, H + 20, H + 40.

174.671 Distress message acknowledgement

The receipt of distress messages (priority indicator SS, see 174.317) shall be individually acknowledged by the AFTN destination station by sending a service message (see 174.333) to the AFTN origin station. Such acknowledgement of receipt shall take the format of a complete message addressed to the AFTN origin station, shall be assigned priority indicator SS and the associated priority alarm (see 174.631), and shall have a text comprising:

- (a) The procedure signal R;
- (b) The origin line (see 174.619) without priority alarm, or optional heading information of the message being acknowledged;
- (c) The ending (see 174.659).

174.673 Mutilated messages in IA-5 on channels employing continuous control

On channels employing continuous control the mutilation detection and subsequent recovery shall be a function of the link control procedures and shall not require the subsequent sending of service or CHECK TEXT NEW ENDING ADDED messages.

174.675 Mutilated messages in IA-5 on channels not employing continuous control

If, during the reception of a message a relay station detects that the message has been mutilated at some point ahead of the end-of-text character, it shall:

- (a) cancel the onward routing responsibility for the message;
- (b) Send a service message to the transmitting station requesting a retransmission.

174.675.1 Responsibility of station sent a mutilated message

When the provisions of 174.675 are applied, the station receiving the service message shall reassume responsibility for the referenced message with a new (i.e. correct in sequence) transmission identification (see 174.601). If that station is not in possession of an unmutilated copy of the original message, it shall send a message to the originator as identified by the originator indicator in the origin of the mutilated message, requesting repetition of the incorrectly received message.

174.677 Absence of the end-of-text character

If, after transmission of the text material of a message, a relay station can detect that there is no complete end-of-text character, but has no practical means of discovering whether the irregularity has affected only the end-of-text character, or whether it has also caused part of the original text to have been lost, it shall insert into the channel the following:

- (a) <=CHECK=TEXT=NEW®ENDING®ADDED
- (b) Its own station identification;
- (c) (Ending - see 174.659).

174.679

Transfer of AFTN messages over code and byte independent circuits and networks When AFTN messages are transferred across code and byte independent circuits and networks of the AFS, the following shall apply.

174.681 Common ICAO Data Interchange Network (CIDIN)

the heading line of the message shall be omitted. The message shall start with an alignment function followed by the address.

174.683

The message shall end with a complete ending

174.685

For the purposes of technical supervision, entry centres should be permitted to insert additional data preceding the first alignment function and/or following the ending of the message. Such data may be disregarded by the receiving station.

174.687

When the provisions of 174.685 are applied, the data added shall not include either carriage return or line feed characters or any of the combinations listed in

174.683 to 174.687 RESERVED**174.689 The ATS message handling service (AMHS)**

The ATS message service of the ATS (air traffic services) message handling service (ATSMHS) application shall use to exchange ATS messages between users over the aeronautical telecommunication network (ATN) internet.

Note1. — The ATS message service comprised in the ATS message handling service application aims at providing generic message services over the ATN internet communication service (ICS). It may, in turn, used as a communication system by user-applications communicating over the ATN. This may achieved, for example, by means of application programme interfaces to the ATS message service.

Note 2.— The detailed specification of the ATS message handling service application is included in the Manual of Technical Provisions for the Aeronautical Telecommunication Network (ATN) (Doc 9705), Sub-volume III.

Note3. — The ATS message service provided by the implementation over the ATN internet communication service of the message handling systems specified in ISO/IEC (International Organization for Standardization/International

TABEL communications between ATN end systems implementing ATS message handling services

ATN End System 1	ATN End System 2
ATS Message Server	ATS Message Server
ATS Message Server	AFTN/AMHS Gateway
ATS Message Server	CIDIN/AMHS Gateway
ATS Message Server	ATS Message User Agent
AFTN/AMHS Gateway	AFTN/AMHS Gateway
CIDIN/AMHS Gateway	CIDIN/AMHS Gateway
CIDIN/AMHS Gateway	AFTN/AMHS Gateway

174.691 RESERVED**174.693 The highest standard of discipline**

In all communications the highest standard of discipline shall be observed at all times.

Note 1. — For the purposes of these provisions, the communication procedures applicable to the aeronautical mobile service, as appropriate, also apply to the aeronautical mobile satellite service.

Note 2. — Guidance material for the implementation of the aeronautical mobile satellite service is contained in the Manual on the Aeronautical Mobile Satellite (Route) Service (Doc 9925). Additional guidance for satellite voice communications (SATVOICE) is contained in the Satellite Voice Operations Manual (Doc 10038) and the Performance-based Communication and Surveillance (PBCS) Manual (Doc 9869).

174.695 ICAO standardized phraseology

ICAO standardized phraseology shall be used in all situations for which it has been specified. Only when standardized phraseology cannot serve an intended transmission, plain language shall be used.

174.697 The transmission of messages

The transmission of messages, on aeronautical mobile frequencies when the aeronautical fixed services are able to serve the intended purpose, shall be avoided.

174.699 Human performance

In all communications, the consequences of human performance which could affect the accurate reception and comprehension of messages should be taken into consideration.

174.701 Test signals

Where it is necessary for an aircraft station to send signals for testing or adjustment which are liable to interfere with the working of a neighbouring aeronautical station the consent of the station shall be obtained before such signals are sent. Such transmissions shall be kept to a minimum.

174.703 Test Procedures

- (a) The form of test transmissions should be as follows:
 - (1) the identification of the station being called;
 - (2) the aircraft identification;
 - (3) the words "RADIO CHECK"
 - (4) the frequency being used.
- (b) The reply to a test transmission should be as follows:
 - (1) The identification of the aircraft;
 - (2) The identification of the aeronautical station replying;
 - (3) Information regarding the readability of the aircraft transmission.
 - (4) The test transmission and reply should be recorded at the aeronautical station.
- (c) The test transmission and reply should be recorded at the aeronautical station.
- (d) When the tests are made, the following readability scale should be used:

READABILITY	SCALE
UNREADABLE	1
READABLE NOW AND THEN	2
READABLE BUT WITH DIFFICULTY	3
READABLE	4
PERFECTLY READABLE	5

174.705 Exception

Except as otherwise provided, the responsibility of establishing communication shall rest with the station having traffic to transmit.

174.707 Elapsed period

After a call has been made to the aeronautical station, a period of at least 10 seconds should elapse before a second call is made. This should eliminate unnecessary transmissions while the aeronautical station is getting ready to reply to the initial call.

174.709 When an aeronautical station is called simultaneously by several aircraft stations

When an aeronautical station is called simultaneously by several aircraft stations, the aeronautical station shall decide the order in which aircraft shall communicate.

174.711 Communications between aircraft stations

In communications between aircraft stations, the duration of communication shall be controlled by the aircraft station which is receiving, subject to the intervention of an aeronautical station. If such communications take place on an ATS frequency, prior permission of the aeronautical station shall be obtained. Such requests for permission are required for brief exchanges.

174.713 The categories of messages handled by the aeronautical mobile service

The categories of messages handled by the aeronautical mobile service and the order of priority in the establishment of communications and the transmission of messages shall be in accordance with the following table. Message category and Radiotelephony order of priority signal

- (a) Distress calls, distress messages and distress traffic MAYDAY;
- (b) Urgency messages, including PAN, PAN messages preceded by the or PAN, PAN;
- (c) Medical transports signal MEDICAL
- (d) Communications relating to direction finding;
- (e) Flight safety messages;
- (f) Meteorological messages; and
- (g) Flight regularity messages.
- Aeronautical administrative messages.(over SSB circuit)

174.715 Distress message

Distress messages and distress traffic be handled in accordance with ECAR Part 173.

174.717 Urgency messages

Urgency messages and urgency traffic, including messages preceded by the medical transports signal, be handled in accordance with ECAR Part 173.

174.719 Flight safety messages

Flight safety messages shall comprise the following:

- (a) Movement and control messages
- (b) Messages originated by an aircraft operating agency or by an aircraft, of immediate concern to an aircraft in flight;
- (c) Meteorological advice of immediate concern to an aircraft in flight or about to depart (individually communicated or for broadcast);
- (d) Other messages concerning aircraft in flight or about to depart.

174.721 Meteorological messages

Meteorological messages shall comprise meteorological information to or from aircraft

174.723 Flight regularity messages

Flight regularity messages shall comprise the following:

- (a) Messages regarding the operation or maintenance of facilities essential for the safety or regularity of aircraft operation;
- (b) Messages concerning the servicing of aircraft;
- (c) Instructions to aircraft operating agency representatives concerning changes in requirements for passengers and crew caused by unavoidable deviations from normal operating schedules. Individual requirements of passengers or crew shall not be admissible in this type of message
- (d) Messages concerning non-routine landings to be made by the aircraft;
- (e) Messages concerning aircraft parts and materials urgently required; and
- (f) Messages concerning changes in aircraft operating schedule.

- **Aeronautical administrative messages.(over SSB circuit)**

Shall be comprise the following:

- (1) Messages concerning information regarding to the operation or maintenance related to the safety or regularity of aircraft operation.
- (2) Messages concerning information related to aeronautical telecommunication services.
- (3) Messages exchanged between civil aviation authorities relating to aeronautical services.

174.725 Messages having the same priority

(a) Air traffic services units using direct pilot-controller communication channels shall only be required to handle flight regularity messages provided this can be achieved without interference with their primary role and no other channels are available for the handling of such messages.

(b) Messages having the same priority should, in general, be transmitted in the order in which they are received for transmission.

174.727 Incomplete transmissions

If a message has not been completely transmitted when instructions to cancel are received, the station transmitting the message shall instruct the receiving station to disregard the incomplete transmission. This shall be affected in radiotelephony by use of an appropriate phrase.

174.729 Held pending correction

When a completed message transmission is being held pending correction and the receiving station is to be informed to take no forwarding action, or when delivery or onward relay cannot be accomplished, transmission should be cancelled. This should be affected in radiotelephony by the use of an appropriate phrase.

174.731 Cancellation

The station cancelling a transmission shall be responsible for any further action required.

174.733 Language

The air-ground radiotelephony communications shall be conducted in the language normally used by the station on the ground or in the English language.

174.735 The English language

The English language shall be available, on request from any aircraft station, at all stations on the ground serving designated airports and routes used by international a services. Publications and other published aeronautical information concerning such facilities.

174.737 Language

The languages available at a given station on the ground shall form part of the Aeronautical Information

174.739 Spelling

Word spelling in radiotelephony: When proper names, service abbreviations and words of which the spelling is doubtful are spelled out in radiotelephony the alphabet in Figure

174.741 Transmission of numbers

174.741.1 All numbers except as prescribed in **174.741.2** to **174.741.6** shall be transmitted by pronouncing each digit separately.

Note.— The following examples illustrate the application of this procedure (*see* 174.749 for pronunciation).

Aircraft call signs

CCA 238
OAL 242

Transmitted as

Air China two three eight
Olympic two four two

Headings

100 degrees

Transmitted as

heading one zero zero

Altimeter setting	Transmitted as
1009	QNH one zero zero nine
1000	QNH one thousand
993	QNH nine nine three
080 degrees	heading zero eight zero
Wind direction and speed	Transmitted as
200 degrees 70 knots	wind two zero zero degrees seven zero knots
160 degrees 18 knots gusting 30 knots	wind one six zero degrees one eight knots gusting three zero knots
Runway	Transmitted as
27	runway two seven
30	runway three zero

174.741.2 Flight levels shall be transmitted by pronouncing each digit separately except for the case of flight levels in whole hundreds, which shall be transmitted by pronouncing the digit of the whole hundred followed by the word HUNDRED.

Note.— The following examples illustrate the application of this procedure (see 174.749 for pronunciation).

Flight levels	Transmitted as
FL 180	flight level one eight zero
<u>FL 200</u>	<u>flight level two hundred</u>

174.741.3 The altimeter setting shall be transmitted by pronouncing each digit separately except for the case of a setting of 1 000 hPa which shall be transmitted as ONE THOUSAND.

Note.— The following examples illustrate the application of this procedure (see 174.749 for pronunciation).

174.741.4 All numbers used in the transmission of transponder codes shall be transmitted by pronouncing each digit separately except that, when the transponder codes contain whole thousands only, the information shall be transmitted by pronouncing the digit in the number of thousands followed by the word THOUSAND.

Note.— The following examples illustrate the application of this procedure (see 174.749 for pronunciation).

<u>Transponder Code</u>	<u>Transmitted as</u>
<u>2400</u>	<u>squawk two four zero zero</u>
<u>1000</u>	<u>squawk one thousand</u>
<u>2000</u>	<u>squawk two thousand</u>

174.741.5 All numbers used in the transmission of altitude, cloud height, visibility and runway visual range (RVR) information, which contain whole hundreds and whole thousands, shall be transmitted by pronouncing each digit in the number of hundreds or thousands followed by the word HUNDRED or THOUSAND as appropriate. Combinations of thousands and whole hundreds shall be transmitted by pronouncing each digit in the number of thousands followed by the word THOUSAND followed by the number of hundreds followed by the word HUNDRED.

Note.— The following examples illustrate the application of this procedure (see 174.749 for pronunciation).

Altitude	Transmitted as
800	eight hundred
3 400	three thousand four hundred
12 000	one two thousand
Cloud height	Transmitted as
2 200	two thousand two hundred
4 300	four thousand three hundred
Visibility	Transmitted as
1 000	visibility one thousand
700	visibility seven hundred
Runway visual range	Transmitted as
600	RVR six hundred
1 700	RVR one thousand seven hundred

174.741.6 When providing information regarding relative bearing to an object or to conflicting traffic in terms of the 12-hour clock, the information shall be given pronouncing the double digits as TEN, ELEVEN, or TWELVE [O'CLOCK].

174.741.7 Numbers containing a decimal point shall be transmitted as prescribed in 174.741.1 with the decimal point in appropriate sequence being indicated by the word DECIMAL.

Note 1.— The following examples illustrate the application of this procedure:

Number	Transmitted as
100.3	One Zero Zero Decimal Three
38 143.9	Three Eight One Four Three Decimal Nine

174.741.8 When transmitting time, only the minutes of the hour should normally be required. Each digit should be pronounced separately. However, the hour should be included when any possibility of confusion is likely to result.

Time	Statement
0920 (9:20 A.M.)	TOO ZE-RO or ZE-RO NIN-er TOO ZE-RO
1643 (4:43 P.M.)	FOW-er TREE or WUN SIX FOW-er TRE

174.743 -174.745:- (RESERVED)

174.747 Verification

When it is desired to verify the accurate reception of numbers the person transmitting the message shall request the person receiving the message to read back the numbers.

174.749 Pronunciation of numbers

When the language used for communication is English, numbers shall be transmitted using the following pronunciation: Numeral or numeral element Pronunciation:

0	ZE RO	5	FIFE	hundred	HUNDRED
1	WUN	6	SIX	thousand	TOUSAND
2	TOO	7	SE VEN	decimal	DAYSEEMAL
3	TREE	8	AIT		
4	FOW ER	9	NIN ER		

174.751 Transmission conduct

Transmissions shall be conducted concisely in a normal conversational tone.

174.753 Speech transmitting technique

Speech transmitting technique should be adapted to the prevailing communications conditions.

174.753.1

Messages accepted for transmission should be transmitted in plain language or ICAO phraseologies without altering the sense of the message in any way. Approved ICAO abbreviations contained in the text of the message to be transmitted to aircraft should normally be converted into the unabbreviated words or phrases which these abbreviations represent in the language used, except for those which, owing to frequent and common practice, are generally understood by aeronautical personnel.

174.753.2

To expedite communication, the use of phonetic spelling should be dispensed with, if there is no risk of this affecting correct reception and intelligibility of the message.

174.753.3

The transmission of long messages should be interrupted momentarily from time to time to permit the transmitting operator to confirm that the frequency in use is clear and, if necessary, to permit the receiving operator to request repetition of parts not received.

174.755**Messages accepted, Words and phrases**

The following words and phrases shall be used in radiotelephony communications as appropriate and shall have the meaning ascribed hereunder:

ACKNOWLEDGE	let me know that you have received and understood
AFFIRM	yes
APPROVED	permission for proposed action granted
BREAK	indicates the separation between portions of the message
BREAK BREAK	Indicates the separation between messages transmitted to different aircraft in a very busy environment.
CANCEL	annual the previously transmitted clearance.
CHANGING TO	I intend to call . . . (unit) on . . . (frequency).
CONFRIM	I request verification of (clearance, instruction, information)
CONTACT	Establish radio contact with . . .
CORRECT	True or accurate.
CORRECTION	An error has been made in this transmission

DISREGARD	Ignore, consider the transmission as not sent.
HOW DO YOU READ	What is the readability of my transmission?
I SAY AGAIN	I repeat for clarity or emphasis.
MONITOR	Listen out on (frequency).
NEGATIVE	No; or Permission not granted; or That is not correct.
OUT	This exchange of transmissions (conversation) is end no response is expected. (Not normally used In VHF communication).
OVER	My transmission is ended and I expect a response from you. (Not normally used in VHF communication).
READ BACK	Repeat all, or the Specified part, of this message back to me exactly as received
REPORT	Pass me the following information.
REQUEST	I should like to know ... , or I wish to obtain ...
ROGER	I have received all your last transmission
SAY AGAIN	Repeat all, or the following part, of your last transmission.
SPEAK SLOWER	Reduce your rate of speech.
STANDBY	Wait; and I will call you
UNABLE	I cannot comply with your request, instruction or clearance.
VERIFY	Check and confirm with originator.
WILCO	I understand your message and will comply with it,= will comply.
WORDS TWICE	please send every word of group of words twice Every word or group of words in the message will be sent twice

174.757 Messages handled entirely by the aeronautical mobile service

Messages handled entirely by the aeronautical mobile service shall comprise the following parts in the order stated:

- (a) Call indicating the addressee and the originator
- (b) Text

174.759 Messages requiring handling by the AFTN

Messages requiring handling by the AFTN for part of their routing and similarly messages which are not handled in accordance with predetermined distribution arrangements.

174.761 Messages originated in an aircraft

When originated in an aircraft:

- (a) Call
- (b) The word FOR;
- (c) The name of the organization addressed;
- (d) The name of the station of destination;
- (e) The text.

174.763 Specification of the text

The text shall be as short as practicable to convey the necessary information; full use shall be made of ICAO phraseologies

Note.— The following example illustrates the application of this procedure: (call) BOSTON RADIO SWISSAIR ONE TWO EIGHT (address) FOR SWISSAIR BOSTON (text) NUMBER ONE ENGINE CHANGE REQUIRED

174.765 Message to be addressed to an aircraft in flight

When a message, prepared in accordance with ICAO message format is retransmitted by an aeronautical station to an aircraft in flight, the heading and address of the AFTN

message format shall be omitted during the retransmission on the aeronautical mobile service.

174.767 The aeronautical mobile service transmission

The aeronautical mobile service message transmission shall comprise:

- (a) The text [incorporating any corrections (COR) contained in the AFTN message];
- (b) The word FROM;
- (c) The name of the originating organization and its location (taken from the origin section of the AFTN message).

Note: When the text of a message to be transmitted by an aeronautical station to an aircraft in flight contains approved ICAO abbreviations, these abbreviations should normally be converted during the transmission of the message into the unabbreviated words or phrases which the abbreviations represent in the language used, except for those which, owing to frequent or common practice, are generally understood by aeronautical personnel. Note. — The abbreviations which constitute the exceptions mentioned are specifically identified in the abbreviations encode sections of the ICAO PANS-ABC (Doc 8400).

174.769 Call sign of the aeronautical mobile service

Aeronautical stations in the aeronautical mobile service shall be identified by:

- (a) The name of the location; and
- (b) The unit or service available.

174.771 Units of service

The unit of service shall be identified in accordance with the table below except that the name of the location or the unit/service may be omitted provided location or the unit/service may be omitted provided Satisfactory communication has been established. Unit/service available Call sign suffix.

THE UNIT	CALL SIGN SUFFIX
flight information service	INFORMATION
aeronautical station	RADIO

174.773 Types of aircraft identification

An aircraft radiotelephony call sign shall be one of the following types:

- Type (a) the characters corresponding to the registration marking of the aircraft; or
- Type (b) the telephony designator of the aircraft operating agency, followed by the last four characters of the registration marking of the aircraft;
- Type (c) the telephony designator of the aircraft operating agency, followed by the flight identification.

174.775 Full and abbreviated call signs

The full call sign must be used when establishing communications. After Established Initial Call May Be To Use Abbreviated Call Signs As Follows:

	Type Of Call Sign	Full Call Sign	Abbreviated Call Sign
A	registration marks	N31029	N029 (OR) N29
B	aircraft operating agency followed by registration marks	Speed Bird GBGDC	Speed Bird DC Or Speed Bird GDC
C	aircraft type followed by registration marks	Boeng GABCD	Boeing CD Or Boeing BCD
D	designation of aircraft operating agency followed by the aircraft flight identification	EGYPT AIR 779 MSR779	NOT Abbreviated

174.777 Radiotelephony procedures

An aircraft shall not change the type of its radiotelephony call sign during flight, except temporarily on the instruction of an air traffic control unit in the interests of safety.

174.779 Precautions for the safety

Except for reasons of safety no transmission shall be directed to an aircraft during take-off, during the last part of the final approach or during the landing roll.

174.781 Intervals of using full radio call sign

The full call sign must be used when establishing communications. After Established Initial Call May Be To Use Abbreviated Call Signs As the table in 174.775

174.783 The replay for the calls

The reply to the above calls shall be in accordance with mentioned above Type a) Type b) Type c) type d) Designation of the station called GABCD* SPEEDBIRD ABCD* AEROFLOT 321*

Designation of the answering station

NEW YORK RADIO NEW YORK RADIO NEW YORK RADIO

Invitation to proceed with Transmission GO AHEAD GO AHEAD GO AHEAD

* With the exception of the telephony designators and the type of aircraft, each character in the call sign shall be spoken separately. When individual letters are spelled out, the radiotelephony spelling alphabet shall be used. Numbers are to be spoken.

174.783.1

When a station is called but is uncertain of the identification of the calling station, it should reply by transmitting the following: STATION CALLING . . . (station called) SAY AGAIN YOUR CALL SIGN Note.— The following example illustrates the application of this procedure: (CAIRO station replying) STATION CALLING CAIRO (pause) SAY AGAIN YOUR CALL SIGN

174.785 Communications

Communications shall commence with a call and a reply when it is desired to establish contact, except that, when it is certain that the station called will receive the call, the calling station may transmit the message, without waiting for a reply from the station called.

174.787 Abbreviated radiotelephony call signs communication

Abbreviated radiotelephony call signs shall be used only after satisfactory communication has been established and provided that no confusion is likely to arise. An aircraft station shall use its abbreviated call sign only after it has been addressed in this manner by the aeronautical station.

174.789 After contact has been established

After contact has been established, continuous two-way communication shall be permitted without further identification or call until termination of the contact.

174.791 In order to avoid confusion

In order to avoid any possible confusion, when issuing ATC clearances and reading back such clearances, controllers and pilots shall always add the call sign of the aircraft to which the clearance applies.

As the aeronautical station operator generally guards more than one frequency, the call should be followed by an indication of the frequency used, unless other suitable means of identifying the frequency are known to exist

174.791.1 When no confusion is likely to arise, only the first two digits of the High Frequency (in kHz) need be used to identify the transmitting channel.

174.793 Exchange of communications

Communications shall be concise and unambiguous, using standard phraseology whenever available.

174.795 Abbreviated procedures

Should only be used after initial contact has been established and where no confusion is likely to arise.

174.797 Acknowledgement of receipt.

The receiving operator shall make certain that the message has been received correctly before acknowledging receipt.

An aircraft station should acknowledge receipt of important air traffic control messages or parts thereof by reading them back and terminating the readback by its radio call sign

174.799 Contents of acknowledgement

When transmitted by an aircraft station, the acknowledgement of receipt of a message shall comprise the call sign of that aircraft.

174.801 Acknowledgement of receipt.

When acknowledgement of receipt is transmitted by an aeronautical station:

- (a) To an aircraft station: it shall comprise the call sign of the aircraft, followed if considered necessary by the call sign of the aeronautical station;
- (b) To another aeronautical station: it shall comprise the call sign of the aeronautical station that is acknowledging receipt.

It is permissible for verification for the receiving station to read back the message as an additional acknowledgement of receipt. In such instances, the station to which the information is read back should acknowledge the correctness of readback by transmitting its call sign

If both position report and other information — such as weather reports — are received in the same message, the information should be acknowledged with the words such as “WEATHER RECEIVED” after the position report has been read back, except when intercept of the information is required by other network stations. Other messages should be acknowledged, the aeronautical station transmitting its call sign only

174.803 End of conversation.

End of conversation. A radiotelephone conversation shall be terminated by the receiving station using its own call sign.

174.805 Correctness of errors

When an error has been made in transmission, the word “CORRECTION” shall be spoken, the last correct group or phrase repeated, and then the correct version transmitted.

174.807 Correctness of errors

If a correction can best be made by repeating the entire message, the operator shall use the phrase "CORRECTION, I SAY AGAIN" before transmitting the message a second time.

In areas or on routes where radio conditions, length of flights or distance between aeronautical stations require additional measures to ensure continuity of air-ground communication throughout the route segment, the regular stations should share between them a responsibility of primary guard whereby each station will provide the primary guard for that portion of the flight during which the messages from the aircraft can be handled most effectively by that station.

174.809 Correctness of errors

When an operator transmitting a message considers that reception is likely to be difficult, he should transmit the important elements of the message twice.

174.811 Correctness of errors

If the receiving operator is in doubt as to the correctness of the message received, he shall request repetition either in full or in part.

174.813 Correctness of errors

If repetition of an entire message is required, the words "SAY AGAIN" shall be spoken. If repetition of a portion of a message is required, the operator shall state: "SAY AGAIN ALL BEFORE...(first word satisfactorily received)"; or "SAY AGAIN (word before missing portion) TO...(word after missing portion)"; or "SAY AGAIN ALL AFTER...(last word satisfactorily received)".

174.815 Correctness of errors

Specific items should be requested, as appropriate, such as "SAY AGAIN ALTIMETER", "SAY AGAIN WIND".

174.817 Correctness of errors

If, in checking the correctness of a Read back, an operator notices incorrect items, he shall transmit the words "NEGATIVE I SAY AGAIN" at the conclusion of the read back followed by the correct version of the items concerned.

Note:

OPERATIONS NORMAL" REPORTS PANS.— When "operations normal" reports are transmitted by aircraft, they should consist of the prescribed call followed by the words "OPERATIONS NORMAL".

174.818 NETWORK OPERATION (HF COMMUNICATIONS)

The aeronautical stations of a radiotelephony network should assist each other in accordance with the following network principles, in order to provide the air-ground communication service required of the network by aircraft flying on the air routes for which the network is responsible.

When the network comprises a large number of stations, network communications for flights on any individual route segment should be provided by selected stations, termed "regular stations" for that segment.

Note 1.— The selection of stations to act as regular stations for a particular route segment will, where necessary, be undertaken by regional or local agreement, after consultation, if necessary, between the States responsible for the network.

Note 2.— In principle, the regular stations will be those serving the locations immediately concerned with flights on that route segment, i.e. points of take-off and landing,

appropriate flight information centres or area control centres and, in some cases, additional suitably located stations required to complete the communication coverage or for intercept purposes

During its tenure of primary guard, each regular station should, among other things:

- A) be responsible for designating suitable primary and secondary frequencies for its communications with the aircraft;*
- B) b) receive all position reports and handle other messages from and to the aircraft essential to the safe conduct of the flight;*
- C) c) be responsible for the action required in case of failure of communications*

The transfer of primary guard from one station to the next will normally take place at the time of the traversing of flight information region or control area boundaries, this guard being provided at any time, as far as possible, by the station serving the flight information centre or area control centre in whose area the aircraft is flying.

Other stations of the network should render assistance by taking similar action only if attempts to establish communications by the regular stations have proved unsuccessful.

174.818.1

When, notwithstanding the provisions of 174.818, air-ground frequencies are used for the exchange between network stations of messages essential for coordination and cooperation between the stations, such communication should, so far as possible, be effected over network frequencies not being used at that time for the bulk of the air-ground traffic. In all cases, the communication with aircraft stations should take priority over the inter-ground station communications

174.819 Communications watch/ Hours of service during flight

Communications watch/ Hours of service During flight, aircraft stations shall maintain watch as required by the appropriate Authority and shall not cease watch, except for reasons of safety, without informing the aeronautical station(s) concerned.

174.821 Watching hours service

Aeronautical stations shall maintain watch as required by the appropriate Authority.

174.823 Suspension of operation

When it is necessary for an aircraft station or aeronautical station to suspend operation for any reason, it shall, if possible, so inform other stations concerned, giving the time at which it is expected that operation will be resumed. When operation is resumed, other stations concerned shall be so informed.

174.825 Suspension of operation

When it is necessary to suspend operation beyond the time specified in the original notice, a revised time of resumption of operation shall, if possible, be transmitted at or near the time first specified.

174.826 Simultaneously retransmission

When two or more ATS frequencies are being used by a controller, consideration should be given to providing facilities to allow ATS and aircraft transmissions on any of the frequencies to be simultaneously retransmitted on the other frequencies in use thus permitting aircraft stations within range to hear all transmissions to and from the controller.

174.827 Operational frequency for an aircraft

Aircraft stations shall operate on the appropriate radio frequencies.

174.829 Operation frequency for the aeronautical radio station

The air-ground control radio station shall designate the frequency(ies) to be used under normal conditions by aircraft stations operating under its control.

174.829.1 In network operation, the initial designation of primary and secondary frequencies

should be made by the network station with which the aircraft makes pre-flight check or its initial contact after take-off. This station should also ensure that other network stations are advised, as required, of the frequency(ies) designated.

174.831 The consideration for designating radio frequency

An aeronautical station, when designating frequencies should take into account the appropriate propagation data and distance over which communications are required.

174.833 Action be taken if the designated frequency proves unsuitable

If a frequency designated by an aeronautical station proves to be unsuitable, the aircraft station should suggest an alternative frequency.

174.835 Establishment of communications

Aircraft stations shall, if possible, communicate directly with the air-ground control radio station appropriate to the area in which the aircraft are flying. If unable to do so, appropriate aircraft stations shall use any relay means available and to transmit messages to the air-ground control radio station

When, in network operation, communication between an aircraft station and a regular station has not been established after calls on the primary and secondary frequencies, aid should be rendered by one of the other regular stations for that flight, either by calling the attention of the station first called or, in the case of a call made by an aircraft station, by answering the call and taking the traffic.

174.837 In case of communication from aeronautical station cannot be established

When normal communications from an aeronautical station to an aircraft station cannot be established, the aeronautical station shall use any relay means available and appropriate to transmit messages to the aircraft station. If these efforts fail, the originator shall be advised in accordance with procedures prescribed by the appropriate Authority. Other stations of the network should render assistance by taking similar action only if attempts to establish communications by the regular stations have proved unsuccessful.

174.838

The provisions of 174.837 should also be applied:

- a) on request of the air traffic services unit concerned;*
- b) when an expected communication from an aircraft has not been received within a time period such that the occurrence of a communication failure is suspected*

Note.— A specific time period may be prescribed by the appropriate ATS Authority

174.839 Transferred communication

An aircraft station which has transferred communications watch from one radio frequency to another shall, when so required by the appropriate ATS Authority, inform the aeronautical station concerned that communications watch has been established on the new frequency.

174.841 Transferred communication

An aircraft shall be advised by the appropriate aeronautical station to transfer from one radio frequency to another in accordance with agreed procedures. In the absence of such advice, the aircraft station shall notify the appropriate aeronautical station before such a transfer takes place.

In the case of transfer from one network to another, the transfer should preferably take place while the aircraft is in communication with a station operating in both networks to ensure continuity of communications. If, however, the change of network must take place concurrently with the transfer of communication to another network station, the transfer should be coordinated by the two network stations prior to advising or authorizing the frequency change. The aircraft should also be advised of the primary and secondary frequencies to be used after the transfer.

174.843 After establishing initial call

When establishing initial contact on, or when leaving, a VHF frequency, an aircraft station shall transmit such information as may be prescribed by the appropriate Authority.

174.845 Communications failure (Air-ground)

When an aircraft station fails to establish contact with the aeronautical station on the designated frequency, it shall attempt to establish contact on another frequency appropriate to the route. If this attempt fails, the aircraft station shall attempt to establish communication with other aircraft or other aeronautical stations on frequencies appropriate to the route. In addition, an aircraft operating within a network shall monitor the appropriate VHF frequency for calls from nearby aircraft.

174.847 Communications failure -Air-ground

If the attempts specified under ECAR845 fail, the aircraft station shall transmit its message twice on the designated frequency(ies), preceded by the phrase "TRANSMITTING BLIND" and, if necessary, include the addressee(s) for which the message is intended.

174.849 Action be taken in case of an aircraft station unable to establish communication

When an aircraft station is unable to establish communication due to receiver failure, it shall transmit reports at the scheduled times, or positions, on the frequency in use, preceded by the phrase "TRANSMITTING BLIND DUE TO RECEIVER FAILURE". The aircraft station shall transmit the intended message, following this by a complete repetition. During this procedure, the aircraft shall also advise the time of its next intended transmission.

174.851 Action be taken by the pilot in command

An aircraft which is provided with air traffic control or advisory service shall, transmit information regarding the intention of the pilot-in-command with respect to the continuation of the flight of the aircraft.

174.853 Aircraft unable to establish communication

When an aircraft is unable to establish communication due to airborne equipment failure it shall, when so equipped, select the appropriate SSR code to indicate radio failure.

174.855 Ground-to-air communication

When an aeronautical station has been unable to establish contact with an aircraft station after calls on the frequencies on which the aircraft is believed to be listening, it shall

- (a) Request other aeronautical stations to render assistance by calling the aircraft and relaying traffic, if necessary;

- (b) Request aircraft on the route to attempt to establish communication with the aircraft and relay traffic, if necessary.

174.857 Action be taken by the aeronautical station

The provisions 174.855 shall also be applied:

- (a) On request of the air traffic services unit concerned;
- (b) When an expected communication from an aircraft has not been received within a time period such that the occurrence of a communication failure is suspected.

174.859 Blind transmission

If the attempts specified in 174.859 fail, the aeronautical station should transmit messages addressed to the aircraft, other than messages containing air traffic control clearances, by blind transmission on the frequency(ies) on which the aircraft is believed to be listening.

174.861 Blind transmission

Blind transmission of air traffic control clearances shall not be made to aircraft, except at the specific request of the originator.

174.863 Communication failure notification

The air-ground control radio station shall notify the appropriate air traffic services unit and the aircraft operating agency, as soon as possible, of any failure in air-ground communication.

174.865 HF Message Handling

- (a) When operating within a network, an aircraft station should, when communications conditions so permit, transmit its messages to the stations of the network from which they can be most readily deliver to their ultimate destinations.
Exceptionally, an aircraft may need to communicate with an aeronautical station outside the network appropriate to its particular route segment. This is allowable, can be doing without interrupting the continuous watch with the communication network appropriate to the route segment.
- (b) Messages passed from an aircraft to a network station should, whenever possible, intercepted and acknowledged by other stations of the network, which serve locations. Where the information is also required.
- (c) **Acknowledgement of intercept;** Acknowledgement of intercept should be made immediately after the acknowledgement of receipt by the station to which the message was passed.
 - (1) Acknowledgement of an intercept message should made by transmitting the radio call sign of the station having intercepted the message, followed by the word "ROGER" if desired, and the call sign of the station having transmitted the message.
 - (2) The Message of Acknowledgement of Intercept Should Be Made By Transmitting
 - (i) Call Sign of the Station Intercepted The Message
 - (ii) Word (R O G E R)
 - (iii) Call Sign Of The Aircraft
 - (3) In the absence of acknowledgement of intercept within one minute, the station accepting the message from the aircraft should forward it, normally over the aeronautical fixed service, to the station(s), which have failed to acknowledge intercept.
 - (4) If, in abnormal circumstances, forwarding is necessary using the air-ground channels, the provisions of 174.807 should be observed.
- (d) When such forwarding done over the aeronautical fixed telecommunication network, the messages should be address to the network station(s) concerned.
- (e) The station(s) to which the messages have been forwarded should carry out local distribution of them in the same way as if they had been received directly from the aircraft over the air-ground channel

- (f) Recommendation. — When a message addressed to an aircraft in flight is received by the aeronautical station included in the address, and when that station is not able to establish communication with the aircraft to which the message is addressed, the message should be forwarded to those aeronautical stations on the route which may be able to establish communication with the aircraft.

174.867 Forwarding messages to an aircraft in flight

- (a) When a message addressed to an aircraft in flight received by the aeronautical station included in the address, and when that station is not able to establish communication with the aircraft to which the message addressed, the message should be forward to those aeronautical stations on the route, which may be able to establish communication with the aircraft.
- (b) If the aeronautical station to which the message addressed is unable to dispose of the message and the station of origin should be advice.
- (c) The aeronautical station forwarding the message shall amend the address thereof, by substituting for its own location indicator the location indicator of the aeronautical station to which the message forwarded.

174.869 unable to dispose of the message

If the aeronautical station to which the message is addressed is unable to dispose of the message in accordance with 174.865 (f), the station of origin should be advised.

174.871 SELCAL procedures

- (a) general

A single selective call consists of a combination of four pre-selected audio tones whose transmission requires approximately 2 seconds. The tones generated in the aeronautical station coder and received by a decoder connected to the audio output of the airborne receiver. Receipt of the assigned tone code (SELCAL code) activates a cockpit call system in the form of light and/or chime signals

The SELCAL code in the aircraft should be lists against the flight number. In all other cases, the SELCAL code in the aircraft should be lists against the aircraft registration

- (b) The pilot should

The pilot is still able to keep listening watch if required.

- (c) The aircraft should:

- (1) Include the SELCAL code in the flight plan submitted to the appropriate air traffic services unit; and
- (2) Ensure that the HF aeronautical station has the correct SELCAL code information by establishing communicate temporarily with the HF aeronautical station while still within VHF coverage.

- (d) The aircraft operating agency should:

- (1) It is the responsibility of the Aircraft Operating Agency and the aircraft to ensure that all aeronautical stations, with which the aircraft would normally communicate during a particular flight, know the SELCAL code associated with its radiotelephony call sign.
- (2) When practicable, the Aircraft Operating Agency should disseminate (issue) to all aeronautical stations concerned, at regular intervals, a list of SELCAL codes assigned to its aircraft or flights.

- (e) SELCAL Pre-flight check

- (1) The aircraft station should contact the appropriate aeronautical station and request a pre-flight SELCAL check and, if necessary, give its SELCAL code
- (2) When primary and secondary frequencies are assigned, a SELCAL check should normally be made first on the secondary frequency and then on the primary frequency. The aircraft station would then be ready for continue on the primary frequency.

- (3) Should the pre-flight check reveal that either the ground or airborne SELCAL installation is inoperative (U/S) the aircraft should maintain a continuous listening watch on its subsequent flight until SELCAL again becomes available.
 - (f) SELCAL En-route procedures
 - (1) Aircraft stations should ensure that the aeronautical station (CAIRO RADIO) is aware that SELCAL watch is being established or maintained.
 - (2) Once SELCAL watch established by a particular aircraft station, aeronautical stations should employ SELCAL whenever they require calling aircraft.
 - (3) In the event the SELCAL signal remains unanswered after two calls on the primary frequency and two calls on the secondary frequency, the aeronautical station should revert to voice calling.
 - (g) SELCAL procedures
 - (1) When an aeronautical station initiate call by SELCAL the aircraft replies with its call sign followed by phrase "GO AHEAD"
 - (2) When so prescribed on the basis of regional air navigation agreements, calls for scheduled reports from aircraft may be initiated by an aeronautical station by means of SELCAL
 - (3) When a controller or pilot communication via voice the response should be via the CPDLC not applicable in this time.
- NOTE; Cairo aeronautical telecommunication service not use CPDLC
- (4) SELCAL should be utilize by suitably equipped stations for ground-to-air selective calling on the en-route HF and VHF radio channels.
 - (h) When SELCAL is malfunctioning
 - (1) Stations in a network should keep each other immediately advised when malfunctioning (U/S) occurs in a SELCAL installation on the ground or in the air. Likewise, the aircraft should ensure that the aeronautical stations concerned with its flight immediately made aware of any malfunctioning of its SELCAL installation, and that voice calling is necessary.
 - (2) All stations should be notify when the SELCAL installation is again functioning normally.

On aircraft equipped with SELCAL, the pilot is still able to keep a conventional listening watch if required

174.872 TRANSMISSION OF ATS MESSAGES TO AIRCRAFT

If it is not possible to deliver an ATS message to the aircraft within the time specified by ATS, the aeronautical station should notify the originator. Thereafter, it should take no further action with respect to this message unless specifically instructed by ATS

If delivery of an ATS message is uncertain because of inability to secure an acknowledgement, the aeronautical station should assume that the message has not been received by the aircraft and should advise the originator immediately that, although the message has been transmitted, it has not been acknowledged

The aeronautical station, having received the message from ATS, should not delegate to another station the responsibility for delivery of the message to the aircraft. However, in case of communication difficulties, other stations should assist, when requested, in relaying the message to the aircraft. In this case, the station having received the message from ATS should obtain without delay definite assurance that the aircraft has correctly acknowledged the message.

174.873 Distress and urgency messages

Distress and urgency traffic shall comprise all radiotelephony messages relative to the distress and urgency conditions respectively. Distress and urgency conditions are defined as:

- (a) Distress: a condition of being threatened by serious and/or imminent danger and of requiring immediate assistance.
- (b) Urgency: a condition concerning the safety of an aircraft or other vehicle, or of some person on board or within sight, but which does not require immediate assistance.

174.875 Distress and urgency signals

- (a) The radiotelephony distress signal ‘MAYDAY’ shall be used at the commencement of the first distress communication respectively.
- (b) The radiotelephony urgency signal ‘PAN PAN’ should be used at the commencement of the first urgency communication respectively.
- (c) At the commencement of any subsequent communication in distress and urgency traffic, it shall be permissible to use the radiotelephony distress and urgency signals.
- (d) The originator of messages addressed to an aircraft in distress or urgency condition shall restrict to the minimum the number, volume, and content of such messages as required by the condition.

174.877

At the commencement of any subsequent communication in distress and urgency traffic, it shall be permissible to use the radiotelephony distress and urgency signals

174.879 RECORDING OF AIR-GROUND COMMUNICATIONS ON TELETYPEWRITER

When recording on teletypewriter,

the following procedure should be used:

- a) each line should begin at the left margin;*
- b) a new line should be used for each transmission;*
- c) each communication should contain some or all of the following items in the order shown:*
 - 1) call sign of the calling station;*
 - 2) text of the message;*
 - 3) call sign of the station called or the receiving station, followed by the appropriate abbreviation to indicate “Received”, “Readback”, or “No reply heard”;*
 - 4) call sign of station(s) acknowledging intercept followed by appropriate abbreviation to indicate “Received”;*
 - 5) designation of frequency used;*
 - 6) time in UTC of the communication;*
- d) missing parts of the message text should be indicated by typing the three periods (space . space . space) or three letters M (space M space M space M space);*
- e) correction of typing errors should be made by keyboard manipulation (space E space E space E space), followed by the correct information. Errors detected after the completion of the entry should be corrected after the last entry, using the abbreviation COR, followed by the correct information.*

174.881 No acknowledgement

If no acknowledgement of the distress or urgency message is made by the station addressed by the aircraft, other stations shall render assistance.

174.883 Frequencies

Distress and urgency traffic shall normally be maintained on the frequency on which such traffic was initiated until it is considered that better assistance can be provided by transferring that traffic to another frequency.

174.885 Rate of speed for distress and urgency messages

In cases of distress and urgency communications, in general, the transmissions by radiotelephony shall be made slowly and distinctly, each word being clearly pronounced to facilitate transcription.

174.887 Action by the aircraft in distress

In addition to being preceded by the radiotelephony distress signal MAYDAY preferably spoken three times, the distress message to be sent by an aircraft in distress shall:

- (a) Be on the air-ground frequency in use at the time;
- (b) Consist of as many as possible of the following elements Spoken distinctly and, if possible, in the following order:
 - (1) Name of the station addressed (time and Circumstances permitting);
 - (2) The identification of the aircraft;
 - (3) The nature of the distress condition;
 - (4) Intention of the person in command;
 - (5) Present position, level (i.e. flight level, altitude, etc., as appropriate) and heading.

174.889 First station acknowledging the distress

The station addressed by aircraft in distress, or first station acknowledging the distress message, shall:

- (a) Immediately acknowledge the distress message;
- (b) Take control of the communications or specifically and clearly transfer that responsibility, advising the aircraft if
- (c) Transfer is made;
- (d) Take immediate action to ensure that all necessary information is made available, as soon as possible, to:
 - (1) The ATS unit concerned;
 - (2) The aircraft operating agency concerned, or its representative, in accordance with pre-established arrangements.

174.891 Imposition of silence

The station in distress, or the station in control of distress traffic, shall be permitted to impose silence, either on all stations of the mobile service in the area or on any station which interferes with the distress traffic. It shall address these instructions “to all stations”, or to one station only, according to circumstances. In either case, it shall use:

-STOP TRANSMITTI

-the radiotelephony distress signal MAYDAY

174.893 Station using the distress and urgency signals

The use of the signals MAY DAY or PAN PAN shall be reserved for the aircraft station in distress and for the station controlling the distress traffic.

174.895 Distress message

Action by all other stations The distress communications have absolute priority over all other communications, and a station aware of them shall not transmit on the frequency concerned, unless:

- (a) The distress is cancelled or the distress traffic is terminated;
- (b) All distress traffic has been transferred to other frequencies;
- (c) The station controlling communications gives permission;
- (d) It has itself to render assistance.

174.897 Station acknowledging the distress

Any station which has knowledge of distress is being provided. traffic, and which cannot itself assist the station in distress, shall nevertheless continue listening to such traffic until it is evident that assistance.

174.899 Termination of distress communications

Termination of distress communications and of silence: When an aircraft is no longer in distress, it shall transmit a message cancelling the distress condition.

174.901 Station controlled the distress communication

When the station which has controlled the distress communication traffic becomes aware that the distress condition is ended, it shall take immediate action to ensure that this information is made available, as soon as possible, to:

- (a) The ATS unit concerned;
- (b) The aircraft operating agency concerned, or its representative, in accordance with pre-established arrangements.

174.903 Silence conditions

The distress communication and silence conditions shall be terminated by transmitting a message, including the words “DISTRESS TRAFFIC ENDED”, on the frequency or frequencies being used for the distress traffic. This message shall be originated only by the station controlling the communications when, after the reception of the message it is authorized to do so by the appropriate authority.

174.905 Aircraft reporting the urgency condition

In addition to being preceded by the radiotelephony urgency signal PAN PAN preferably spoken three times and each word of the group pronounced as the French word “pane”, the urgency message to be sent by an aircraft reporting an urgency condition shall:

- (a) Be on the air-ground frequency in use at the time; terminated;
- (b) Consist of as many as required of the following elements spoken distinctly and, if possible, in the following order:
 - (1) The name of the station addressed;
 - (2) The identification of the aircraft;
 - (3) The nature of the urgency condition;
 - (4) The intention of the person in command;
 - (5) Present position, level (i.e. flight level, altitude, etc., as appropriate) and heading; and
 - (6) Any other useful information.

174.907 Action by the station addressed or first station acknowledging the urgency message

The station addressed by an aircraft reporting an urgency condition, or first station Acknowledging the urgency message, shall:

- (a) Acknowledge the urgency message;
- (b) Take immediate action to ensure that all necessary information is made available, as soon as possible, to:
 - (1) The ATS unit concerned;
 - (2) The aircraft operating agency concerned, or its representative, in accordance with pre-established arrangements;
- (c) If necessary, exercise control of communications.

174.909 Action by all other stations

The urgency communications have priority overall other communications, except distress, and all stations shall take care not to interfere with the transmission of urgency traffic.

174.911 Action by an aircraft used for medical transport

The use of the signal shall indicate that the message which follows concerns a protected medical transport pursuant to the 1949 Geneva Conventions and Additional Protocols.

174.913 Announcing and identifying the medical transport

For the purpose of announcing and identifying aircraft used for medical transports, a transmission of the radiotelephony urgency signal PAN PAN, preferably spoken three times, and each word of the group pronounced as the French word “panne”, shall be followed by the radiotelephony signal for medical transports MAY-DEE-CAL, pronounced as in the French “medical”. The use of the signals described above indicates

that the message which follows concerns a protected medical transport. The message shall convey the following data:

- (a) The call sign or other recognized means of identification of the medical transports;
- (b) Position of the medical transports;
- (c) Number and type of medical transports;
- (d) Intended route.
- (e) Estimated time en route and of departure and arrival, as appropriate; and
- (f) Any other information such as flight altitude, radio frequencies guarded, languages used, and secondary surveillance radar modes and codes.

174.915 Action by the station addressed or by other stations receiving medical transport

Action by the station addressed or by other stations receiving a medical transports message shall apply as appropriate to stations receiving a medical transports message

174.917 Communications related to acts of unlawful interference

The station addressed by an aircraft being subjected to an act of unlawful interference, or first station acknowledging a call from such aircraft, shall render all possible assistance, including notification of appropriate ATS units as well as any other station, agency or person in a position to facilitate the flight.

174.919 Broadcast material

- (a) The text of broadcast material shall be prepared by the originator in the form desired for transmission.
- (b) Telecommunications facilities between meteorological offices and aeronautical telecommunications stations should permit: (annex 3 .11.1.5)
 - (1) Communications by direct speech, the speed with which the communications can be established being such that the required points may normally be contacted within approximately 15 seconds; and
 - (2) Printed communications, when a record is required by the recipients; the message transit time should not exceed 5 minutes. "5 minutes" refers to printed communications involving retransmission. (8896 6.1)
- (c) Data link-VOLMET (D-VOLMET).Provision of current aerodrome routine meteorological reports (METAR) and aerodrome special meteorological reports (SPECI), aerodrome forecasts (TAF), SIGMET, special air-reports not covered by a SIGMET and, where available, AIRMET via data link.
- (d) The text of broadcast material shall prepared by the originator in the form desired for transmission.
- (e) Broadcasts shall be made on specified frequencies and at specified times .
- (f) Continuous VOLMET broadcasts, normally on very high frequencies (VHF), shall contain current METAR and SPECI, together with trend forecasts where available. (Annex 10 ii Annex 3 11.6.1)
- (g) Telecommunications facilities between meteorological offices and aeronautical telecommunications stations should permit: (annex 3 11.1.5)
 - (1) Communications by direct speech, the speed with which the communications can be established being such that the required points may normally be contacted within approximately 15 seconds; and
 - (2) Printed communications, when a record required by the recipients; the message transit time should not exceed 5 minutes. "5 minutes" refers to printed communications involving retransmission.
 - (3) Schedules and the frequencies of all broadcasts shall publish. In addition, any changes in frequencies or the time should publish by NOTAM at least two weeks in advance of change. In addition, such changes shall announced on all regular broadcast for 84 hours preceding the changes, shall be transmitted once at the beginning and once at the end of each broadcast.
 - (4) In case of voice broadcast by the microphone it's should be started at the scheduled time by the general call "ALL STATIONS" and if the broadcast must be delayed a short notice shall be transmitted at the scheduled time by advising the recipients to "STAND BY" and by stating the approximate number of

minutes of delay. In addition, the broadcast shall start until the end of the standby period.

- (5) *Where broadcasts are conducted on a time-allotment basis, transmission shall be terminated by each station promptly at the end of the allotted time period whether or not transmission of all material has been completed.*
- (6) *In sequential collective type broadcasts each station shall be ready to commence its broadcasts at the designated time. If for any reason a station does not commence its broadcast at the designated time, the station immediately following in sequence shall wait and then commence its broadcast at its own designated time.*
- (7)

In the event of interruption of service at the station responsible for a broadcast, the broadcast shall, if possible, be made by another station until normal service is resumed. If this is not possible, and the broadcast is of the type intended for interception by fixed stations, the stations which are required to copy the broadcasts shall continue to listen on the specified frequencies until normal service is resumed.

174.919.1 Broadcast technique

Transmissions by radiotelephone shall be as natural, short and concise as practicable consistent with clarity.

174.919.2 Rate of speech on radiotelephone broadcasts

shall not exceed 100 words per minute.

174.919.3 Preamble of the general call

The preamble of each radiotelephone broadcast shall consist of the general call, station name, and optionally the time of broadcast (UTC).

Note.— The following example illustrates the application of this procedure:

(general call) ALL STATIONS (the words THIS IS)

THIS IS (station name) NEW YORK RADIO

(time of broadcast) TIME, ZERO ZERO FOUR FIVE

174.921 Frequencies and schedules

Broadcasts shall be made on specified frequencies and at specified times.

174.923 Schedules and frequencies of all broadcasts

Schedules and frequencies of all broadcasts shall be publicized in appropriate documents. Any change in frequencies or times shall be publicized by NOTAM at least two weeks in advance of the change. Additionally, any such change shall, if practicable, be announced on all regular broadcasts for 48 hours preceding the change and shall be transmitted once at the beginning and once at the end of each broadcast.*

174.925 Scheduled broadcasts

Scheduled broadcasts (other than sequential collective type broadcasts), shall be started at the scheduled time by the general call. If a broadcast must be delayed, a short notice shall be transmitted at the scheduled time advising recipients to “stand by” and stating the approximate number of minutes of delay

174.927 After definite advice

After definite advice has been given to stand by for a certain period, the broadcast shall not be started until the end of the standby period.

174.929 – 174.939:- (RESERVED)

174.941 Broadcast Technique

- (a) *Transmissions by radiotelephone shall be as natural, short and concise as practicable consistent with clarity.*
- (b) *Rate of speech on radiotelephone broadcasts shall not exceed 100 words per minute.*

174.943 Preamble Of The General Call

The preamble of each radiotelephone broadcast shall consist of the general call, station name, and optionally the time of broadcast (UTC).

Note. — The following example illustrates the application of this procedure:

- (a) General call " ALL STATIONS"
- (b) The words " THIS IS"
- (c) The station name "CAIRO RADIO"
- (d) Time of broadcasting "Time ZERO ZERO TWO ZERO"

174.945 Data Type Identifier

FT – Aerodrome Forecasts valid up to 24hours	(TAF)
FC - Aerodrome Forecasts valid up to 12hours	(TAF)
SA - Routine Meteorological reports	(METAR)
SP - Special Meteorological reports	(SPECI)
WS - for significant MET	(SIGMET)

174.947 D-VOLMET System

(a) Description

- (1) This system decodes incoming weather data, converts it into expanded text and finally into a high quality natural voice ready for broadcast. Errors originating in the incoming data are flagged and optionally logged, and the operator is able to correct the error before broadcast if required. The operator can also perform a vocabulary search if missing words or errors found.
- (2) The latest available METAR, SPECI, TAF, valid SIGMET and AIRMET should use for uplink to aircraft in flight.
- (3) TAF Included in the D VOLMET should amend as necessary to ensure that a forecast, when made available for uplink to aircraft in flight, reflects the latest opinion of the meteorological office concerned.
- (4) If no SIGMET message is valid for a flight information region, an indication of should be included in the D VOLMET “Nil SIGMET”

(b) Compositions

The VOLMET consists of pc connected to master and standby server in the equipment room connected to the AFTN circuit with CAIRO AMSC.

(c) Operation

Broadcasting the following aerodromes in sequence on the frequency 126.2 MHz HECA HEGN HESH HELX HESN HEAX HEBA LCLK LGAV OLBA OSDI HLLB HSSS OEJN

- (1) To ensure that VOLMET is operating correctly by three steps:-
 - (i) The aerodromes on the display screen are blinking. And/or
 - (ii) Listen to the broadcast on the speakers.
 - (iii) The broadcast status show online.
- (2) From option of parameter to ensure, that rate of speech not exceeds more than 100 words per minute.
- (3) Do not let any aerodrome broadcast [NIL REPORT] by obtaining it from OPMET of Vienna data bank or by phone from meteorological office specially Cairo and domestics aerodromes.
- (4) Call the maintenance sector if [SEVER DATA LINK FAILURE] observed at main screen.
- (5) The operator should have a good knowledge about the items that may intercepted by the system and need to correct such as component of weather report and forecasts.
- (6) In case of suspension, both of master and standby units after 30mnts of Suspension Should send a service message to Cairo NOTAM office with

expected time of resumed normal operation (expected time of RNM should be by coordinate.

- (7) With maintenance, sector responsible.

174.949 Aeronautical Mobile Service Data Link Communications

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- (a) Require implementation to HF data link in the next upgrading, to keep more availability of communication in CAIRO FIR according to VHF communication GAPS provided by the telecommunication engineering .And according to the doc 9869 radio communication performance aircraft manufacturers and operators, the RCP type is specified by the value for the communication transaction time associated with the ATM function.
- (b) An RCP type comprises values assigned to the following parameters: communication transaction time, Continuity, availability and integrity.
- (c) RCP type parameters
- (d) Communication transaction time. The maximum time for the completion of the operational communication transaction after which the initiator should revert to an alternative procedure.
 - (1) **Continuity.** The probability that an operational communication transaction can be completed within the communication transaction time
 - (2) **Availability.** The probability that an operational communication transaction can initiate when needed.
 - (3) **Integrity.** The probability of one or more undetected errors in a completed communication transaction.