



**MEMORANDUM CIRCULAR NO.: 021-2023**

**TO : ALL CONCERNED**

**FROM : THE DIRECTOR GENERAL**

**SUBJECT : AMENDMENT 5 TO PHILIPPINE CIVIL AVIATION  
REGULATIONS - AIR NAVIGATION SERVICES (CAR-ANS)  
PART 2 AERONAUTICAL TELECOMMUNICATIONS,  
COMMUNICATION PROCEDURES WITH PANS STATUS**

**REFERENCE:**

1. Philippine Civil Aviation Regulations- Air Navigation Services Part 2
2. ICAO Annex 10 Aeronautical Telecommunications, Vol. II  
Communication Procedures including those with PANS Status
3. CAAP Regulations Amendment Procedures
4. Board Resolution No. 2012-054 dated 28 September 2012

Pursuant to the powers vested in me under the Republic Act 9497, otherwise known as the Civil Aviation Authority Act of 2008 and in accordance with the Board Resolution No.: 2012-054 dated 28 September 2012, I hereby approve the following amendments to the Philippine Civil Aviation Regulations – Air Navigation Services (CAR-ANS) Part 2.

**ORIGINAL REGULATION SUBJECT FOR REVIEW AND REVISION:**

**CIVIL AVIATION REGULATIONS – AIR NAVIGATION SERVICES PART 2**



**CIVIL AVIATION REGULATIONS  
AIR NAVIGATION SERVICES  
PART 2  
COMMUNICATION PROCEDURES  
WITH PANS STATUS**

## FOREWORD

~~This Civil Aviation Regulations Air Navigation Services (CAR-ANS) Part 2 was formulated and issued by the Civil Aviation Authority of the Philippines (CAAP), prescribing guidelines governing the administrative procedure applicable to the operating facilities of the air traffic system within the Manila Flight Information Region (FIR). It is envisioned to assist Air Traffic Services (ATS) personnel in the efficient and effective management of their respective facilities.~~

~~This CAR-ANS Part 2 was developed based on the Standards and Recommended Practices prescribed by the International Civil Aviation Organization (ICAO) Annex 10 Volume II—Communication Procedures including those with Provisions of Air Navigation Service (PANS) status and other ICAO-related documents which comprises the basic principles in aeronautical telecommunications and aimed particularly as a guidance in exercising operational functions of the Air Traffic Services in their respective facilities as well as aircraft operators management including crews.~~

~~The procedures embodied herein are issued by authority of the Director General of the CAAP and will be complied with by all concerned.~~

~~As used in the Civil Aviation Regulations Air Navigation Services Part 2, “Appropriate Authority” means the Director General of the Civil Aviation Authority of the Philippines.~~

Pursuant to the provisions of Article 37 of the convention of International Civil Aviation, the Civil Aviation Authority of the Philippines (CAAP) formulated and issued this Civil Aviation Regulations-Air Navigation Services Part 2 (CAR-ANS Part 2), establishing rules and regulations relating to Aeronautical Telecommunications Communication Procedures with PANS Status.

This CAR-ANS Part 2 was also developed based on the Standards and Recommended Practices prescribed by the International Civil Aviation Organization (ICAO) as contained in Annex 10, Aeronautical Telecommunications Vol. II – Communication Procedures including those with PANS Status.

Article 38 of the Convention imposed an obligation to the CAAP to notify ICAO of any differences between its national regulations and practices and the International Standards contained in Annex 10 Vol. II and any amendments thereto, especially when such differences are important for the safety of air navigation.

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**2.1 I. PURPOSE** This Civil Aviation Regulations-Air Navigation Services (CAR-ANS) Part 2 provides procedures for aeronautical telecommunications service within the Manila Flight Information Region.

**2.2 II. AUTHORITY** The regulations and procedures contained herein are issued by authority of the Director General of the Civil Aviation Authority of the Philippines and shall be complied with by all concerned. As used in this Civil Aviation Regulation, “Authority” refers to the Civil Aviation Authority of the Philippines pursuant to the Republic Act 9497 also known as the Civil Aviation Authority of the Philippines Act of 2008.

**2.3 III. APPLICABILITY** The procedures embodied herein shall apply to all Air Traffic Service facilities and airspace users within the Manila Flight Information Region.

**IV. REPEALING PROVISIONS** All previous Administrative Orders, Memorandum Circulars or part thereof as they pertain to Communication Procedures with PANS Status which are inconsistent with the provisions of this Civil Aviation Regulation are hereby repealed, amended or modified accordingly.

**V. SEPARABILITY PROVISIONS** The provisions of this Civil Aviation Regulation are hereby declared separable. If any portion thereof shall be held invalid or unconstitutional, such invalidity or unconstitutionality shall not affect the other provisions which shall be in full force and effect.

**VI. DISTRIBUTION** This Civil Aviation Regulation will be distributed to all air traffic services providers.

## **2.1 DEFINITIONS, ABBREVIATIONS, RULES OF CONSTRUCTION & AMENDMENT/REVISION TO CAR-ANS PART 2**

When the following terms are used in this publication, they have the following meanings prescribed in this Sub—Part:

*Note 1.— A list of additional specialized communication terms and their definitions that is contained in Attachment 2A will be added in the Definition of this CAR-ANS.*

*Note 2.— All references to “Radio Regulations” are to the Radio Regulations published by the International Telecommunication Union (ITU). Radio Regulations are amended from time to time by the decisions embodied in the Final Acts of World Radiocommunication Conferences held normally every two to three years. Further information on the ITU processes as they relate to aeronautical radio system frequency use is contained in the Handbook on Radio Frequency Spectrum Requirements for Civil Aviation including statement of approved ICAO policies (ICAO Document 9718).*

### **~~2.4.1~~ 2.1.1.1 Services**

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### **~~2.4.2~~ 2.1.1.2 Stations**

**Aeronautical station (RR SI.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 or an earth satellite.

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**AFTN destination station.** An AFTN station to which messages and/or digital data are addressed for processing for delivery to the addressee.

**AFTN entry-exit points.** Centers through which AFTN traffic entering and leaving an ICAO Air Navigation Region should flow.

**AFTN group.** Three or more radio stations in the aeronautical fixed telecommunications network exchanging communications on the same radio frequency.

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**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.

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**Communication ~~centre~~ center.** An aeronautical fixed station which relays or retransmits telecommunication traffic from (or to) a number of other aeronautical fixed stations directly connected to it.

**General purpose system (GP).** Air-ground radiotelephony facilities providing for all categories of traffic listed in 2.81.8.

*Note.— In this system communication is normally indirect, i.e. exchanged through the intermediary of a third person.*

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#### **2.4.3 2.1.1.3 Communication Methods**

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**Broadcast.** A transmission of information relating to air navigation that is not addressed to a specific station or stations.

**Channel.** A single means of direct fixed service communication between two points.

**Circuit.** A communication system which includes all the direct AFTN channels between two points.

**Double channel simplex.** Simplex using two frequency channels one in each direction.

*Note.— This method was sometimes referred to as cross band.*

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**Non-network communications.** Radiotelephony communications conducted by a station of the aeronautical mobile service, other than those conducted as part of a radiotelephony network.

**Offset frequency simplex.** A variation of single channel simplex wherein telecommunication between two stations is effected by using in each direction frequencies that are intentionally slightly different but contained within a portion of the spectrum allotted for the operation.

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**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; and*

*c) offset frequency simplex.*

**Single channel simplex.** Simplex using the same frequency channel in each direction.

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#### **2.4.4 2.1.1.4 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.

**Incoming circuit responsibility list.** A list, for each incoming circuit of a communication center, of the location indicators for which relay responsibilities are to be accepted in respect of messages arriving on that circuit.

**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.

**Relay time.** The relay time of a COM center is the elapsed time between the instant that a message has been completely received at that center and the instant that it has been completely retransmitted on an outgoing circuit.

**Route (AFTN).** The path followed by a particular channel of a circuit.

**Routing (AFTN).** The chosen itinerary to be followed by messages on the AFTN between acceptance and delivery.

**Routing List.** A list in a communication center indicating for each addressee the outgoing circuit to be used.

**Transit time.** The elapsed time between the instant of filing a message with an AFTN station for transmission on the network, and the instant that it is made available to the addressee.

## **2.4.5 2.1.1.5 Teletypewriter Systems**

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## **2.4.6 2.1.1.6 Agencies**

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## **2.4.7 2.1.1.7 Frequencies**

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## **2.4.8 2.1.1.8 Data Link Communications**

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## **2.4.9 2.1.1.9 Miscellaneous**

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## **2.1.2 ACRONYMS & ABBREVIATIONS**

ADS-C	Automatic Dependent Surveillance Contract
AFS	Aeronautical Fixed Service
AFTN	Aeronautical Fixed Telecommunication Network
AIDC	ATS Interfacility Data Communication
AIS	Aeronautical Information Services
ATMHS	ATS Message Handling Services
ATN	Aeronautical Telecommunication Network
ATS	Air Traffic Services



ATSMHS	ATS Message Handling Services
ATSUs	ATS units
CAAP	Civil Aviation Authority of the Philippines
CAR-ANS	Civil Aviation Regulations-Air Navigation Services
CIDIN	Common ICAO Data Interchange Network
CPDLC	Controller-Pilot Data Link Communications
CPDLC	CONTROLLER-PILOT DATA LINK COMMUNICATIONS
DLIC	Data Link Initiation Capability
FIR	Flight Information Region
GOLD	Global Operational Data Link
HF	High Frequency
hPa	Hectopascals
ICAO	International Civil Aviation Organization
ICC	Inter-Centre Communications
ICS	Internet Communication Service
ISP	International Standardized Profiles
ITA	International Telegraph Alphabet
ITU	International Telecommunication Union
MOS-ATS	Manual of Standards for Air Traffic Service
MSL	Mean Sea Level
NOTAM	Notice to Airmen
ODF	Optional Data Field
PANS	Provisions of Air Navigation Service
PBCS	Performance-based Communication and Surveillance
PCAR	Philippine Civil Aviation Regulations
PDAIs	Predetermined Distribution Addressee Indicators
RVR	Runway Visual Range
SATVOICE	SATELLITE VOICE COMMUNICATIONS
SATVOICE	Satellite Voice Communications

SELCAL	Selective Calling
TAFs	Terminal Aerodrome Forecasts
UTC	Coordinated Universal Time
VHF	Very High Frequency

### 2.1.3 RULES OF CONSTRUCTION

#### Terminology

Through this regulation the following word usage applies:

- a) ***Shall*** indicate a mandatory requirement.
- b) ***May*** indicates that discretion can be used when performing an act described in a regulation.
- c) ***Will*** indicates an action incumbent upon the Authority.

### 2.1.4 Amendment/Revision to CAR-ANS Part 2

Proposals for any amendment or revision to CAR-ANS Part 2 shall be submitted to the Technical Working Group (TWG) of the Air Traffic Management Safety Inspectorate Division (ATMSID). Whether it is an ICAO Annex 10 Vol. II adopted amendment or any amendment or revision initiated by CAAP or by any other aviation stakeholders, the ATMSID TWG shall submit the deliberated proposal to the Regulations Review Committee (RRC) for furtherance.

The RRC shall be composed of the Director General, the Chiefs of Offices of the Flight Standards Inspectorate Service (FSIS), the Aerodrome and Air Navigation Safety Oversight Office (AANSOO), Air Traffic Services (ATS), Air Navigation Service (ANS), Aerodrome Development and Management Service (ADMS), the International Civil Aviation Coordinating Staff (ICACS), Enforcement and Legal Service (ELS), and representative from State Safety Programme Office (SSPO).

The Chairman of the RRC shall be the Director General or his authorized representative and the Vice Chairman for CAR -ANS Part 2 related matters shall be the Chief of AANSOO. The Secretariat of the RRC on matters concerning CAR-ANS Part 2 shall be the current Chief of the Regulatory Safety Standards Division (RSSD) of AANSOO.

The RRC shall follow the procedures prescribed in the Regulations Amendment/ Revision Procedure (RAP) in deciding on the amendment or revision to or any other proposals associated with it. Once the amendment or revision is reviewed and endorsed by the RRC for the approval of the Director General, it shall be published in the Official Gazette of the Philippines or in a newspaper of general circulation. A copy of this published amendment/revision to regulations must be filed to the U.P. Law Center - Office of the National Administrative Register (UP-ONAR).

The Chairman of the RRC shall convene the committee for a meeting or at the instance of the Chairman or Vice-Chairman and follow the Internal Rules of Procedures prescribed in the RAP.

## **~~2.5~~ 2.2 ADMINISTRATIVE PROVISION RELATING TO THE INTERNATIONAL AERONAUTICAL TELECOMMUNICATION SERVICE**

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*Editorial Note:- Renumbering of the entire Chapter 2.5 to 2.2.*

### **~~2.5.4~~ 2.2.4 Supervision**

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~~2.5.2.4.1~~ 2.2.4.1 The ~~Competent~~ ATS Authority or his/her designated authorized representative shall be responsible for ensuring that the aeronautical telecommunication service is conducted in accordance with the Procedures in this CAR-ANS.

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~~2.5.4.3~~ 2.2.4.3 When a station commits serious or repeated infringements, representations relating to them shall be made to the authority designated in ~~2.5.4.1~~ 2.2.4.1.

~~2.5.4.4~~ 2.2.4.4 The authorities designated in ~~2.5.4.1~~ 2.2.4.1 shall exchange information regarding the performance of systems of communication, radio navigation, operation and maintenance, unusual transmission phenomena, etc.

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## **~~2.6~~ 2.3 GENERAL PROCEDURES FOR THE INTERNATIONAL AERONAUTICAL TELECOMMUNICATION SERVICE**

*Editorial Note:- Renumbering of the entire Chapter 2.6 to 2.3.*

### **~~2.6.1~~ 2.3.1 General**

The procedures outlined in this Sub - Part are general in character and shall be applied where appropriate to the other Sub - Parts contained in this ~~Administrative Order~~ CAR-ANS.

*Note.— Detailed procedures, with special application to the service concerned, are contained in ~~Sup-~~ CAR-ANS Parts 7, 8, 9,10 and 11.*

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### **~~2.6.3~~ 2.3.3 Acceptance, Transmission and Delivery of Messages**

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~~2.6.3.1~~ 2.3.3.1 Only those messages coming within the categories specified in ~~2.7.4.1.1~~ 2.4.4.1.1 shall be accepted for transmission by the aeronautical telecommunication service.

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~~2.6.3.2.1~~ 2.3.3.2.1 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, however, to the provisions prescribed in ~~2.7.4.3.1.2.3~~ 2.4.4.3.1.2.3.

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~~2.6.3.7~~ 2.3.3.7 Messages originated in the aeronautical mobile service by an aircraft in flight and which require transmission over the aeronautical fixed telecommunication network to effect delivery, shall be reprocessed by the aeronautical telecommunication station into the message format prescribed in ~~2.7.4.2~~ 2.4.4.2 prior to transmission on the AFTN.

~~2.6.3.7.1~~ 2.3.3.7.1 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 format prescribed in ~~2.7.4.2~~ 2.4.4.2 except where, subject to the provisions of ~~2.6.3.5~~, 2.3.3.5, prior and other arrangements have been made between the aeronautical telecommunication agency



and the aircraft operating agency concerned for predetermined distribution of messages from aircraft.

~~2.6.3.3.7.4~~ 2.3.3.7.4 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 are transmitted by the aeronautical stations, are contained in the ICAO PANS-ATM (~~Doc 4444~~) Manual of Standards for Air Traffic Service (MOS-ATS).*

~~2.6.3.7.5~~ 2.3.3.7.5 When air-reports in AIREP form are to be retransmitted by telegraphy (including teletypewriting), the text transmitted shall be as recorded in compliance with ~~2.6.3.7.4.2.3.3.7.4.~~

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## ~~2.6.7~~ 2.3.7 Use of Abbreviations and Codes

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~~2.6.3.7.1.1~~ 2.3.7.1.1 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.

*Note.— The use of ICAO approved abbreviations and codes wherever appropriate — for example, those contained in ICAO PANS-ABC (ICAO Document 8400) — obviates the need for application of the provisions of ~~2.6.3.7.1.1.~~*

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## ~~2.7~~ 2.4 AERONAUTICAL FIXED SERVICE (AFS)

*Editorial Note:- Renumbering of the entire Chapter 2.7 to 2.4.*

### ~~2.7.1~~ 2.4.1 General

~~2.7.1.1~~ 2.4.1.1 The aeronautical fixed service shall comprise the following systems and applications that are used for ground-ground (i.e. point-to-point and/or point-to-multipoint) communications in the international aeronautical telecommunication on service:

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*Note 1.- Provisions relating to ATS direct speech communications are contained in ~~2.7.2.~~ 2.4.2.*

*Note 2.- Provisions relating to meteorological operational channels and meteorological operational telecommunication networks are contained in ~~2.7.3.~~ 2.4.3.*

*Note 3.- The AFTN provides a store-and-forward messaging service for the conveyance of text messages in ITA-2 or IA-5 format, using character-oriented procedures. Provisions relating to the AFTN are contained in ~~2.7.4.~~ 2.4.4.*

*Note 4.- The CIDIN provides a common transport service for the conveyance of binary or text application messages, in support of the AFTN and OPMET applications. Procedural provisions relating to the CIDIN are contained in ~~2.7.5.~~ 2.4.5.*

*Note 5.- The ATS (air traffic services) message handling services (ATSMHS) application allows ATS messages to be exchanged between service users over the aeronautical telecommunication*

network (ATN) internet communication service (ICS). Procedural provisions relating to ATS message handling services are contained in ~~2.7.6.~~ 2.4.6.

Note 6.- The inter-~~centre~~ center communications applications enable the exchange of information between air traffic service units over the aeronautical telecommunication network (AW) internet communication service (ICS), in support of notification, coordination, transfer of control, flight planning airspace management and air traffic flow management. Procedural provisions relating to inter-~~centre~~ center communications are contained in ~~2.7.7.~~ 2.4.7.

Note 7.- The aeronautical telecommunication network through its ATSMHS and ICC applications enable the transition of existing AFTN and CIDIN users and systems into the ATN architecture.

#### ~~2.7.1.2~~ 2.4.1.2 Material permitted in AFS messages

Note.— The provisions contained in ~~2.7.1.2~~ 2.4.1.2 do not apply to ATS voice communications.

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~~2.7.1.2.2~~ 2.4.1.2.2 For the exchange of messages over the teletypewriter circuits, the following signals of the International Telegraph Alphabet No. 2 (ITA-2) shall be permitted:

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Note 2.- When using any of the above signals, account is to be taken of, amongst others, the provisions of ~~2.7.4.5.3.~~ 2.4.4.5.3.

Note 3.- The foregoing provisions of ~~2.7.1.2.2~~ 2.4.1.2.2 are not intended to prevent the use of:

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b) figure case of signal no. 10 as the priority alarm (see ~~2.7.4.4.3~~ 2.4.4.4.3); and

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~~2.7.1.2.5~~ 2.4.1.2.5 Messages using the ITA-2 code shall not contain:

1) any uninterrupted sequence of signals nos. 26, 3, 26 and 3 (letter case and figure case) in this order, other than the one in the heading as prescribed in ~~2.7.4.2.1.1~~ 2.4.4.2.1.1; and

2) any uninterrupted sequence of four times signal no. 14 (letter case and figure case) other than the one in the ending as prescribed in ~~2.7.4.6.1~~ 2.4.4.6.1.

~~2.7.1.2.6~~ 2.4.1.2.6 Messages using IA-5 shall not contain:

1) character 0/1 (SOH) other than the one in the heading as prescribed in ~~2.7.4.15.1.1~~ 2.4.4.15.1.1.2 a);

2) character 0/2 (STX) other than the one in the origin line as prescribed in ~~2.7.4.15.2.2.7~~ 2.4.4.15.2.2.7;

3) character 0/3 (ETX) other than the one in the ending as prescribed in ~~2.7.4.15.3.12.1~~ 2.4.4.15.3.12.1;

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~~2.7.1.2.7~~ 2.4.1.2.7 The text of messages shall be drafted in plain language or in abbreviations and codes, as prescribed in ~~2.6.7~~ 2.4.7. 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.

2.7.4.2.8 2.4.1.2.8 If the originator of a message wishes alignment functions [ $\leq$ ] to be transmitted at specific places in the text part of such message (see 2.7.4.5.3 2.4.4.5.3 and 2.7.4.15.3.6 2.4.4.15.3.6), the sequence [ $\leq$ ] shall be written on each of those places.

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#### 2.7.4 2.4.4 Aeronautical Fixed Telecommunication Network (AFTN)

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2.7.4.4.5.7 The text of the messages entered by the AFTN origin station shall not exceed 1,800 characters in length.

*Note 1.— Where it is desired that a communication with a text exceeding 1,800 characters be transmitted over the aeronautical fixed telecommunication network, 2.7.4.4.5.7 requires that such a communication be entered by the AFTN origin station in the form of separate messages, each text of which does not exceed 1,800 characters. Guidance material for forming separate messages from a single long message is given in ~~Attachment B of this Manual~~ Advisory Circular AC-AFTN-ATM-01-23.*

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2.7.4.1.1 2.4.4.1.1 *Categories of messages.* Subject to the provisions of 2.6.3 2.3.3, the following categories of message are handled by the aeronautical fixed telecommunication network:

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2.7.4.1.1.9.1 2.4.4.1.1.9.1 Service messages shall be prepared in the format prescribed in 2.7.4.2 2.4.4.2 or 2.7.4.12 2.4.4.12. In applying the provisions of 2.7.4.3.1.2 2.4.4.3.1.2 or 2.7.4.15.2.1.3 2.4.4.15.2.1.3 to service messages addressed to an aeronautical fixed station identified only by a location indicator, this indicator shall be immediately followed by the ICAO three-letter designator YFY, followed by an appropriate 8th letter.

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2.7.4.1.1.9.7 2.4.4.1.1.9.7 When a service message refers to a message previously handled, reference to the previous message shall be made by use of the appropriate transmission identification (see 2.7.4.2.1.1 2.4.4.2.1.1 b) and 2.7.4.15.1.1 2.4.4.15.1.1 b)) or the filing time and originator indicator groups (see 2.7.4.4 2.4.4.4 and 2.7.4.15.2.2 2.4.4.15.2.2) identifying the reference message.

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2.7.4.1.3.2 2.4.4.1.3.2 Predetermined diversion routing arrangements shall be made, when necessary, to expedite the movement of communication traffic. Each communication ~~centre~~ center shall have the appropriate diversion routing lists, agreed to by the Administration(s) operating the communication ~~centres~~ center affected and use them when necessary.

2.7.4.1.3.2.1 2.4.4.1.3.2.1 Diversion routing shall be initiated:

1) in a fully automatic communication ~~centre~~ center:

a) immediately after detection of the circuit outage, when the traffic is to be diverted via a fully automatic communication ~~centre~~ center;

b) within a 10-minute period after detection of the circuit outage, when the traffic is to be diverted via a non-fully automatic communication ~~centre~~ center;

2) in a non-fully automatic communication ~~centre~~ center within a 10-minute period after detection of the circuit outage.

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~~2.7.4.1.4.1.1~~ 2.4.4.1.4.1.1 When the receiving station detects that one or more channel sequence numbers are missing, it shall send a complete service message (*see 2.7.4.1.1.9 2.4.4.1.1.9*) 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 (*see 2.7.4.2.1.1.3 2.4.4.2.1.1.3 and 2.7.4.15.1.1.4 2.4.4.15.1.1.4*) and the end of-text signal (*see 2.7.4.5.6 2.4.4.5.6 and 2.7.4.15.3.12 2.4.4.15.3.12*).

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~~2.7.4.1.4.1.1.1~~ 2.4.4.1.4.1.1.1 When the provisions of ~~2.7.4.1.4.1.1~~ 2.4.4.1.4.1.1 are applied, 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 retransmit that message (or those messages) with a new (correct in sequence) transmission identification. The receiving station shall synchronize such that the next expected channel-sequence number is the last received channel-sequence number plus one.

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~~2.7.4.1.4.1.2.1~~ 2.4.4.1.4.1.2.1 When the provisions of ~~2.7.4.1.4.1.2~~ 2.4.4.1.4.1.2 are applied, the station receiving the out-of sequence message shall synchronize such that the next expected channel-sequence number is the last received channel-sequence number plus one. The previous station shall check its outgoing channel sequence numbers and, if necessary, correct the sequence.

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~~2.7.4.1.4.2.1~~ 2.4.4.1.4.2.1 When the receiving station detects that a message has been misrouted to it, it shall either:

1) send a service message (*see 2.7.4.1.1.9 2.4.4.1.1.9*) to the previous station rejecting receipt of the misrouted message; or

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~~2.7.4.1.4.2.2~~ 2.4.4.1.4.2.2 When the provisions of ~~2.7.4.1.4.2.1~~ 2.4.4.1.4.2.1, 1) are applied, the text of the service message shall comprise the abbreviation SVC, the signal QTA, the procedure signal MSR followed by the transmission identification (*see 2.7.4.2.1.1.3 2.4.4.2.1.1.3 and 2.7.4.15.1.1.4 2.4.4.15.1.1.4*) of the misrouted message and the end-of-text signal (*see 2.7.4.5.6 2.4.4.5.6 and 2.7.4.15.3.12 2.4.4.15.3.12*).

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~~2.7.4.1.4.2.3~~ 2.4.4.1.4.2.3 When, as a result of the provisions of ~~2.7.4.1.4.2.2~~ 2.4.4.1.4.2.2, a sending station is notified of the misrouted message condition by service message, it shall re-assume its responsibility for the message and shall retransmit as necessary on the correct outgoing channel or channels.

~~2.7.4.1.4.3~~ 2.4.4.1.4.3 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 (*see 2.7.4.1.1.9 2.4.4.1.1.9*) with the text comprising the abbreviation SVC, the procedure signals LR and LS followed by the transmission identifications of the relevant messages and the end-of-text signal (*see 2.7.4.5.6 2.4.4.5.6 and 2.7.4.15.3.12 2.4.4.15.3.12*).

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~~2.7.4.1.6.3~~ 2.4.4.1.6.3 AFTN communication ~~centres~~ centers shall retain, for a period of at least 30 days, a record containing the information necessary to identify all messages relayed or retransmitted and the action taken thereon.

...

~~2.7.4.1.7.1~~ 2.4.4.1.7.1 Except as provided in ~~2.7.4.1.7.2~~ 2.4.4.1.7.2, AFTN communication ~~centres~~ centers shall retain, for a period of at least one hour, a copy of all messages, in their entirety, retransmitted or relayed by that communication ~~centre~~ center.

~~2.7.4.1.7.2~~ 2.4.4.1.7.2 In cases where acknowledgment is made between AFTN communication ~~centres~~ centers, a relay ~~centre~~ center shall be considered as having no further responsibility for retransmission or repetition of a message for which it has received positive acknowledgment, and it may be deleted from its records.

...

~~2.7.4.2~~ 2.4.4.2 Message format — International Telegraph Alphabet No. 2 (ITA-2)

All messages, other than those prescribed in ~~2.7.4.1.8~~ 2.4.4.1.8 and ~~2.7.4.9.3~~ 2.4.4.9.3 shall comprise the components specified in ~~2.7.4.2.1~~ 2.4.4.2.1 to ~~2.7.4.6.1~~ 2.4.4.6.1 inclusive.

...

~~2.7.4.2.1.2~~ 2.4.4.2.1.2 In teletypewriter operation, the spacing signal, consisting of 5 SPACES [→→→→→] followed by 1 LETTER SHIFT [↓], shall be transmitted immediately following the transmission identification prescribed in ~~2.7.4.2.1.1.3~~ 2.4.4.2.1.1.3.

*Note.— The examples appearing below illustrate the application of the transmission identification Standard (see ~~2.7.4.2.1.1~~ 2.4.4.2.1.1 b) and ~~2.7.4.2.1.1.3~~ 2.4.4.2.1.1.3):*

...

~~2.7.4.2.1.4~~ 2.4.4.2.1.4 To avoid any misinterpretation of the diversion indicator especially 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) shall not appear in any other component of the heading.

...

#### **Figure 2.74-1. Message format ITA-2**

*(The above illustrates the teletypewriter message format prescribed in ~~2.7.4.2~~ 2.4.4.2 to ~~2.7.4.9.1~~ 2.4.4.9.1 inclusive)*

...

~~2.7.4.3.1.2.1~~ 2.4.4.3.1.2.1 Where a message is to be addressed to an organization that has not been allocated an ICAO three-letter designator of the type prescribed in ~~2.7.4.3.1.2~~ 2.4.4.3.1.2, 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 of the text of the message. The eighth position letter following the ICAO three-letter designator YYY or YXY shall be the filler letter X.

~~2.7.4.3.1.2.2~~ 2.4.4.3.1.2.2 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 X.

*Note.— The following examples illustrate application of the Standards in ~~2.7.4.3.1.2.1~~ 2.4.4.3.1.2.1 and ~~2.7.4.3.1.2.2~~ 2.4.4.3.1.2.2:*

...

~~2.7.4.3.1.2.3~~ 2.4.4.3.1.2.3 The complete address shall be restricted to three lines of page printing copy and, except as provided in ~~2.7.4.14~~ 2.4.4.14, a separate addressee indicator shall be used for each addressee whether at the same or at different locations.

~~2.7.4.3.1.2.3.1~~ 2.4.4.3.1.2.3.1 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 message shall be converted, before transmission, into two or more messages, each of which shall conform with the provisions of ~~2.7.4.3.1.2.3~~ 2.4.4.3.1.2.3. 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~~ centers.

...

~~2.7.4.4.1~~ 2.4.4.4.1 The filing time shall comprise the 6-digit date time group indicating the date and time of filing the message for transmission (*see* ~~2.6.4.2~~ 2.3.4.2); in teletypewriter operation, the filing time shall be followed by one LETTER SHIFT [↓].

...

~~2.7.4.4.2.1~~ 2.4.4.4.2.1 Where a message is originated by an organization that has not been allocated an ICAO three-letter designator of the type prescribed in ~~2.7.4.4.2~~ 2.4.4.4.2 b), 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 in 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.

...

~~2.7.4.4.2.3~~ 2.4.4.4.2.3 Messages relayed over the AFTN that have been originated in other networks shall use a valid AFTN originator indicator that has been agreed for use by the relay or gateway function linking the AFTN with the external network.

*Note.— The following illustrates the application of ~~2.7.4.4.2.2~~ 2.4.4.4.2.2 procedure as it would appear with a message from aircraft PAL153 addressed to the Area Control ~~Centre~~ Center at RPHI, the message being handled via aeronautical station RPHI. The heading and ending of the message are not shown in this example of teletypewriter page-copy form:*

~~2.7.4.4.3~~ 2.4.4.4.3 The priority alarm shall be used only for distress messages. When used, it shall consist of the following, in the order stated:

...

*Note 2.— Use of the priority SS alarm will actuate a bell (attention) signal at the receiving teletypewriter station, other than at those fully automatic stations which may provide a similar alarm on receipt of priority indicator SS, thereby alerting supervisory personnel at relay ~~centres~~ centers and operators at tributary stations, so that immediate attention may be given to the message.*

...

~~2.7.4.5.1~~ 2.4.4.5.1 The text of messages shall be drafted in accordance with ~~2.7.1.2~~ 2.4.1.2.

~~2.7.4.5.2~~ 2.4.4.5.2 When an originator's reference is used, it shall appear at the beginning of the text, except as provided in ~~2.7.4.5.2.1~~ 2.4.4.5.2.1 and ~~2.7.4.5.2.2~~ 2.4.4.5.2.2.

~~2.7.4.5.2.1~~ 2.4.4.5.2.1 When the ICAO three-letter designators YXY, YYY or ZZZ comprise the second element of the addressee indicator (*see* ~~2.7.4.3.1.2.1~~ 2.4.4.3.1.2.1 and ~~2.7.4.3.1.2.2~~ 2.4.4.3.1.2.2) and it, therefore, becomes necessary to identify in the text the specific addressee



of the message, such identification group will precede the originator's reference (if used) and become the first item of the text.

~~2.7.4.5.2.2~~ 2.4.4.5.2.2 When the ICAO three-letter designators YXY, YYY or ZZZ comprise the second element of the originator indicator (*see* ~~2.7.4.4.2.1~~ 2.4.4.4.2.1 and ~~2.7.4.4.2.2~~ 2.4.4.4.2.2) 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.

~~2.7.4.5.2.3~~ 2.4.4.5.2.3 When applying the provisions of ~~2.7.4.5.2.1~~ 2.4.4.5.2.1 and ~~2.7.4.5.2.2~~ 2.4.4.5.2.2 to messages where the ICAO three-letter 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, 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 these identifications to precede the remainder of the text wording.

~~2.7.4.5.3~~ 2.4.4.5.3 An alignment function [ $\leq$ ] shall be transmitted at the end of each printed line of the text except for the last (*see* ~~2.7.4.5.6~~ 2.4.4.5.6).

...

~~2.7.4.5.7~~ 2.4.4.5.7 The text of the messages entered by the AFTN origin station shall not exceed 1,800 characters in length.

*Note 1.— Where it is desired that a communication with a text exceeding 1,800 characters be transmitted over the aeronautical fixed telecommunication network, ~~2.7.4.5.7~~ 2.4.4.5.7 requires that such a communication be entered by the AFTN origin station in the form of separate messages, each text of which does not exceed 1,800 characters. Guidance material for forming separate messages from a single long message is given in Attachment B of this Manual.*

...

~~2.7.4.6.1~~ 2.4.4.6.1 The ending shall comprise:

...

c) the message-separation signal, consisting of a LETTER SHIFT [↓] transmitted 12 times in uninterrupted sequence.

...

*Note 2.— The following illustrates the procedures specified in ~~2.7.4.2~~ 2.4.4.2 to ~~2.7.4.6.1~~ 2.4.4.6.1 inclusive for a message in page-copy form:*

...

~~2.7.4.7.1~~ 2.4.4.7.1 In "torn-tape" installations, and in "semi-automatic" installations using continuous tape technique, when signals additional to those prescribed in ~~2.7.4.6.1~~ 2.4.4.6.1 are required to ensure that the tape is adequately advanced from the reperforator at the receiving stations, when the ending of one message is not followed immediately by the start-of-message signal of another message, local arrangements shall be made at the receiving station to avoid the need for transmission of these signals by the transmitting station.

...

~~2.7.4.7.1.1~~ 2.4.4.7.1.1 When the provisions of ~~2.7.4.7.1~~ 2.4.4.7.1 cannot be applied, arrangements shall be made with the transmitting station for the latter to send, at the end of a single message, or following the last message of a series, an agreed number of LETTER SHIFTS [↓] in addition to the components prescribed in ~~2.7.4.6~~ 2.4.4.6.

#### 2.7.4.8 2.4.4.8 Stripped address

When applying the provisions of ~~2.7.4.3~~ 2.4.4.3 or ~~2.7.4.15.2.1~~ 2.4.4.15.2.1, an AFTN communication ~~centre~~ center shall omit from the address all the addressee indicators not required for:

...

~~2.7.4.9.3~~ 2.4.4.9.3 *Channel-check transmissions*. Except as provided in ~~2.7.4.9.3.3~~ 2.4.4.9.3.3 and ~~2.7.4.9.3.5~~ 2.4.4.9.3.5 the following periodic transmissions shall be sent on teletypewriter circuits:

1) heading (*see* ~~2.7.4.2.1.1~~ 2.4.4.2.1.1);

...

~~2.7.4.9.3.1~~ 2.4.4.9.3.1 Where a circuit is unoccupied, the transmission specified in ~~2.7.4.9.3~~ 2.4.4.9.3 shall be sent at H + 00, H + 20, H + 40.

...

~~2.7.4.9.3.3~~ 2.4.4.9.3.3 When a teletypewriter channel is equipped with a system of controlled circuit protocol, and following agreement between the Administrations responsible, the transmission specified in ~~2.7.4.9.3~~ 2.4.4.9.3 shall not be made.

~~2.7.4.9.3.4~~ 2.4.4.9.3.4 *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 ~~2.7.4.9.3~~ 2.4.4.9.3. In this case the combined transmission shall be sent as follows:

1) heading (*see* ~~2.7.4.2.1.1~~ 2.4.4.2.1.1);

...

~~2.7.4.9.3.5~~ 2.4.4.9.3.5 When a teletypewriter circuit is associated with Automatic Error Correction (ARQ) equipment, and following agreement between the Administrations responsible, the transmissions specified in ~~2.7.4.9.3~~ 2.4.4.9.3 need not be made: however stations employing radio teletypewriter channels on the AFTN for which the station radio identification is required, shall comply with the provisions of ~~2.7.4.9.3.4~~ 2.4.4.9.3.4.

...

~~2.7.4.10.1~~ 2.4.4.10.1 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 (*see also* ~~2.7.4.1.3~~ 2.4.4.1.3 and ~~2.7.4.1.5.2.3~~ 2.4.4.1.5.2.3).

~~2.7.4.10.1.1~~ 2.4.4.10.1.1 Arising from the responsibility agreements established under the provisions of ~~2.7.4.9.1~~ 2.4.4.9.1, each station of the AFTN shall employ and, subject to the provisions of ~~2.7.4.9.1.1.1~~ 2.4.4.9.1.1.1, adhere to a Routing Directory which consists of the Routing List.

~~2.7.4.10.1.1.1~~ 2.4.4.10.1.1.1 When an incoming message contains only identical location indicators 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 retransmitted over the circuit from which it was received, without prior

service message (*see* 2.7.4.1.1.9 2.4.4.1.1.9) notification of this action being given to the station that had made the previous transmission.

2.7.4.10.1.1.2 2.4.4.10.1.1.2 An AFTN message originator not capable of handling service messages shall agree with the AFTN centre center it is connected to on a method of exchanging service messages.

*Note.*— A method of specifying service address in the optional data field is shown in 2.7.4.4.4.1 2.4.4.4.4.1 and 2.7.4.4.4.1.1 2.4.4.4.4.1.1.

2.7.4.10.1.2 2.4.4.10.1.2 *Form of transmission — teletypewriter operation.*

All transmissions shall comprise in the following order (*see* Figure 2.74-2).

...

**Figure 2.74-2. Form of transmission – teletypewriter operation**  
(*see* 2.7.4.10.1.2 2.4.4.10.1.2)

...

2.7.4.10.1.3 2.4.4.10.1.3 *Message format.* All messages shall be prepared in accordance with the provisions of 2.7.4.2 2.4.4.2 (ITA-2 format) or 2.7.4.15 2.4.4.15 (IA-5 format).

2.7.4.4.10.1.3.1 The Heading Line, with the exception of the SOH character, shall be omitted on circuits employing one of the data link control procedures contained in 7.8.6.3 and 7.8.6.4 of ICAO Annex 10, Volume III CAR-ANS Part 7.

...

2.7.4.10.1.4.1.1 2.4.4.10.1.4.1.1 When applying the provisions of 2.7.4.10.1.4.1 2.4.4.10.1.4.1, transmission of the address part of the message shall commence at some point during the 5 SPACES, 1 LETTER SHIFT [→→→→→↓] immediately preceding the first alignment function [≤≡].

...

2.7.4.10.1.4.2 2.4.4.10.1.4.2 At a “torn-tape” station, the incoming tapes shall be torn at a position in the message-separation signal component (*see* 2.7.4.6.1 2.4.4.6.1 and 2.7.4.7.1 2.4.4.7.1) so that the preceding end-of-message signal remains intact.

2.7.4.10.1.4.2.1 2.4.4.10.1.4.2.1 Following application of the provisions of 2.7.4.10.1.4.2 2.4.4.10.1.4.2, the shortened (i.e. less than 12 LETTER SHIFTS [↓]) message separation signal remaining on the message tape shall be deleted, if necessary by electronic methods, before retransmission to an automatic relay installation. If the retransmission is to another “torntape” station then:

...

2) the shortened message-separation signal remaining on the tape shall be removed and a new and complete message separation signal shall be added to the message in the process of retransmission in accordance with the provisions of 2.7.4.6.1 2.4.4.6.1 c).

...

2.7.4.10.1.6 2.4.4.10.1.6 *Acknowledgment of receipt of messages.* In teletypewriter operation and except as provided in 2.7.4.9.1.5.1 2.4.4.9.1.5.1, a receiving station shall not transmit acknowledgment of receipt of incoming messages. In lieu thereof the provisions of 2.7.4.1.4.1 2.4.4.1.4.1 shall be applied.

2.7.4.10.1.6.1 2.4.4.10.1.6.1 The receipt of distress messages (priority SS— *see* 2.7.4.1.1.1 2.4.4.1.1.1) shall be individually acknowledged by the AFTN destination station sending a service message (*see* 2.7.4.1.1.9 2.4.4.1.1.9) to the AFTN origin station. Such acknowledgment

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 2.7.4.4.3 2.4.4.4.3*) and shall have a text comprising:

...

2) the origin (*see 2.7.4.4 2.4.4.4*), without priority alarm, or optional heading information of the message being acknowledged;

...

~~2.7.4.11.1~~ 2.4.4.11.1 If, before retransmission is commenced, a relay station detects that a message has been mutilated or improperly formatted at some point ahead of the end-of-message signal, and it has reason to believe that this mutilation had occurred before the message had been received by the previous station, it shall send a service message (*see 2.7.4.1.1.9 2.4.4.1.1.9*) to the originator as identified by the originator indicator in the origin of the mutilated or improperly formatted message, requesting repetition of the incorrectly received message.

...

~~2.7.4.11.2~~ 2.4.4.11.2 When the provisions of ~~2.7.4.11.1~~ 2.4.4.11.1 are applied, the originator as identified by the originator indicator in the origin of the mutilated message, and shall comply with the provisions of ~~2.7.4.11.3~~ 2.4.4.11.3.

~~2.7.4.11.3~~ 2.4.4.11.3 Following application of the provisions of ~~2.7.4.11.2~~ 2.4.4.11.2, the following reprocessing shall be accomplished before the un mutilated version of the message is transmitted for the second time towards the same addressee or addressees:

...

2) *remove* the ending of the message (*see 2.7.4.6.1 2.4.4.6.1*);

3) *insert* in lieu thereof the procedure signal DUPE, preceded by at least 1 LETTER SHIFT [↓] and followed by 1 CARRIAGE RETURN, 8 LINE FEEDS, end-of-message signal and, if necessary (*see 2.7.4.6 2.4.4.6*), the LETTER SHIFTS [↓] of the message-separation signal and tape feed.

*Note.— The example appearing in Figure 2.7-3 2.4-3 illustrates the application of this procedure.*

...

#### **Figure 2.7-3. 2.4-3 Example of application of ~~2.7.4.11.3~~ 2.4.4.11.3 procedure**

~~2.7.4.11.4~~ 2.4.4.11.4 If, 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 (*see 2.7.4.1.1.9 2.4.4.1.1.9*) to the previous station rejecting the mutilated transmission and requesting a repetition of the incorrectly received message (or messages).

...

~~2.7.4.11.5~~ 2.4.4.11.5 When the provisions of ~~2.7.4.11.4~~ 2.4.4.11.4 are applied, the station receiving the service message shall re-assume responsibility for the referenced message. It must then retransmit the un mutilated copy of the referenced message with a new (i.e. correct in sequence) transmission identification (*see 2.7.4.2.1.1-2.4.4.2.1.1 b*). If that station is not in possession of an un mutilated copy of the original message, it shall take the action prescribed in ~~2.7.4.11.1~~ 2.4.4.11.1.

...

~~2.7.4.11.7~~ 2.4.4.11.7 If, during retransmission of a message, a relay station detects that the message has been mutilated at some point ahead of the end-of-message signal and is able to take action before a correct end-of-message signal has been transmitted, it shall:

...

3) comply with the provisions of ~~2.7.4.11.1~~ 2.4.4.11.1 or ~~2.7.4.11.4~~ 2.4.4.11.4 as appropriate.

...

~~2.7.4.11.11~~ 2.4.4.11.11 Relay stations applying the procedural provisions of ~~2.7.4.11.9~~ 2.4.4.11.9 or ~~2.7.4.11.10~~ 2.4.4.11.10 shall, 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.

...

~~2.7.4.11.13~~ 2.4.4.11.13 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 (*see* ~~2.7.4.8~~ 2.4.4.8).

~~2.7.4.11.13.1~~ 2.4.4.11.13.1 In addition, except as in ~~2.7.4.11.13.3~~ 2.4.4.11.13.3, the station shall send a service message to the previous station requesting correction of the error. The text of this service message shall comprise:

...

9) the end-of-text signal.

*Note.— The following examples illustrate the application of the procedure of ~~2.7.4.11.13.1~~ 2.4.4.11.13.1:*

...

~~2.7.4.11.13.2~~ 2.4.4.11.13.2 A station receiving a service message as prescribed in ~~2.7.4.11.13.1~~ 2.4.4.11.13.1 shall, if a correct addressee indicator is available, repeat the message to that addressee only using the stripped address procedure (*see* ~~2.7.4.8~~ 2.4.4.8) or, if a correct addressee indicator is not available, act as prescribed in ~~2.7.4.11.13.1~~ 2.4.4.11.13.1.

~~2.7.4.11.13.3~~ 2.4.4.11.13.3 Where the procedure of ~~2.7.4.11.13~~ 2.4.4.11.13 is applied 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:

...

~~2.7.4.11.13.4~~ 2.4.4.11.13.4 A station receiving such a service message shall obtain a correct addressee indicator and shall repeat the message to the addressee using the stripped address procedure (*see* ~~2.7.4.8~~ 2.4.4.8).

...

~~2.7.4.11.14.2~~ 2.4.4.11.14.2 The station receiving a service message as prescribed in ~~2.7.4.11.14.1~~ 2.4.4.11.14.1 shall re assume responsibility for the referenced message and shall retransmit the message with a correct origin line and a new transmission identification.

...

*Note.— When applying the provisions of ~~2.7.4.11.14~~ 2.4.4.11.14, the minimum requirements for processing the origin of AFTN messages are:*

...

~~2.7.4.11.15.2~~ 2.4.4.11.15.2 The station receiving a service message as prescribed in ~~2.7.4.11.15.1~~ 2.4.4.11.15.1 shall resume responsibility for the referenced message and shall retransmit the message with a correct originator indicator and, if applicable, a new transmission identification.

*Note.*— When applying the provisions of ~~2.7.4.11.15~~ 2.4.4.11.15 the relay ~~centre~~ center requirement is as a minimum the first character of the originator indicator verified as the first character of the location indicator of the place at which the message is originated.

...

~~2.7.4.12.4~~ 2.4.4.12.4 Where the action of ~~2.7.4.12.3~~ 2.4.4.12.3 is not possible, correction to the text shall be made immediately after the error by making the error sign ( $\rightarrow E \rightarrow E \rightarrow E \rightarrow$ ), transmitting the last correct word or group and then continuing with the tape preparation.

~~2.7.4.12.5~~ 2.4.4.12.5 Where neither the action of ~~2.7.4.12.3~~ 2.4.4.12.3 nor the action of ~~2.7.4.12.4~~ 2.4.4.12.4 is possible because the error in the text is not noticed until later in the preparation process (but before the end-of-message signal has been added) the station shall comply with the provisions of ~~2.7.4.5.5~~ 2.4.4.5.5.

...

~~2.7.4.13.2~~ 2.4.4.13.2 Where an error is made, in this circumstance, in any part of the message which precedes the text, the unfinished message shall be cancelled by sending the sequence  $\downarrow \Leftarrow QTA \rightarrow QTA \downarrow \Leftarrow$  followed by a complete ending (see ~~2.7.4.6~~ 2.4.4.6).

...

~~2.7.4.13.4~~ 2.4.4.13.4 In cases where errors are made in the text and not noticed until later in the origination process, the station shall comply with the provisions of ~~2.7.4.5.5~~ 2.4.4.5.5.

~~2.7.4.13.5~~ 2.4.4.13.5 In cases where it becomes obvious, during the origination of the text, that the message should be cancelled, the station shall take the action described in ~~2.7.4.13.2~~ 2.4.4.13.2.

...

~~2.7.4.4.14.2~~ The Predetermined Distribution Addressee Indicator (PDAI) shall be constructed as follows:

...

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 the *Procedures for Air Navigation Services—Aeronautical Information Management* (PANS AIM, Doc 10066)) MOS-AIS;

...

~~2.7.4.14.4~~ 2.4.4.14.4 AFTN messages carrying Predetermined 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 ~~2.7.4.11.5~~ 2.4.4.11.5.

...

~~2.7.4.4.15~~ 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) the format described in ~~2.7.4.12~~ 2.4.4.12 through ~~2.7.4.12.3~~ 2.4.4.12.3 shall be used. It is the responsibility of Administrations using IA-5 to accommodate adjacent AFTN stations employing ITA-2 code in the format described in ~~2.7.4.2~~ 2.4.4.2.

All messages, other than those prescribed in ~~2.7.4.1.8~~ 2.4.4.1.8 and ~~2.7.4.8.3~~ 2.4.4.8.3 shall comprise the components specified in ~~2.7.4.12.1~~ 2.4.4.12.1 to ~~2.7.4.12.6~~ 2.4.4.12.6 inclusive.

...

*Note 2.*— In the subsequent standards relative to message format the following symbols have been used in making reference to the functions assigned to certain signals in IA-5. (See ~~ICAO Annex 10 Volume III, Part I, 8.6.1 and Tables 2.8-2 and 2.8-3~~. See CAR-ANS Part 7, 7.8.6.1.1 and Tables 7.8-2 and 7.8-3)

...



~~2.7.4.15.1.1.2~~ 2.4.4.15.1.1.2 Except as provided in ~~2.7.4.12.1.1.3~~ 2.4.4.12.1.1.3 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 another. A separate series of these numbers shall be assigned for each channel and a new series shall be started daily at 0000 hours.

...

~~2.7.4.15.1.1.5~~ 2.4.4.15.1.1.5 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 the information in ~~2.7.4.12.1.1.4~~ 2.4.4.12.1.1.4 shall be followed immediately by that of ~~2.7.4.12.2~~ 2.4.4.12.2.

...

~~2.7.4.15.2.1.2~~ 2.4.4.15.2.1.2 The order of priority shall be the same as specified in ~~2.7.4.1.2~~ 2.4.4.1.2.

...

~~2.7.4.15.2.1.3.1~~ 2.4.4.15.2.1.3.1 Where a message is to be addressed to an organization that has not been allocated an ICAO three-letter designator of the type prescribed in ~~2.7.4.12.2.1.3~~ 2.4.4.12.2.1.3 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 X.

...

#### **Figure 2.74-4. Message format International Alphabet no.5 (IA-5)**

(The above illustrates the teletypewriter message format described in ~~2.7.4.15~~ 2.4.4.15)

...

~~2.7.4.15.2.1.4~~ 2.4.4.15.2.1.4 The complete address shall be restricted to three lines of page printing copy, and, except as provided in ~~2.7.4.16~~ 2.4.4.16, a separate addressee indicator shall be used for each addressee whether at the same or different locations.

...

~~2.7.15.2.1.6~~ 2.4.15.2.1.6 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 with the provisions of ~~2.7.4.12.2.1.5~~ 2.4.4.12.2.1.5. 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~~ centers.

...

~~2.7.4.15.2.2.1~~ 2.4.4.15.2.2.1 The filing time shall comprise the 6-digit date-time group indicating the date and time of filing the message for transmission (*see* ~~2.7.4.2~~ 2.4.4.2).

...

~~2.7.4.15.2.2.3~~ 2.4.4.15.2.2.3 Where a message is originated by an organization that has not been allocated an ICAO three-letter designator of the type prescribed in ~~2.7.4.12.2.2.2~~ 2.4.4.12.2.2.2, 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 in 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.

...

~~2.7.4.15.3.1~~ 2.4.4.15.3.1 The text of messages shall be drafted in accordance with ~~2.7.1.2~~ 2.4.1.2 and shall consist of all data between STX and ETX.

*Note.— When message texts do not require conversion to the ITA-2 code and format and do not conflict with ICAO message types or formats in ICAO PANSATM (ICAO Doc 4444) MOS-ATS, Administrations may make full use of the characters available in International Alphabet No. 5 (IA-5).*

~~2.7.4.15.3.2~~ 2.4.4.15.3.2 When an originator's reference is used, it shall appear at the beginning of the text, except as provided in ~~2.7.4.15.3.3~~ 2.4.4.15.3.3 and ~~2.7.4.15.3.4~~ 2.4.4.15.3.4.

~~2.7.4.15.3.3~~ 2.4.4.15.3.3 When the ICAO three-letter designators YXY, YYY or ZZZ comprise the second element of the addressee indicator (*see* ~~2.7.4.12.2.1.3.1~~ 2.4.4.12.2.1.3.1 and ~~2.7.4.12.2.1.3.2~~ 2.4.4.12.2.1.3.2) 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.

~~2.7.4.15.3.4~~ 2.4.4.15.3.4 When the ICAO three-letter designators YXY, YYY or ZZZ comprise the second element of the originator indicator (*see* ~~2.7.4.12.2.2.3~~ 2.4.4.12.2.2.3 and ~~2.7.4.12.2.2.4~~ 2.4.4.12.2.2.4) 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.

~~2.7.4.15.3.5~~ 2.4.4.15.3.5 When applying the provisions of ~~2.7.4.12.3.3~~ 2.4.4.12.3.3 and ~~2.7.4.12.3.4~~ 2.4.4.12.3.4 to messages 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.

...

~~2.7.4.15.4~~ 2.4.4.15.4 Except as provided in ~~2.7.4.15.5~~ 2.4.4.15.5 to ~~2.7.4.15.6~~ 2.4.4.15.6 and ~~2.7.4.16~~ 2.4.4.16, the procedures of ~~2.7.4.8~~ 2.4.4.8 and ~~2.7.4.9~~ 2.4.4.9 to ~~2.7.4.13~~ 2.4.4.13 shall be used for messages using IA-5 code.

...

~~2.7.4.15.5.1~~ 2.4.4.15.5.1 Where a circuit is unoccupied and uncontrolled, the transmission identified in ~~2.7.4.15.5~~ 2.4.4.15.5 shall be sent at H + 00, H + 20, H + 40.

~~2.7.4.15.6~~ 2.4.4.15.6 The receipt of distress messages (priority indicator SS, *see* ~~2.7.4.1.1.1~~ 2.4.4.1.1.1) shall be individually acknowledged by the AFTN destination station by sending a service message (*see* ~~2.7.4.1.1.9~~ 2.4.4.1.1.9) to the AFTN origin station. Such acknowledgment 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* ~~2.7.4.12.2.2.5~~ 2.4.4.12.2.2.5), and shall have a text comprising:

...

2) the origin line (*see* ~~2.7.4.15.2.2~~ 2.4.4.15.2.2) without priority alarm, or optional heading information of the message being acknowledged;

3) the ending (*see 2.7.4.15.3.12.1 2.4.4.15.3.12.1*).

...

~~2.7.4.16.2.2~~ 2.4.4.16.2.2 When the provisions of ~~2.7.4.16.2.1~~ 2.4.4.16.2.1 are applied, the station receiving the service message shall re assume responsibility for the referenced message with a new (i.e. correct in sequence) transmission identification (*see 2.7.4.15.2.1 2.4.4.15.2.1*). If that station is not in possession of an unmutated 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.

...

~~2.7.4.17.1~~ 2.4.4.17.1 Except as provided in ~~2.7.4.17.3~~ 2.4.4.17.3 the heading line of the message shall be omitted. The message shall start with an alignment function followed by the address.

...

~~2.7.4.17.3.1~~ 2.4.4.17.3.1 When the provisions of ~~2.7.4.17.3~~ 2.4.4.17.3 are applied, the data added shall not include either carriage return or line feed characters or any of the combinations listed in ~~2.7.1.2.4~~ 2.4.1.2.4.

...

## **2.7.4.6 ATS Message Handling Services (ATSMHS)**

...

*Note 2.— The detailed specification of the ATS message handling service application is included in the Manual on Detailed Technical Specifications for the Aeronautical Telecommunication Network (ATN) using ISO/OSI Standards and Protocols (ICAO Document 9880), Part II.*

*Note 3.— The ATS message service is provided by the implementation over the ATN internet communication service of the message handling systems specified in ISO/IEC (International Organization for Standardization/International Electrotechnical Commission) 10021 and ITU-T (International Telecommunication Union — Telecommunication Standardization Sector) X.400 and complemented by the additional requirements specified in the Manual on Detailed Technical Specifications for the Aeronautical Telecommunication Network (ATN) using ISO/OSI Standards and Protocols (ICAO Document 9880), Part II. The two sets of documents, the ISO/IEC MOTIS (Message-Oriented Text Interchange System) International Standards and the ITU-T X.400 Series of Recommendations (1988 or later) are, in principle, aligned with each other. However, there are a small number of differences. In the above-mentioned document, reference is made to the relevant ISO International Standards and International Standardized Profiles (ISP), where applicable. Where necessary, e.g. for reasons of interworking or to point out differences, reference is also made to the relevant X.400 Recommendations.*

*Note 4.— The following types of ATN end systems performing ATS message handling services are defined in the Manual on Detailed Technical Specifications for the Aeronautical Telecommunication Network (ATN) using ISO/OSI Standards and Protocols (ICAO Document 9880), Part II:*

...

### **Table 2.74-1. Communications between ATN end systems implementing ATS message handling services**

...

## **2.8 2.5 AERONAUTICAL MOBILE SERVICE VOICE COMMUNICATIONS**

*Editorial Note:- Renumbering of the entire Chapter 2.8 to 2.5.*

### 2.8.5.1 General

...

*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 (ICAO Document 9925). Additional guidance for satellite voice communications (SATVOICE) is contained in the Satellite Voice Operations Manual (ICAO Document 10038) and the Performance based Communication and Surveillance (PBCS) Manual (ICAO Document 9869).*

...

2.8.5.1.1.1 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.

*Note.— Detailed language proficiency requirements appear in the Appendix 1 to Annex 1 PCAR Part 2, IS 2.2.7.*

~~2.8.1.1.2~~ 2.5.1.1.2 The transmission of messages, other than those specified in ~~2.8.1.8~~ 2.5.1.8, on aeronautical mobile frequencies when the aeronautical fixed services are able to serve the intended purpose, shall be avoided.

...

~~2.8.1.4~~ 2.5.1.4 Except as otherwise provided, the responsibility of establishing communication shall rest with the station having traffic to transmit.

*Note.— In certain cases when SELCAL is used the procedures respecting the establishment of communications are contained in ~~2.8.2.4~~ 2.5.2.4.*

...

~~2.8.1.8.1~~ 2.5.1.8.1 Distress messages and distress traffic shall be handled in accordance with the provisions of ~~2.8.3~~ 2.5.3.

~~2.8.1.8.2~~ 2.5.1.8.2 Urgency messages and urgency traffic, including messages preceded by the medical transports signal, shall be handled in accordance with the provisions of ~~2.8.3~~ 2.5.3.

...

~~2.8.1.8.3~~ 2.5.1.8.3 Communications relating to direction finding shall be handled in accordance with ~~2.9~~ 2.6.

...

~~2.8.1.8.5~~ 2.5.1.8.5 Meteorological messages shall comprise meteorological information to or from aircraft, other than those in ~~2.8.1.8.4~~ 2.5.1.8.4, 3).

...

~~2.8.1.8.6.1~~ 2.5.1.8.6.1 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.

*Note.— The messages at ~~2.8.1.8.4~~ 2.5.1.8.4, 2) and ~~2.8.1.8.6~~ 2.5.1.8.6, 1) to 6) typify some of the operational control communications defined in ~~2.4~~ 2.1.*

...

~~2.8.1.8.8~~ 2.5.1.8.8 Interpilot air-to-air communication shall comprise messages related to any matter affecting safety and regularity of flight. The category and priority of these messages shall be determined on the basis of their content in accordance with ~~2.8.1.8~~ 2.5.1.8.

...

### 2.8.2 2.5.2 Radiotelephony Procedures

*Note.— When Selective Calling (SELCAL) equipment is used certain of the following procedures are superseded by those contained in 2.8.2.4 2.5.2.4.*

...

~~2.8.2.1.1~~ 2.5.2.1.1 When a controller or pilot communicates via voice, the response shall be via voice. Except as provided by ~~2.8.2.12.1~~ 2.5.2.12.1, when a controller or pilot communicates via CPDLC, the response shall be via CPDLC.

...

~~2.8.2.1.3~~ 2.5.2.1.3 *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 2.85-1 shall be used.

...

*Note 2.— The Spelling Alphabet specified in ~~2.8.2.1.3~~ 2.5.2.1.3 is also prescribed for use in the Maritime Mobile Service (ITU Radio Regulations, Appendix S14).*

...

**Figure 2.85-1. The Radiotelephony Spelling Alphabet (see ~~2.8.2.1.3~~ 2.5.2.1.3)**

...

~~2.8.2.1.4.1.1~~ 2.5.2.1.4.1.1 All numbers, except as prescribed in ~~2.8.2.1.4.1.2~~ 2.5.2.1.4.1.2, to ~~2.8.2.1.4.1.6~~ 2.5.2.1.4.1.6 shall be transmitted by pronouncing each digit separately.

*Note.— The following examples illustrate the application of this procedure (see ~~2.8.2.1.4.3.1~~ 2.5.2.1.4.3.1 for pronunciation).*

...

~~2.8.2.1.4.1.2~~ 2.5.2.1.4.1.2 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 ~~2.8.2.1.4.3.1~~ 2.5.2.1.4.3.1 for pronunciation).*

...

~~2.8.2.1.4.1.3~~ 2.5.2.1.4.1.3 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 ~~2.8.2.1.4.3.1~~ 2.5.2.1.4.3.1 for pronunciation).*

...

~~2.8.2.1.4.1.4~~ 2.5.2.1.4.1.4 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 ~~2.8.2.1.4.3.1~~ 2.5.2.1.4.3.1 for pronunciation).*

...

~~2.8.2.1.4.1.5~~ 2.5.2.1.4.1.5 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 ~~2.8.2.1.4.3.1~~ 2.5.2.1.4.3.1 for pronunciation).*

...

~~2.8.2.1.4.1.7~~ 2.5.2.1.4.1.7 Numbers containing a decimal point shall be transmitted as prescribed in ~~2.8.2.1.4.1.1~~ 2.5.2.1.4.1.1 with the decimal point in appropriate sequence being indicated by the word DECIMAL.

...

*Note 2.— For identification of VHF frequencies the number of digits used after the decimal point are determined on the basis of the channel spacing (~~2.8.2.1.7.3.4.3~~ 2.5.2.1.7.3.4.3 refers to frequencies separated by 25 kHz, ~~2.8.2.1.7.3.4.4~~ 2.5.2.1.7.3.4.4 refers to frequencies separated by 8.33 kHz).*

...

~~2.8.2.1.4.1.8~~ 2.5.2.1.4.1.8 When transmitting time, only the minutes of the hour shall normally be required. Each digit shall be pronounced separately. However, the hour shall be included when any possibility of confusion is likely to result.

*Note.— The following example illustrates the application of this procedure when applying the provisions of ~~2.8.2.1.2.2~~ 2.5.2.1.2.2:*

...

~~2.8.5.2.1.5.5~~ 2.5.2.1.5.5 Messages accepted for transmission shall 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 shall 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.

*Note.— The abbreviations which constitute the exceptions mentioned in ~~2.8.5.2.1.5.5~~ 2.5.2.1.5.5 are specifically identified in the abbreviation encode sections of the PANS-ABC (ICAO Document 8400).*

...

~~2.8.2.1.6.1~~ 2.5.2.1.6.1 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 (see ~~2.8.2.1.7.3~~ 2.5.2.1.7.3);

b) text (see ~~2.8.2.1.6.2.1.1~~ 2.5.2.1.6.2.1.1).

...

~~2.8.2.1.6.2~~ 2.5.2.1.6.2 Messages requiring handling by the AFTN for part of their routing and similarly messages which are not handled in accordance with predetermined distribution arrangements (see ~~2.6.3.7.1~~ 2.3.3.7.1) shall be composed as follows:

~~2.8.2.1.6.2.1~~ 2.5.2.1.6.2.1 When originated in an aircraft:

1) call (see ~~2.8.2.1.7.3~~ 2.5.2.1.7.3);

...

~~2.8.2.1.6.2.2.1~~ 2.5.2.1.6.2.2.1 When the provisions of ~~2.8.2.1.6.2.2~~ 2.5.2.1.6.2.2 are applied, the aeronautical mobile service message transmission shall comprise:

...



2.8.5.2.1.6.2.2.2 When the text of a message to be transmitted by an aeronautical station to an aircraft in flight contains approved ICAO abbreviations, these abbreviations shall 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 in 2.8.5.2.1.6.2.2.2 are specifically identified in the abbreviations encode sections of the PANS-ABC (ICAO Document 8400).

...

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

...

*Note 1.*— The name of the aircraft manufacturer or of the aircraft model may be used as a radiotelephony prefix to the Type a) call sign (see Table 2.85-1).

*Note 2.*— The telephony designators referred to in Types b) and c) are contained in ICAO Document 8585 — Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services.

...

~~2.8.2.1.7.2.2.1~~ 2.5.2.1.7.2.2.1 The aircraft radiotelephony call signs shown in ~~2.8.2.1.7.2.1.1~~ 2.5.2.1.7.2.1.1, with the exception of Type c), may be abbreviated in the circumstances prescribed in ~~2.8.2.1.7.3.3.1~~ 2.5.2.1.7.3.3.1. Abbreviated call signs shall be in the following form:

...

**Table 2.85 – 1 Example of full call signs and abbreviated call signs**

(see ~~2.8.2.1.7.2.1~~ 2.5.2.1.7.2.1 and ~~2.8.2.1.7.2.2~~ 2.5.2.1.7.2.2)

...

~~2.8.2.1.7.3.2.1~~ 2.5.2.1.7.3.2.1 Full radiotelephony call signs shall always be used when establishing communication. The calling procedure of an aircraft establishing communication shall be in accordance with Table 2.85-2.

**Table 2.85 – 2. Radiotelephony calling procedure\***

(see ~~2.8.2.1.7.3.2.1~~ 2.5.2.1.7.3.2.1)

...

\*\* 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 prescribed in ~~2.8.2.1.3~~ 2.5.2.1.3 shall be used. Numbers are to be spoken in accordance with ~~2.8.2.1.4~~ 2.5.2.1.4.

...

~~2.8.2.1.7.3.2.3~~ 2.5.2.1.7.3.2.3 The reply to the above calls shall be in accordance with Table 2.85-3. The use of the calling aeronautical station's call sign followed by the answering aeronautical station's call sign shall be considered the invitation to proceed with transmission by the station calling.

**Table 2.85 – 3. Radiotelephony reply procedure\***

(see ~~2.8.2.1.7.3.2.3~~ 2.5.2.1.7.3.2.3)

...

~~2.8.2.1.7.3.3.1~~ 2.5.2.1.7.3.3.1 Abbreviated radiotelephony call signs, as prescribed in ~~2.8.2.1.7.2.2~~ 2.5.2.1.7.2.2, 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.

...

~~2.8.2.1.7.3.4.3~~ 2.5.2.1.7.3.4.3 Except as specified in ~~2.8.2.1.7.3.4.4~~ 2.5.2.1.7.3.4.4 all six digits of the numerical designator shall be used to identify the transmitting channel in VHF radiotelephony communications, except in the case of both the fifth and sixth digits being zeros, in which case only the first four digits should be used

*Note 1.— The following examples illustrate the application of the procedure in ~~2.8.2.1.7.3.4.3~~ 2.5.2.1.7.3.4.3:*

...

~~2.8.2.1.7.3.4.4~~ 2.5.2.1.7.3.4.4 In airspace where all VHF voice communications channels are separated by 25 kHz or more and the use of six digits as in ~~2.8.2.1.7.3.4.3~~ 2.5.2.1.7.3.4.3 is not substantiated by the operational requirement determined by the appropriate authorities, the first five digits of the numerical designator shall be used, except in the case of both the fifth and sixth digits being zeros, in which case only the first four digits should be used.

*Note 1.— The following examples illustrate the application of the procedure in ~~2.8.2.1.7.3.4.4~~ 2.5.2.1.7.3.4.4 and the associated settings of the aircraft radio management panel for communication equipment with channel separation capabilities of 25 kHz and 8.33/25 kHz:*

...

~~2.8.2.2.1.1.3~~ 2.5.2.2.1.1.3 Aircraft on flights other than those specified in ~~2.8.2.2.1.1.4~~ 2.5.2.2.1.1.1 and ~~2.8.2.2.1.1.2~~ 2.5.2.2.1.1.2 shall guard the emergency frequency 121.5 MHz to the extent possible.

...

~~2.8.2.2.2.4~~ 2.5.2.2.2.4 During its tenure of primary guard, each regular station shall, among other things:

...

c) be responsible for the action required in case of failure of communications (*see* ~~2.8.2.2.7.2~~ 2.5.2.2.7.2).

...

~~2.8.2.2.3.2~~ 2.5.2.2.3.2 An aeronautical station, when designating frequencies in accordance with ~~2.8.2.2.3.1.1~~ 2.5.2.2.3.1.1 or ~~2.8.2.2.3.1.2~~ 2.5.2.2.3.1.2, shall take into account the appropriate propagation data and distance over which communications are required.

...

~~2.8.2.2.3.4~~ 2.5.2.2.3.4 When, notwithstanding the provisions of ~~2.8.1.1~~ 2.5.1.1, air-ground frequencies are used for the exchange between network stations of messages essential for coordination and cooperation between the stations, such communication shall, 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 shall take priority over the inter-ground station communications.

...

~~2.8.2.2.4.4~~ 2.5.2.2.4.4 The provisions of ~~2.8.2.2.4.3~~ 2.5.2.2.4.3 and ~~2.8.2.2.4.3.1~~ 2.5.2.2.4.3.1 shall also be applied:

...

~~2.8.2.2.7.1.2~~ 2.5.2.2.7.1.2 If the attempts specified under ~~2.8.2.2.7.1.1~~ 2.5.2.2.7.1.1 fail, the aircraft station shall transmit its message twice on the designated channel(s), preceded by the phrase “TRANSMITTING BLIND” and, if necessary, include the addressee(s) for which the message is intended.

...

~~2.8.2.2.7.1.3.2~~ 2.5.2.2.7.1.3.2 An aircraft which is provided with air traffic control or advisory service shall, in addition to complying with ~~2.8.2.2.7.1.3.1~~ 2.5.2.2.7.1.3.1, transmit information

regarding the intention of the pilot-in-command with respect to the continuation of the flight of the aircraft.

~~2.8.2.2.7.1.3.3~~ 2.5.2.2.7.2.2 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.

*Note.— General rules which are applicable in the event of communications failure are contained in ~~Annex 2 to the Convention~~ CAR-ANS Part 14.*

...

~~2.8.2.2.7.2.2~~ 2.5.2.2.7.2.2 The provisions of ~~2.8.2.2.7.2.1~~ 2.5.2.2.7.2.1 shall also be applied:

...

~~2.8.2.2.7.2.3~~ 2.5.2.2.7.2.3 If the attempts specified in ~~2.8.2.2.7.2.1~~ 2.5.2.2.7.2.1 fail, the aeronautical station shall 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.

...

~~2.8.2.3.1.2.3.1~~ 2.5.2.3.1.2.3.1 If, in abnormal circumstances, forwarding is necessary using the air-ground channels, the provisions of ~~2.8.2.2.3.4~~ 2.5.2.2.3.4 shall be observed.

...

~~2.8.2.3.1.3~~ 2.5.2.3.1.3 The provisions of ~~2.8.2.3.1.2~~ 2.5.2.3.1.2 shall also be applied, if practicable, in non-network operation.

...

~~2.8.2.3.1.4.1~~ 2.5.2.3.1.4.1 If the aeronautical station to which the message is addressed is unable to dispose of the message in accordance with ~~2.8.2.3.1.4~~ 2.5.2.3.1.4, the station of origin shall be advised.

...

~~2.8.2.4~~ 2.5.2.4 SELCAL procedures

*Note.— The procedures contained in ~~2.8.2.4~~ 2.5.2.4 are applicable when SELCAL is used and replace certain of the procedures related to calling contained in ~~2.8.2.1~~ 2.5.2.1.*

...

~~2.8.3.1.4~~ 2.5.3.1.4 If no acknowledgement of the distress or urgency message is made by the station addressed by the aircraft, other stations shall render assistance, as prescribed in ~~2.8.3.2.2~~ 2.5.3.2.2 and ~~2.8.3.3.2~~ 2.5.3.3.2 respectively.

...

~~2.8.3.2.1.1~~ 2.5.3.2.1.1 In addition to being preceded by the radiotelephony distress signal MAYDAY (*see* ~~2.8.3.1.2~~ 2.5.3.1.2), preferably spoken three times, the distress message to be sent by an aircraft in distress shall:

...

f) *any variation on the elements listed under ~~2.8.3.2.1.1~~ 2.5.3.2.1.1 b), when the transmitting station is not itself in distress, provided that such circumstance is clearly stated in the distress message.*

...

~~2.8.3.2.3.2~~ 2.5.3.2.3.2 The use of the signals specified in ~~2.8.3.2.3.1~~ 2.5.3.2.3.1 shall be reserved for the aircraft station in distress and for the station controlling the distress traffic.

...

~~2.8.3.2.5.3~~ 2.5.3.2.5.3 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 prescribed in ~~2.8.3.2.5.1~~ 2.5.3.2.5.1, it is authorized to do so by the appropriate authority.

...

~~2.8.3.3.1~~ 2.5.3.3.1 Action by the aircraft reporting an urgency condition except as indicated in ~~2.8.3.3.4~~ 2.5.3.3.4.

~~2.8.3.3.1.1~~ 2.5.3.3.1.1 In addition to being preceded by the radiotelephony urgency signal PAN PAN (*see* ~~2.8.3.1.2~~ 2.5.3.1.2), preferably spoken three times and each word of the group pronounced as the French word “panne”, the urgency message to be sent by an aircraft reporting an urgency condition shall:

...

*Note 1.— The foregoing provisions of ~~2.8.3.3.1.1~~ 2.5.3.3.1.1 are not intended to prevent an aircraft broadcasting an urgency message, if time and circumstances make this course preferable.*

...

~~2.8.3.3.4.1~~ 2.5.3.3.4.1 The use of the signal described in ~~2.8.3.3.4.2~~ 2.5.3.3.4.2 shall indicate that the message which follows concerns a protected medical transport pursuant to the 1949 Geneva Conventions and Additional Protocols.

...

~~2.8.3.3.5.1~~ 2.5.3.3.5.1 The provisions of ~~2.8.3.3.2~~ 2.5.3.3.2 and ~~2.8.3.3.3~~ 2.5.3.3.3 shall apply as appropriate to stations receiving a medical transports message.

...

## **~~2.9~~ 2.6 AERONAUTICAL RADIO NAVIGATION SERVICE**

*Editorial Note:- Renumbering of the entire Chapter 2.9 to 2.6.*

...

## **~~2.10~~ 2.7 AERONAUTICAL BROADCASTING SERVICE**

*Editorial Note:- Renumbering of the entire Chapter 2.10 to 2.7.*

...

## **~~2.11~~ 2.8 AERONAUTICAL MOBILE SERVICE – DATA LINK COMMUNICATIONS**

*Editorial Note:- Renumbering of the entire Chapter 2.11 to 2.8.*

### **~~2.11.1~~ 2.8.1 General**

*Note 1.— While the provisions of ~~2.11~~ 2.8 are based primarily on the use of controller-pilot data link communications (CPDLC), the provisions of ~~2.11.1~~ 2.8.1 would apply to other data link applications, where applicable, including Data link—flight information services (e.g. D-ATIS, DVOLMET, etc.).*

...

*Note 3.— Guidance material relating to CPDLC, ADS-C and related data link initiation capability (DLIC) can be found in the Global Operational Data Link (GOLD) Manual (ICAO Document 10037).*

...

~~2.11.1.1.1.2~~ 2.8.1.1.1.2 The logon address associated with an ATS unit shall be published in the Aeronautical Information Publications in accordance with CAR-ANS Part 15.

...

*Note 2.— Detailed specifications concerning aeronautical information publications presentation and contents are contained in the Procedures for Air Navigation Services – Aeronautical Information Management (~~PANS-AIM, Doc 10066~~) MOS-AIS, Appendix 2.*

...

~~2.11.1.2.1~~ 2.8.1.2.1 The text of messages shall be composed in standard message format (e.g. CPDLC message set), in plain language or in abbreviations and codes, as prescribed in ~~2.6.7~~ 2.3.7. Plain language shall be avoided when the length of the text can be reduced by using appropriate abbreviations and codes. Non-essential words and phrases, such as expressions of politeness, shall not be used.

...

~~2.11.2.9.1.2~~ 2.8.2.9.1.2 Except as provided by ~~2.11.2.12.1~~ 2.8.2.12.1, when a controller or pilot communicates via CPDLC, the response shall be via CPDLC. When a controller or pilot communicates via voice, the response shall be via voice.

...

~~2.11.2.9.3.1~~ 2.8.2.9.3.1 The alert attribute shall delineate the type of alerting required upon message receipt. Alert types are presented in Table ~~2.118~~ 2.

~~2.11.2.9.3.2~~ 2.8.2.9.3.2 The response attribute shall delineate valid responses for a given message element. Response types are presented in Table ~~2.118~~ 3 for uplink messages and Table ~~2.118~~ 4 for downlink messages.

...

~~2.11.2.9.3.2.4~~ 2.8.2.9.3.2.4 When a multi-element clearance request can only be partially accommodated, the controller shall respond with an UNABLE message applying to all the message elements of the request and, if appropriate, include a reason and/or information on when a clearance may be expected.

*Note – A separate CPDLC message (or messages) may subsequently be transmitted to respond to those elements that can be accommodated.*

...

#### **Table ~~2.118~~ – 1 Alert Attribute (Uplink and Downlink)**

...

#### **Table ~~2.118~~ – 2 Response Attribute (Uplink)**

...

#### **Table ~~2.118~~ – 3 Response Attribute (Downlink)**

...

~~2.11.8.2.11.2~~ When the CPDLC message set contained in the ~~PANS-ATM (Doc 4444)~~ MOS-ATS does not provide for specific circumstances, the appropriate ATS Authority may determine that it is acceptable to use free text message elements. In such cases, the appropriate ATS Authority, in consultation with operators and other ATS authorities that may be concerned, shall define display format, intended use and attributes for each free text message element and publish them with relevant procedures in the AIPs.

...

~~2.11.2.12.4~~ 2.8.2.12.4 *Failure of CPDLC.*

*Note 1. – Action to be taken in the event of a data link initiation failure is covered in ~~2.11.1.1.4~~ 2.8.1.1.4.*

*Note 2. – Action to be taken in the event of the failure of a single CPDLC message is covered in ~~2.11.2.12.7~~ 2.8.2.12.7.*

...

## **~~2.12 REPEALING PROVISIONS~~IV. REPEALING PROVISIONS**

~~All previous Administrative Orders, Memorandum Circulars, Procedure Orders or part thereof as they pertain to aeronautical telecommunications service which are inconsistent with the provisions of this Manual of Procedures are hereby repealed amended or modified accordingly.~~

## **~~2.13 SEPARABILITY PROVISIONS~~ V. SEPARABILITY-PROVISIONS**

~~The provisions of this Manual of Procedures are hereby declared separable. If any portion thereof shall be held invalid or unconstitutional, such invalidity or unconstitutionality shall not affect the other provisions which shall be in full force and effect.~~

## **~~2.14 DISTRIBUTION~~ VI. DISTRIBUTION**

~~This Manual of Procedures will be distributed to all Air Traffic Services facilities, the airspace users as well as to other interested parties concerned. Each personnel who possess a copy shall ensure that this copy is up to date.~~

**~~Attachment 2A—List of specialized COM terms and their definition related to aeronautical telecommunications planning~~**

*Editorial Note:- Additional specialized communication terms and their definition is added to Chapter 2.1 of this CAR-ANS, deleting the entire Attachment 2A.*

...

**~~Attachment 2B—GUIDANCE MATERIAL FOR THE TRANSMISSION OF LONG MESSAGES ON THE AFTN~~**

*Editorial Note:- The entire Attachment 2B of this CAR-ANS will be deleted and be adopted as Advisory Circular AC AFTN-ATM-01-23.*

**-END-**

## **NEW/AMENDED REGULATION AFTER REVISION:**

### **CIVIL AVIATION REGULATIONS – AIR NAVIGATION SERVICES PART 2**

...

#### **FOREWORD**

Pursuant to the provisions of Article 37 of the convention of International Civil Aviation, the Civil Aviation Authority of the Philippines (CAAP) formulated and issued this Civil Aviation Regulations-Air Navigation Services Part 2 (CAR-ANS Part 2), establishing rules and regulations relating to Aeronautical Telecommunications Communication Procedures with PANS Status.

This CAR-ANS Part 2 was also developed based on the Standards and Recommended Practices prescribed by the International Civil Aviation Organization (ICAO) as contained in Annex 10, Aeronautical Telecommunications Vol II – Communication Procedures including those with PANS status.

Article 38 of the Convention imposed an obligation to the CAAP to notify ICAO of any differences between its national regulations and practices and the International Standards contained in Annex 10 Vol. II and any amendments thereto, especially when such differences are important for the safety of air navigation.

...



**I. PURPOSE** This Civil Aviation Regulations-Air Navigation Services (CAR-ANS) Part 2 provides procedures for aeronautical telecommunications service within the Manila Flight Information Region.

**II. AUTHORITY** The regulations and procedures contained herein are issued by authority of the Director General of the Civil Aviation Authority of the Philippines and shall be complied with by all concerned. As used in this Civil Aviation Regulation, “Authority” refers to the Civil Aviation Authority of the Philippines pursuant to the Republic Act 9497 also known as the Civil Aviation Authority Act of 2008.

**III. APPLICABILITY** The procedures embodied herein shall apply to all Air Traffic Service facilities and airspace users within the Manila Flight Information Region.

**IV. REPEALING PROVISIONS** All previous Administrative Orders, Memorandum Circulars or part thereof as they pertain to Communication Procedures with PANS Status which are inconsistent with the provisions of this Civil Aviation Regulation are hereby repealed, amended or modified accordingly.

**V. SEPARABILITY PROVISIONS** The provisions of this Civil Aviation Regulation are hereby declared separable. If any portion thereof shall be held invalid or unconstitutional, such invalidity or unconstitutionality shall not affect the other provisions which shall be in full force and effect.

**VI. DISTRIBUTION** This Civil Aviation Regulation will be distributed to all air traffic services providers.

## **2.1 DEFINITIONS, ABBREVIATIONS, RULES OF CONSTRUCTION & AMENDMENT/REVISION TO CAR-ANS PART 2**

When the following terms are used in this publication, they have the following meanings:

*Note 1.— A list of additional specialized communication terms and their definitions that is contained in Attachment 2A will be added in the Definition of this CAR-ANS.*

*Note 2.— All references to “Radio Regulations” are to the Radio Regulations published by the International Telecommunication Union (ITU). Radio Regulations are amended from time to time by the decisions embodied in the Final Acts of World Radiocommunication Conferences held normally every two to three years. Further information on the ITU processes as they relate to aeronautical radio system frequency use is contained in the Handbook on Radio Frequency Spectrum Requirements for Civil Aviation including statement of approved ICAO policies (ICAO Document 9718).*

### **2.1.1.1 Services**

...

### **2.1.1.2 Stations**

**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 or an earth satellite.

...

**AFTN destination station.** An AFTN station to which messages and/or digital data are addressed for processing for delivery to the addressee.

**AFTN entry-exit points.** Centers through which AFTN traffic entering and leaving an ICAO Air Navigation Region should flow.

**AFTN group.** Three or more radio stations in the aeronautical fixed telecommunications network exchanging communications on the same radio frequency.

...

**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 center.** An aeronautical fixed station which relays or retransmits telecommunication traffic from (or to) a number of other aeronautical fixed stations directly connected to it.

**General purpose system (GP).** Air-ground radiotelephony facilities providing for all categories of traffic listed in 2.81.8.

*Note.— In this system communication is normally indirect, i.e. exchanged through the intermediary of a third person.*

...

### **2.1.1.3 Communication Methods**

...

**Broadcast.** A transmission of information relating to air navigation that is not addressed to a specific station or stations.

**Channel.** A single means of direct fixed service communication between two points.

**Circuit.** A communication system which includes all the direct AFTN channels between two points.

**Double channel simplex.** Simplex using two frequency channels one in each direction.

*Note.— This method was sometimes referred to as cross band.*

...

**Non-network communications.** Radiotelephony communications conducted by a station of the aeronautical mobile service, other than those conducted as part of a radiotelephony network.

**Offset frequency simplex.** A variation of single channel simplex wherein telecommunication between two stations is effected by using in each direction frequencies that are intentionally slightly different but contained within a portion of the spectrum allotted for the operation.

...

**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; and

c) offset frequency simplex.

**Single channel simplex.** Simplex using the same frequency channel in each direction.

...

#### **2.1.1.4 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.

**Incoming circuit responsibility list.** A list, for each incoming circuit of a communication center, of the location indicators for which relay responsibilities are to be accepted in respect of messages arriving on that circuit.

**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.

**Relay time.** The relay time of a COM center is the elapsed time between the instant that a message has been completely received at that center and the instant that it has been completely retransmitted on an outgoing circuit.

**Route (AFTN).** The path followed by a particular channel of a circuit.

**Routing (AFTN).** The chosen itinerary to be followed by messages on the AFTN between acceptance and delivery.

**Routing List.** A list in a communication center indicating for each addressee the outgoing circuit to be used.

**Transit time.** The elapsed time between the instant of filing a message with an AFTN station for transmission on the network, and the instant that it is made available to the addressee.

#### **2.1.1.5 Teletypewriter Systems**

...

#### **2.1.1.6 Agencies**

...

#### **2.1.1.7 Frequencies**

...

#### **2.1.1.8 Data Link Communications**

...

#### **2.1.1.9 Miscellaneous**

...

### **2.1.2 ACRONYMS & ABBREVIATIONS**

ADS-C                      Automatic Dependent Surveillance Contract

AFS                         Aeronautical Fixed Service

AFTN	Aeronautical Fixed Telecommunication Network
AIDC	ATS Interfacility Data Communication
AIS	Aeronautical Information Services
ATMHS	ATS Message Handling Services
ATN	Aeronautical Telecommunication Network
ATS	Air Traffic Services
ATSMHS	ATS Message Handling Services
ATSUs	ATS units
CAAP	Civil Aviation Authority of the Philippines
CAR-ANS	Civil Aviation Regulations-Air Navigation Services
CIDIN	Common ICAO Data Interchange Network
CPDLC	Controller-Pilot Data Link Communications
CPDLC	CONTROLLER-PILOT DATA LINK COMMUNICATIONS
DLIC	Data Link Initiation Capability
FIR	Flight Information Region
GOLD	Global Operational Data Link
HF	High Frequency
hPa	Hectopascals
ICAO	International Civil Aviation Organization
ICC	Inter-Centre Communications
ICS	Internet Communication Service
ISP	International Standardized Profiles
ITA	International Telegraph Alphabet
ITU	International Telecommunication Union
MOS-ATS	Manual of Standards for Air Traffic Service
MSL	Mean Sea Level
NOTAM	Notice to Airmen
ODF	Optional Data Field
PANS	Provisions of Air Navigation Service

PBCS	Performance-based Communication and Surveillance
PCAR	Philippine Civil Aviation Regulations
PDAIs	Predetermined Distribution Addressee Indicators
RVR	Runway Visual Range
SATVOICE	SATELLITE VOICE COMMUNICATIONS
SATVOICE	Satellite Voice Communications
SELCAL	Selective Calling
TAFs	Terminal Aerodrome Forecasts
UTC	Coordinated Universal Time
VHF	Very High Frequency

### 2.1.3 RULES OF CONSTRUCTION

#### Terminology

Through this regulation the following word usage applies:

- a) ***Shall*** indicate a mandatory requirement
- b) ***May*** indicates that discretion can be used when performing an act described in a regulation.
- c) ***Will*** indicates an action incumbent upon the Authority.

### 2.1.4 Amendment/Revision to CAR-ANS Part 2

Proposals for any amendment or revision to CAR-ANS Part 2 shall be submitted to the Technical Working Group (TWG) of the Air Traffic Management Safety Inspectorate Division (ATMSID). Whether it is an ICAO Annex 10 Vol. II adopted amendment or any amendment or revision initiated by CAAP or by any other aviation stakeholders, the ATMSID TWG shall submit the deliberated proposal to the Regulations Review Committee (RRC) for furtherance.

The RRC shall be composed of the Director General, the Chiefs of Offices of the Flight Standards Inspectorate Service (FSIS), the Aerodrome and Air Navigation Safety Oversight Office (AANSOO), Air Traffic Services (ATS), Air Navigation Service (ANS), Aerodrome Development and Management Service (ADMS), the International Civil Aviation Coordinating Staff (ICACS), Enforcement and Legal Service (ELS), and representative from State Safety Programme Office (SSPO).

The Chairman of the RRC shall be the Director General or his authorized representative and the Vice Chairman for CAR -ANS Part 2 related matters shall be the Chief of AANSOO. The Secretariat of the RRC on matters concerning CAR-ANS Part 2 shall be the current Chief of the Regulatory Safety Standards Division (RSSD) of AANSOO.

The RRC shall follow the procedures prescribed in the Regulations Amendment/ Revision Procedure (RAP) in deciding on the amendment or revision to or any other proposals associated with it. Once the amendment or revision is reviewed and endorsed by the RRC for the approval of the Director General, it shall be published in the Official Gazette of the Philippines or in a newspaper of general circulation. A copy of this published amendment/revision to regulations must be filed to the U.P. Law Center - Office of the National Administrative Register (UP-ONAR).

The Chairman of the RRC shall convene the committee for a meeting or at the instance of the Chairman or Vice-Chairman and follow the Internal Rules of Procedures prescribed in the RAP.

## **2.2 ADMINISTRATIVE PROVISION RELATING TO THE INTERNATIONAL AERONAUTICAL TELECOMMUNICATION SERVICE**

...

*Editorial Note:- Renumbering of the entire Chapter 2.5 to 2.2.*

### **2.2.4 Supervision**

2.2.4.1 The ATS Authority or his/her designated authorized representative shall be responsible for ensuring that the aeronautical telecommunication service is conducted in accordance with the Procedures in this CAR-ANS.

...

2.2.4.3 When a station commits serious or repeated infringements, representations relating to them shall be made to the authority designated in 2.2.4.1.

2.2.4.4 The authorities designated in 2.2.4.1 shall exchange information regarding the performance of systems of communication, radio navigation, operation and maintenance, unusual transmission phenomena, etc.

...

## **2.3 GENERAL PROCEDURES FOR THE INTERNATIONAL AERONAUTICAL TELECOMMUNICATION SERVICE**

*Editorial Note:- Renumbering of the entire Chapter 2.6 to 2.3.*

### **2.3.1 General**

The procedures outlined in this Sub - Part are general in character and shall be applied where appropriate to the other Sub - Parts contained in this CAR-ANS.

*Note.— Detailed procedures, with special application to the service concerned, are contained in - CAR-ANS Parts 7, 8, 9,10 and 11.*

...

### **2.3.3 Acceptance, Transmission and Delivery of Messages**

...

2.3.3.1 Only those messages coming within the categories specified in 2.4.4.1.1 shall be accepted for transmission by the aeronautical telecommunication service.

...



2.3.3.2.1 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, however, to the provisions prescribed in 2.4.4.3.1.2.3.

...

2.3.3.7 Messages originated in the aeronautical mobile service by an aircraft in flight and which require transmission over the aeronautical fixed telecommunication network to effect delivery, shall be reprocessed by the aeronautical telecommunication station into the message format prescribed in 2.4.4.2 prior to transmission on the AFTN.

...

2.3.3.7.1 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 format prescribed in 2.4.4.2 except where, subject to the provisions of 2.3.3.5, prior and other arrangements have been made between the aeronautical telecommunication agency and the aircraft operating agency concerned for predetermined distribution of messages from aircraft.

...

2.3.3.7.4 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 are transmitted by the aeronautical stations, are contained in the Manual of Standards for Air Traffic Service (MOS-ATS).*

2.3.3.7.5 When air-reports in AIREP form are to be retransmitted by telegraphy (including teletypewriting), the text transmitted shall be as recorded in compliance with 2.3.3.7.4.

...

## **2.3.7 Use of Abbreviations and Codes**

...

2.3.7.1.1 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.

*Note.— The use of ICAO approved abbreviations and codes wherever appropriate — for example, those contained in ICAO PANS-ABC (ICAO Document 8400) — obviates the need for application of the provisions of 2.3.7.1.1.*

...

## **2.4 AERONAUTICAL FIXED SERVICE (AFS)**

*Editorial Note:- Renumbering of the entire Chapter 2.7 to 2.4.*

### **2.4.1 General**

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

...

*Note 1.- Provisions relating to ATS direct speech communications are contained in 2.4.2.*

*Note 2.- Provisions relating to meteorological operational channels and meteorological operational telecommunication networks are contained in 2.4.3.*

*Note 3.- The AFTN provides a store-and-forward messaging service for the conveyance of text messages in ITA-2 or IA-5 format, using character-oriented procedures. Provisions relating to the AFTN are contained in 2.4.4.*

*Note 4.- The CIDIN provides a common transport service for the conveyance of binary or text application messages, in support of the AFTN and OPMET applications. Procedural provisions relating to the CIDIN are contained in 2.4.5.*

*Note 5.- The ATS (air traffic services) message handling services (ATSMHS) application allows ATS messages to be exchanged between service users over the aeronautical telecommunication network (ATN) internet communication service (ICS). Procedural provisions relating to ATS message handling services are contained in 2.4.6.*

*Note 6.- The inter-center communications applications enable the exchange of information between air traffic service units over the aeronautical telecommunication network (AW) internet communication service (ICS), in support of notification, coordination, transfer of control, flight planning airspace management and air traffic flow management. Procedural provisions relating to inter-center communications are contained in 2.4.7.*

*Note 7.- The aeronautical telecommunication network through its ATSMHS and ICC applications enable the transition of existing AFTN and CIDIN users and systems into the ATN architecture.*

#### 2.4.1.2 Material permitted in AFS messages

*Note.— The provisions contained in 2.4.1.2 do not apply to ATS voice communications.*

...

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

...

*Note 2.- When using any of the above signals, account is to be taken of, amongst others, the provisions of 2.4.4.5.3.*

*Note 3.- The foregoing provisions of 2.4.1.2.2 are not intended to prevent the use of:*

...

*b) figure case of signal no. 10 as the priority alarm (see 2.4.4.4.3); and*

...

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

1) any uninterrupted sequence of signals nos. 26, 3, 26 and 3 (letter case and figure case) in this order, other than the one in the heading as prescribed in 2.4.4.2.1.1; and

2) any uninterrupted sequence of four times signal no. 14 (letter case and figure case) other than the one in the ending as prescribed in 2.4.4.6.1.

2.4.1.2.6 Messages using IA-5 shall not contain:

1) character 0/1 (SOH) other than the one in the heading as prescribed in 2.4.4.15.1.1.2 a);

2) character 0/2 (STX) other than the one in the origin line as prescribed in 2.4.4.15.2.2.7;

3) character 0/3 (ETX) other than the one in the ending as prescribed in 2.4.4.15.3.12.1;

...

2.4.1.2.7 The text of messages shall be drafted in plain language or in abbreviations and codes, as prescribed in 2.4.7. 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.

2.4.1.2.8 If the originator of a message wishes alignment functions [ $\leq$ ] to be transmitted at specific places in the text part of such message (*see 2.4.4.5.3 and 2.4.4.15.3.6*), the sequence [ $\leq$ ] shall be written on each of those places.

...

#### **2.4.4 Aeronautical Fixed Telecommunication Network (AFTN)**

...

2.4.4.5.7 The text of the messages entered by the AFTN origin station shall not exceed 1,800 characters in length.

*Note 1.— Where it is desired that a communication with a text exceeding 1,800 characters be transmitted over the aeronautical fixed telecommunication network, 2.4.4.5.7 requires that such a communication be entered by the AFTN origin station in the form of separate messages, each text of which does not exceed 1,800 characters. Guidance material for forming separate messages from a single long message is given in Advisory Circular AC-AFTN-ATM-01-23.*

...

2.4.4.1.1 *Categories of messages.* Subject to the provisions of 2.3.3, the following categories of message are handled by the aeronautical fixed telecommunication network:

...

2.4.4.1.1.9.1 Service messages shall be prepared in the format prescribed in 2.4.4.2 or 2.4.4.12. In applying the provisions of 2.4.4.3.1.2 or 2.4.4.15.2.1.3 to service messages addressed to an aeronautical fixed station identified only by a location indicator, this indicator shall be immediately followed by the ICAO three-letter designator YFY, followed by an appropriate 8th letter.

...

2.4.4.1.1.9.7 When a service message refers to a message previously handled, reference to the previous message shall be made by use of the appropriate transmission identification (*see 2.4.4.2.1.1 b*) and 2.4.4.15.1.1 b)) or the filing time and originator indicator groups (*see 2.4.4.4 and 2.4.4.15.2.2*) identifying the reference message.

...

2.4.4.1.3.2 Predetermined diversion routing arrangements shall be made, when necessary, to expedite the movement of communication traffic. Each communication center shall have the appropriate diversion routing lists, agreed to by the Administration(s) operating the communication centers affected and use them when necessary.

2.4.4.1.3.2.1 Diversion routing shall be initiated:

1) in a fully automatic communication center:

a) immediately after detection of the circuit outage, when the traffic is to be diverted via a fully automatic communication center;

b) within a 10-minute period after detection of the circuit outage, when the traffic is to be diverted via a non-fully automatic communication center;

2) in a non-fully automatic communication center within a 10-minute period after detection of the circuit outage.

...

2.4.4.1.4.1.1 When the receiving station detects that one or more channel sequence numbers are missing, it shall send a complete service message (*see 2.4.4.1.1.9*) 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 (*see 2.4.4.2.1.1.3 and 2.4.4.15.1.1.4*) and the end of-text signal (*see 2.4.4.5.6 and 2.4.4.15.3.12*).

...

2.4.4.1.4.1.1.1 When the provisions of 2.4.4.1.4.1.1 are applied, 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 retransmit that message (or those messages) with a new (correct in sequence) transmission identification. The receiving station shall synchronize such that the next expected channel-sequence number is the last received channel-sequence number plus one.

...

2.4.4.1.4.1.2.1 When the provisions of 2.4.4.1.4.1.2 are applied, the station receiving the out-of-sequence message shall synchronize such that the next expected channel-sequence number is the last received channel-sequence number plus one. The previous station shall check its outgoing channel sequence numbers and, if necessary, correct the sequence.

...

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

1) send a service message (*see 2.4.4.1.1.9*) to the previous station rejecting receipt of the misrouted message; or

...

2.4.4.1.4.2.2 When the provisions of 2.4.4.1.4.2.1, 1) are applied, the text of the service message shall comprise the abbreviation SVC, the signal QTA, the procedure signal MSR followed by the transmission identification (*see 2.4.4.2.1.1.3 and 2.4.4.15.1.1.4*) of the misrouted message and the end-of-text signal (*see 2.4.4.5.6 and 2.4.4.15.3.12*).

...

2.4.4.1.4.2.3 When, as a result of the provisions of 2.4.4.1.4.2.2, a sending station is notified of the misrouted message condition by service message, it shall re-assume its responsibility for the message and shall retransmit as necessary on the correct outgoing channel or channels.

2.4.4.1.4.3 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 (*see 2.4.4.1.1.9*) with the text comprising the abbreviation SVC, the procedure signals LR and LS followed by the transmission identifications of the relevant messages and the end-of-text signal (*see 2.4.4.5.6 and 2.4.4.15.3.12*).

...

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

...

2.4.4.1.7.1 Except as provided in 2.4.4.1.7.2, AFTN communication centers shall retain, for a period of at least one hour, a copy of all messages, in their entirety, retransmitted or relayed by that communication center.

2.4.4.1.7.2 In cases where acknowledgment 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 acknowledgment, and it may be deleted from its records.

...

#### 2.4.4.2 Message format — International Telegraph Alphabet No. 2 (ITA-2)

All messages, other than those prescribed in 2.4.4.1.8 and 2.4.4.9.3 shall comprise the components specified in 2.4.4.2.1 to 2.4.4.6.1 inclusive.

...

2.4.4.2.1.2 In teletypewriter operation, the spacing signal, consisting of 5 SPACES [→→→→→] followed by 1 LETTER SHIFT [↓], shall be transmitted immediately following the transmission identification prescribed in 2.4.4.2.1.1.3.

*Note.— The examples appearing below illustrate the application of the transmission identification Standard (see 2.4.4.2.1.1 b) and 2.4.4.2.1.1.3):*

...

2.4.4.2.1.4 To avoid any misinterpretation of the diversion indicator especially 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) shall not appear in any other component of the heading.

...

#### **Figure 2.4-1. Message format ITA-2**

*(The above illustrates the teletypewriter message format prescribed in 2.4.4.2 to 2.4.4.9.1 inclusive)*

...

2.4.4.3.1.2.1 Where a message is to be addressed to an organization that has not been allocated an ICAO three-letter designator of the type prescribed in 2.4.4.3.1.2, 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 of the text of the message. The eighth position letter following the ICAO three-letter designator YYY or YXY shall be the filler letter X.

2.4.4.3.1.2.2 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 X.

*Note.— The following examples illustrate application of the Standards in 2.4.4.3.1.2.1 and 2.4.4.3.1.2.2:*

...

2.4.4.3.1.2.3 The complete address shall be restricted to three lines of page printing copy and, except as provided in 2.4.4.14, a separate addressee indicator shall be used for each addressee whether at the same or at different locations.

2.4.4.3.1.2.3.1 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 message shall be converted, before transmission, into two or more messages, each of which shall conform with the provisions of 2.4.4.3.1.2.3. 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 centers.

...

2.4.4.4.1 The filing time shall comprise the 6-digit date time group indicating the date and time of filing the message for transmission (*see* 2.3.4.2); in teletypewriter operation, the filing time shall be followed by one LETTER SHIFT [↓].

...

2.4.4.4.2.1 Where a message is originated by an organization that has not been allocated an ICAO three-letter designator of the type prescribed in 2.4.4.4.2 b), 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 in 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.

...

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

*Note.— The following illustrates the application of 2.4.4.4.2.2 procedure as it would appear with a message from aircraft PAL153 addressed to the Area Control Center at RPHI, the message being handled via aeronautical station RPHI. The heading and ending of the message are not shown in this example of teletypewriter page-copy form:*

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

...

*Note 2.— Use of the priority SS alarm will actuate a bell (attention) signal at the receiving teletypewriter station, other than at those fully automatic stations which may provide a similar alarm on receipt of priority indicator SS, thereby alerting supervisory personnel at relay centers and operators at tributary stations, so that immediate attention may be given to the message.*

...

2.4.4.5.1 The text of messages shall be drafted in accordance with 2.4.1.2.

2.4.4.5.2 When an originator's reference is used, it shall appear at the beginning of the text, except as provided in 2.4.4.5.2.1 and 2.4.4.5.2.2.

2.4.4.5.2.1 When the ICAO three-letter designators YXY, YYY or ZZZ comprise the second element of the addressee indicator (*see* 2.4.4.3.1.2.1 and 2.4.4.3.1.2.2) and it, therefore, becomes necessary to identify in the text the specific addressee of the message, such



identification group will precede the originator's reference (if used) and become the first item of the text.

2.4.4.5.2.2 When the ICAO three-letter designators YXY, YYY or ZZZ comprise the second element of the originator indicator (*see 2.4.4.4.2.1 and 2.4.4.4.2.2*) 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.

2.4.4.5.2.3 When applying the provisions of 2.4.4.5.2.1 and 2.4.4.5.2.2 to messages where the ICAO three-letter 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, 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 these identifications to precede the remainder of the text wording.

2.4.4.5.3 An alignment function [ $\leq$ ] shall be transmitted at the end of each printed line of the text except for the last (*see 2.4.4.5.6*).

...

2.4.4.5.7 The text of the messages entered by the AFTN origin station shall not exceed 1,800 characters in length.

*Note 1.— Where it is desired that a communication with a text exceeding 1,800 characters be transmitted over the aeronautical fixed telecommunication network, 2.4.4.5.7 requires that such a communication be entered by the AFTN origin station in the form of separate messages, each text of which does not exceed 1,800 characters. Guidance material for forming separate messages from a single long message is given in Attachment B of this Manual.*

...

2.4.4.6.1 The ending shall comprise:

...

c) the message-separation signal, consisting of a LETTER SHIFT [↓] transmitted 12 times in uninterrupted sequence.

...

*Note 2.— The following illustrates the procedures specified in 2.4.4.2 to 2.4.4.6.1 inclusive for a message in page-copy form:*

...

2.4.4.7.1 In "torn-tape" installations, and in "semi-automatic" installations using continuous tape technique, when signals additional to those prescribed in 2.4.4.6.1 are required to ensure that the tape is adequately advanced from the reperforator at the receiving stations, when the ending of one message is not followed immediately by the start-of-message signal of another message, local arrangements shall be made at the receiving station to avoid the need for transmission of these signals by the transmitting station.

...

2.4.4.7.1.1 When the provisions of 2.4.4.7.1 cannot be applied, arrangements shall be made with the transmitting station for the latter to send, at the end of a single message, or following the last message of a series, an agreed number of LETTER SHIFTS [↓] in addition to the components prescribed in 2.4.4.6.

#### 2.4.4.8 Stripped address

When applying the provisions of 2.4.4.3 or 2.4.4.15.2.1, an AFTN communication center shall omit from the address all the addressee indicators not required for:

...

2.4.4.9.3 *Channel-check transmissions.* Except as provided in 2.4.4.9.3.3 and 2.4.4.9.3.5 the following periodic transmissions shall be sent on teletypewriter circuits:

1) heading (*see 2.4.4.2.1.1*);

...

2.4.4.9.3.1 Where a circuit is unoccupied, the transmission specified in 2.4.4.9.3 shall be sent at H + 00, H + 20, H + 40.

...

2.4.4.9.3.3 When a teletypewriter channel is equipped with a system of controlled circuit protocol, and following agreement between the Administrations responsible, the transmission specified in 2.4.4.9.3 shall not be made.

2.4.4.9.3.4 *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 2.4.4.9.3. In this case the combined transmission shall be sent as follows:

1) heading (*see 2.4.4.2.1.1*);

...

2.4.4.9.3.5 When a teletypewriter circuit is associated with Automatic Error Correction (ARQ) equipment, and following agreement between the Administrations responsible, the transmissions specified in 2.4.4.9.3 need not be made: however stations employing radio teletypewriter channels on the AFTN for which the station radio identification is required, shall comply with the provisions of 2.4.4.9.3.4.

...

2.4.4.10.1 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 (*see also 2.4.4.1.3 and 2.4.4.1.5.2.3*).

2.4.4.10.1.1 Arising from the responsibility agreements established under the provisions of 2.4.4.9.1, each station of the AFTN shall employ and, subject to the provisions of 2.4.4.9.1.1.1, adhere to a Routing Directory which consists of the Routing List.

2.4.4.10.1.1.1 When an incoming message contains only identical location indicators 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 retransmitted over the circuit from which it was received, without prior service message (*see 2.4.4.1.1.9*) notification of this action being given to the station that had made the previous transmission.

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

*Note.— A method of specifying service address in the optional data field is shown in 2.4.4.4.4.1 and 2.4.4.4.4.1.1.*

#### 2.4.4.10.1.2 *Form of transmission — teletypewriter operation.*

All transmissions shall comprise in the following order (*see Figure 2.4-2*).

...

### **Figure 2.4-2. Form of transmission – teletypewriter operation** (*see 2.4.4.10.1.2*)

...

2.4.4.10.1.3 *Message format.* All messages shall be prepared in accordance with the provisions of 2.4.4.2 (ITA-2 format) or 2.4.4.15 (IA-5 format).

2.4.4.10.1.3.1 The Heading Line, with the exception of the SOH character, shall be omitted on circuits employing one of the data link control procedures contained in 7.8.6.3 and 7.8.6.4 of CAR-ANS Part 7.

...

2.4.4.10.1.4.1.1 When applying the provisions of 2.4.4.10.1.4.1, transmission of the address part of the message shall commence at some point during the 5 SPACES, 1 LETTER SHIFT [→→→→→↓] immediately preceding the first alignment function [≡].

...

2.4.4.10.1.4.2 At a “torn-tape” station, the incoming tapes shall be torn at a position in the message-separation signal component (*see 2.4.4.6.1 and 2.4.4.7.1*) so that the preceding end-of-message signal remains intact.

2.4.4.10.1.4.2.1 Following application of the provisions of 2.4.4.10.1.4.2, the shortened (i.e. less than 12 LETTER SHIFTS [↓]) message separation signal remaining on the message tape shall be deleted, if necessary by electronic methods, before retransmission to an automatic relay installation. If the retransmission is to another “torn tape” station then:

...

2) the shortened message-separation signal remaining on the tape shall be removed and a new and complete message separation signal shall be added to the message in the process of retransmission in accordance with the provisions of 2.4.4.6.1 c).

...

2.4.4.10.1.6 *Acknowledgment of receipt of messages.* In teletypewriter operation and except as provided in 2.4.4.9.1.5.1, a receiving station shall not transmit acknowledgment of receipt of incoming messages. In lieu thereof the provisions of 2.4.4.1.4.1 shall be applied.

2.4.4.10.1.6.1 The receipt of distress messages (priority SS— *see 2.4.4.1.1.1*) shall be individually acknowledged by the AFTN destination station sending a service message (*see 2.4.4.1.1.9*) to the AFTN origin station. Such acknowledgment 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 2.4.4.4.3*) and shall have a text comprising:

...

2) the origin (*see 2.4.4.4*), without priority alarm, or optional heading information of the message being acknowledged;

...

2.4.4.11.1 If, before retransmission is commenced, a relay station detects that a message has been mutilated or improperly formatted at some point ahead of the end-of-message signal, and it has reason to believe that this mutilation had occurred before the message had been received by the previous station, it shall send a service message (*see 2.4.4.1.1.9*) to the originator as

identified by the originator indicator in the origin of the mutilated or improperly formatted message, requesting repetition of the incorrectly received message.

...

2.4.4.11.2 When the provisions of 2.4.4.11.1 are applied, the originator as identified by the originator indicator in the origin of the mutilated message, and shall comply with the provisions of 2.4.4.11.3.

2.4.4.11.3 Following application of the provisions of 2.4.4.11.2, the following reprocessing shall be accomplished before the unmutated version of the message is transmitted for the second time towards the same addressee or addressees:

...

2) *remove* the ending of the message (*see 2.4.4.6.1*);

3) *insert* in lieu thereof the procedure signal DUPE, preceded by at least 1 LETTER SHIFT [↓] and followed by 1 CARRIAGE RETURN, 8 LINE FEEDS, end-of-message signal and, if necessary (*see 2.4.4.6*), the LETTER SHIFTS [↓] of the message-separation signal and tape feed.

*Note.— The example appearing in Figure 2.4-3 illustrates the application of this procedure.*

...

#### **Figure 2.4-3 Example of application of 2.4.4.11.3 procedure**

2.4.4.11.4 If, 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 (*see 2.4.4.1.1.9*) to the previous station rejecting the mutilated transmission and requesting a repetition of the incorrectly received message (or messages).

...

2.4.4.11.5 When the provisions of 2.4.4.11.4 are applied, the station receiving the service message shall re-assume responsibility for the referenced message. It must then retransmit the unmutated copy of the referenced message with a new (i.e. correct in sequence) transmission identification (*see 2.4.4.2.1.1 b*). If that station is not in possession of an unmutated copy of the original message, it shall take the action prescribed in 2.4.4.11.1.

...

2.4.4.11.7 If, during retransmission of a message, a relay station detects that the message has been mutilated at some point ahead of the end-of-message signal and is able to take action before a correct end-of-message signal has been transmitted, it shall:

...

3) comply with the provisions of 2.4.4.11.1 or 2.4.4.11.4 as appropriate.

...

2.4.4.11.11 Relay stations applying the procedural provisions of 2.4.4.11.9 or 2.4.4.11.10 shall, 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.

...

2.4.4.11.13 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 (*see 2.4.4.8*).

2.4.4.11.13.1 In addition, except as in 2.4.4.11.13.3, the station shall send a service message to the previous station requesting correction of the error. The text of this service message shall comprise:

...

9) the end-of-text signal.

*Note.— The following examples illustrate the application of 2.4.4.11.13.1:*

...

2.4.4.11.13.2 A station receiving a service message as prescribed in 2.4.4.11.13.1 shall, if a correct addressee indicator is available, repeat the message to that addressee only using the stripped address procedure (*see* 2.4.4.8) or, if a correct addressee indicator is not available, act as prescribed in 2.4.4.11.13.1.

2.4.4.11.13.3 Where the procedure of 2.4.4.11.13 is applied 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:

...

2.4.4.11.13.4 A station receiving such a service message shall obtain a correct addressee indicator and shall repeat the message to the addressee using the stripped address procedure (*see* 2.4.4.8).

...

2.4.4.11.14.2 The station receiving a service message as prescribed in 2.4.4.11.14.1 shall re-assume responsibility for the referenced message and shall retransmit the message with a correct origin line and a new transmission identification.

...

*Note.— When applying the provisions of 2.4.4.11.14, the minimum requirements for processing the origin of AFTN messages are:*

...

2.4.4.11.15.2 The station receiving a service message as prescribed in 2.4.4.11.15.1 shall resume responsibility for the referenced message and shall retransmit the message with a correct originator indicator and, if applicable, a new transmission identification.

*Note.— When applying the provisions of 2.4.4.11.15 the relay center requirement is as a minimum the first character of the originator indicator verified as the first character of the location indicator of the place at which the message is originated.*

...

2.4.4.12.4 Where the action of 2.4.4.12.3 is not possible, correction to the text shall be made immediately after the error by making the error sign ( $\rightarrow E \rightarrow E \rightarrow E \rightarrow$ ), transmitting the last correct word or group and then continuing with the tape preparation.

2.4.4.12.5 Where neither the action of 2.4.4.12.3 nor the action of 2.4.4.12.4 is possible because the error in the text is not noticed until later in the preparation process (but before the end-of-message signal has been added) the station shall comply with the provisions of 2.4.4.5.5.

...

2.4.4.13.2 Where an error is made, in this circumstance, in any part of the message which precedes the text, the unfinished message shall be cancelled by sending the sequence  $\downarrow \leftarrow \equiv QTA \rightarrow QTA \downarrow \leftarrow \equiv$  followed by a complete ending (*see* 2.4.4.6).

...

2.4.4.13.4 In cases where errors are made in the text and not noticed until later in the origination process, the station shall comply with the provisions of 2.4.4.5.5.

2.4.4.13.5 In cases where it becomes obvious, during the origination of the text, that the message should be cancelled, the station shall take the action described in 2.4.4.13.2.

...

2.4.4.14.2 The Predetermined Distribution Addressee Indicator (PDAI) shall be constructed as follows:

...

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 the MOS-AIS;

...

2.4.4.14.4 AFTN messages carrying Predetermined 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 2.4.4.11.5.

...

2.4.4.15 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) the format described in 2.4.4.12 through 2.4.4.12.3 shall be used. It is the responsibility of Administrations using IA-5 to accommodate adjacent AFTN stations employing ITA-2 code in the format described in 2.4.4.2.

All messages, other than those prescribed in 2.4.4.1.8 and 2.4.4.8.3 shall comprise the components specified in 2.4.4.12.1 to 2.4.4.12.6 inclusive.

...

*Note 2.— In the subsequent standards relative to message format the following symbols have been used in making reference to the functions assigned to certain signals in IA-5. ( See CAR-ANS Part 7, 7.8.6.1.1 and Tables 7.8-2 and 7.8-3).*

...

2.4.4.15.1.1.2 Except as provided in 2.4.4.12.1.1.3 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 another. A separate series of these numbers shall be assigned for each channel and a new series shall be started daily at 0000 hours.

...

2.4.4.15.1.1.5 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 the information in 2.4.4.12.1.1.4 shall be followed immediately by that of 2.4.4.12.2.

...

2.4.4.15.2.1.2 The order of priority shall be the same as specified in 2.4.4.1.2.

...

2.4.4.15.2.1.3.1 Where a message is to be addressed to an organization that has not been allocated an ICAO three-letter designator of the type prescribed in 2.4.4.12.2.1.3 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 X.

...

**Figure 2.4-4. Message format International Alphabet no.5 (IA-5)**

*(The above illustrates the teletypewriter message format described in 2.4.4.15)*

...

2.4.4.15.2.1.4 The complete address shall be restricted to three lines of page printing copy, and, except as provided in 2.4.4.16, a separate addressee indicator shall be used for each addressee whether at the same or different locations.

...

2.4.15.2.1.6 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 with the provisions of 2.4.4.12.2.1.5. 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 centers.

...

2.4.4.15.2.2.1 The filing time shall comprise the 6-digit date-time group indicating the date and time of filing the message for transmission (see 2.4.4.2).

...

2.4.4.15.2.2.3 Where a message is originated by an organization that has not been allocated an ICAO three-letter designator of the type prescribed in 2.4.4.12.2.2.2, 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 in 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.

...

2.4.4.15.3.1 The text of messages shall be drafted in accordance with 2.4.1.2 and shall consist of all data between STX and ETX.

*Note.— When message texts do not require conversion to the ITA-2 code and format and do not conflict with ICAO message types or formats in MOS-ATS, Administrations may make full use of the characters available in International Alphabet No. 5 (IA-5).*

2.4.4.15.3.2 When an originator's reference is used, it shall appear at the beginning of the text, except as provided in 2.4.4.15.3.3 and 2.4.4.15.3.4.

2.4.4.15.3.3 When the ICAO three-letter designators YXY, YYY or ZZZ comprise the second element of the addressee indicator (*see 2.4.4.12.2.1.3.1 and 2.4.4.12.2.1.3.2*) 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.

2.4.4.15.3.4 When the ICAO three-letter designators YXY, YYY or ZZZ comprise the second element of the originator indicator (*see 2.4.4.12.2.2.3 and 2.4.4.12.2.2.4*) 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.

2.4.4.15.3.5 When applying the provisions of 2.4.4.12.3.3 and 2.4.4.12.3.4 to messages 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.

...

2.4.4.15.4 Except as provided in 2.4.4.15.5 to 2.4.4.15.6 and 2.4.4.16, the procedures of 2.4.4.8 and 2.4.4.9 to 2.4.4.13 shall be used for messages using IA-5 code.

...

2.4.4.15.5.1 Where a circuit is unoccupied and uncontrolled, the transmission identified in 2.4.4.15.5 shall be sent at H + 00, H+ 20, H + 40.

2.4.4.15.6 The receipt of distress messages (priority indicator SS, *see 2.4.4.1.1.1*) shall be individually acknowledged by the AFTN destination station by sending a service message (*see 2.4.4.1.1.9*) to the AFTN origin station. Such acknowledgment 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 2.4.4.12.2.2.5*), and shall have a text comprising:

...

2) the origin line (*see 2.4.4.15.2.2*) without priority alarm, or optional heading information of the message being acknowledged;

3) the ending (*see 2.4.4.15.3.12.1*).

...

2.4.4.16.2.2 When the provisions of 2.4.4.16.2.1 are applied, the station receiving the service message shall re assume responsibility for the referenced message with a new (i.e. correct in sequence) transmission identification (*see 2.4.4.15.2.1*). If that station is not in possession of an unmutated 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.

...

2.4.4.17.1 Except as provided in 2.4.4.17.3 the heading line of the message shall be omitted. The message shall start with an alignment function followed by the address.

...

2.4.4.17.3.1 When the provisions of 2.4.4.17.3 are applied, the data added shall not include either carriage return or line feed characters or any of the combinations listed in 2.4.1.2.4.

...

## **2.4.6 ATS Message Handling Services (ATSMHS)**

...

*Note 2.— The detailed specification of the ATS message handling service application is included in the Manual on Detailed Technical Specifications for the Aeronautical Telecommunication Network (ATN) using ISO/OSI Standards and Protocols (ICAO Document 9880), Part II.*

*Note 3.— The ATS message service is provided by the implementation over the ATN internet communication service of the message handling systems specified in ISO/IEC (International*

*Organization for Standardization/International Electrotechnical Commission) 10021 and ITU-T (International Telecommunication Union — Telecommunication Standardization Sector) X.400 and complemented by the additional requirements specified in the Manual on Detailed Technical Specifications for the Aeronautical Telecommunication Network (ATN) using ISO/OSI Standards and Protocols (ICAO Document 9880), Part II. The two sets of documents, the ISO/IEC MOTIS (Message-Oriented Text Interchange System) International Standards and the ITU-T X.400 Series of Recommendations (1988 or later) are, in principle, aligned with each other. However, there are a small number of differences. In the above-mentioned document, reference is made to the relevant ISO International Standards and International Standardized Profiles (ISP), where applicable. Where necessary, e.g. for reasons of interworking or to point out differences, reference is also made to the relevant X.400 Recommendations.*

*Note 4.— The following types of ATN end systems performing ATS message handling services are defined in the Manual on Detailed Technical Specifications for the Aeronautical Telecommunication Network (ATN) using ISO/OSI Standards and Protocols (ICAO Document 9880), Part II:*

...

**Table 2.4-1. Communications between ATN end systems  
implementing ATS message handling services**

...

## **2.5 AERONAUTICAL MOBILE SERVICE VOICE COMMUNICATIONS**

*Editorial Note:- Renumbering of the entire Chapter 2.8 to 2.5.*

### **2.5.1 General**

...

*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 (ICAO Document 9925). Additional guidance for satellite voice communications (SATVOICE) is contained in the Satellite Voice Operations Manual (ICAO Document 10038) and the Performance based Communication and Surveillance (PBCS) Manual (ICAO Document 9869).*

...

2.5.1.1.1 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.

*Note.— Detailed language proficiency requirements appear in the PCAR Part 2, IS 2.2.7.*

2.5.1.1.2 The transmission of messages, other than those specified in 2.5.1.8, on aeronautical mobile frequencies when the aeronautical fixed services are able to serve the intended purpose, shall be avoided.

...

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

*Note.— In certain cases when SELCAL is used the procedures respecting the establishment of communications are contained in 2.5.2.4.*

...

2.5.1.8.1 *Distress messages and distress traffic* shall be handled in accordance with the provisions of 2.5.3.

2.5.1.8.2 *Urgency messages and urgency traffic*, including messages preceded by the medical transports signal, shall be handled in accordance with the provisions of 2.5.3.

...

2.5.1.8.3 *Communications relating to direction finding* shall be handled in accordance with 2.6.

...

2.5.1.8.5 *Meteorological messages* shall comprise meteorological information to or from aircraft, other than those in 2.5.1.8.4, 3).

...

2.5.1.8.6.1 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.

*Note.*— *The messages at 2.5.1.8.4, 2) and 2.5.1.8.6, 1) to 6) typify some of the operational control communications defined in 2.1.*

...

2.5.1.8.8 Interpilot air-to-air communication shall comprise messages related to any matter affecting safety and regularity of flight. The category and priority of these messages shall be determined on the basis of their content in accordance with 2.5.1.8.

...

## **2.5.2 Radiotelephony Procedures**

*Note.*— *When Selective Calling (SELCAL) equipment is used certain of the following procedures are superseded by those contained in 2.5.2.4.*

...

2.5.2.1.1 When a controller or pilot communicates via voice, the response shall be via voice. Except as provided by 2.5.2.12.1, when a controller or pilot communicates via CPDLC, the response shall be via CPDLC.

...

2.5.2.1.3 *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 2.5-1 shall be used.

...

*Note 2.*— *The Spelling Alphabet specified in 2.5.2.1.3 is also prescribed for use in the Maritime Mobile Service (ITU Radio Regulations, Appendix S14).*

...

### **Figure 2.5-1. The Radiotelephony Spelling Alphabet (see 2.5.2.1.3)**

...

2.5.2.1.4.1.1 All numbers, except as prescribed in 2.5.2.1.4.1.2, to 2.5.2.1.4.1.6 shall be transmitted by pronouncing each digit separately.

*Note.*— *The following examples illustrate the application of this procedure (see 2.5.2.1.4.3.1 for pronunciation).*

...

2.5.2.1.4.1.2 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 2.5.2.1.4.3.1 for pronunciation).*

...

2.5.2.1.4.1.3 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 2.5.2.1.4.3.1 for pronunciation).*

...

2.5.2.1.4.1.4 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 2.5.2.1.4.3.1 for pronunciation).*

...

2.5.2.1.4.1.5 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 2.5.2.1.4.3.1 for pronunciation).*

...

2.5.2.1.4.1.7 Numbers containing a decimal point shall be transmitted as prescribed in 2.5.2.1.4.1.1 with the decimal point in appropriate sequence being indicated by the word DECIMAL.

...

*Note 2.— For identification of VHF frequencies the number of digits used after the decimal point are determined on the basis of the channel spacing (2.5.2.1.7.3.4.3 refers to frequencies separated by 25 kHz, 2.5.2.1.7.3.4.4 refers to frequencies separated by 8.33 kHz).*

...

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

*Note.— The following example illustrates the application of this procedure when applying the provisions of 2.5.2.1.2.2:*

...

2.5.2.1.5.5 Messages accepted for transmission shall 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 shall 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.

*Note.— The abbreviations which constitute the exceptions mentioned in 2.5.2.1.5.5 are specifically identified in the abbreviation encode sections of the PANS-ABC (ICAO Document 8400).*

...

2.5.2.1.6.1 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 (*see 2.5.2.1.7.3*);

b) text (*see 2.5.2.1.6.2.1.1*).

...

2.5.2.1.6.2 Messages requiring handling by the AFTN for part of their routing and similarly messages which are not handled in accordance with predetermined distribution arrangements (*see 2.3.3.7.1*) shall be composed as follows:

2.5.2.1.6.2.1 *When originated in an aircraft:*

1) call (*see 2.5.2.1.7.3*);

...

2.5.2.1.6.2.2.1 When the provisions of 2.5.2.1.6.2.2 are applied, the aeronautical mobile service message transmission shall comprise:

...

2.5.2.1.6.2.2.2 When the text of a message to be transmitted by an aeronautical station to an aircraft in flight contains approved ICAO abbreviations, these abbreviations shall 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 in 2.5.2.1.6.2.2.2 are specifically identified in the abbreviations encode sections of the PANS-ABC (ICAO Document 8400).*

...

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

...

*Note 1.— The name of the aircraft manufacturer or of the aircraft model may be used as a radiotelephony prefix to the Type a) call sign (see Table 2. 5-1).*

*Note 2.— The telephony designators referred to in Types b) and c) are contained in ICAO Document 8585 — Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services.*

...

2.5.2.1.7.2.2.1 The aircraft radiotelephony call signs shown in 2.5.2.1.7.2.1.1, with the exception of Type c), may be abbreviated in the circumstances prescribed in 2.5.2.1.7.3.3.1. Abbreviated call signs shall be in the following form:

...

**Table 2.5 – 1 Example of full call signs and abbreviated call signs**

(*see 2.5.2.1.7.2.1 and 2.5.2.1.7.2.2*)

...

2.5.2.1.7.3.2.1 Full radiotelephony call signs shall always be used when establishing communication. The calling procedure of an aircraft establishing communication shall be in accordance with Table 2.5-2.



**Table 2.5 – 2. Radiotelephony calling procedure\***  
(see 2.5.2.1.7.3.2.1)

...

\*\* 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 prescribed in 2.5.2.1.3 shall be used. Numbers are to be spoken in accordance with 2.5.2.1.4.

...

2.5.2.1.7.3.2.3 The reply to the above calls shall be in accordance with Table 2.5-3. The use of the calling aeronautical station's call sign followed by the answering aeronautical station's call sign shall be considered the invitation to proceed with transmission by the station calling.

**Table 2.5 – 3. Radiotelephony reply procedure\***  
(see 2.5.2.1.7.3.2.3)

...

2.5.2.1.7.3.3.1 Abbreviated radiotelephony call signs, as prescribed in 2.5.2.1.7.2.2, 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.

...

2.5.2.1.7.3.4.3 Except as specified in 2.5.2.1.7.3.4.4 all six digits of the numerical designator shall be used to identify the transmitting channel in VHF radiotelephony communications, except in the case of both the fifth and sixth digits being zeros, in which case only the first four digits should be used.

*Note 1.— The following examples illustrate the application of the procedure in 2.5.2.1.7.3.4.3:*

...

2.5.2.1.7.3.4.4 In airspace where all VHF voice communications channels are separated by 25 kHz or more and the use of six digits as in 2.5.2.1.7.3.4.3 is not substantiated by the operational requirement determined by the appropriate authorities, the first five digits of the numerical designator shall be used, except in the case of both the fifth and sixth digits being zeros, in which case only the first four digits should be used.

*Note 1.— The following examples illustrate the application of the procedure in 2.5.2.1.7.3.4.4 and the associated settings of the aircraft radio management panel for communication equipment with channel separation capabilities of 25 kHz and 8.33/25 kHz:*

...

2.5.2.2.1.1.3 Aircraft on flights other than those specified in 2.5.2.2.1.1.1 and 2.5.2.2.1.1.2 shall guard the emergency frequency 121.5 MHz to the extent possible.

...

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

...

c) be responsible for the action required in case of failure of communications (see 2.5.2.2.7.2).

...

2.5.2.2.3.2 An aeronautical station, when designating frequencies in accordance with 2.5.2.2.3.1.1 or 2.5.2.2.3.1.2, shall take into account the appropriate propagation data and distance over which communications are required.

...

2.5.2.2.3.4 When, notwithstanding the provisions of 2.5.1.1, air-ground frequencies are used for the exchange between network stations of messages essential for coordination and

cooperation between the stations, such communication shall, 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 shall take priority over the inter-ground station communications.

...

2.5.2.2.4.4 The provisions of 2.5.2.2.4.3 and 2.5.2.2.4.3.1 shall also be applied:

...

2.5.2.2.7.1.2 If the attempts specified under 2.5.2.2.7.1.1 fail, the aircraft station shall transmit its message twice on the designated channel(s), preceded by the phrase "TRANSMITTING BLIND" and, if necessary, include the addressee(s) for which the message is intended.

...

2.5.2.2.7.1.3.2 An aircraft which is provided with air traffic control or advisory service shall, in addition to complying with 2.5.2.2.7.1.3.1, transmit information regarding the intention of the pilot-in-command with respect to the continuation of the flight of the aircraft.

2.5.2.2.7.1.3.3 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.

*Note.— General rules which are applicable in the event of communications failure are contained in CAR-ANS Part 14.*

...

2.5.2.2.7.2.2 The provisions of 2.5.2.2.7.2.1 shall also be applied:

2.5.2.2.7.2.3 If the attempts specified in 2.5.2.2.7.2.1 fail, the aeronautical station shall 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.

...

2.5.2.3.1.2.3.1 If, in abnormal circumstances, forwarding is necessary using the air-ground channels, the provisions of 2.5.2.2.3.4 shall be observed.

2.5.2.3.1.3 The provisions of 2.5.2.3.1.2 shall also be applied, if practicable, in non-network operation.

2.5.2.3.1.4.1 If the aeronautical station to which the message is addressed is unable to dispose of the message in accordance with 2.5.2.3.1.4, the station of origin shall be advised.

...

2.5.2.4 SELCAL procedures

*Note.— The procedures contained in 2.5.2.4 are applicable when SELCAL is used and replace certain of the procedures related to calling contained in 2.5.2.1.*

...

2.5.3.1.4 If no acknowledgement of the distress or urgency message is made by the station addressed by the aircraft, other stations shall render assistance, as prescribed in 2.5.3.2.2 and 2.5.3.3.2 respectively.

...

2.5.3.2.1.1 In addition to being preceded by the radiotelephony distress signal MAYDAY (*see* 2.5.3.1.2), preferably spoken three times, the distress message to be sent by an aircraft in distress shall:

...

f) any variation on the elements listed under 2.5.3.2.1.1 b), when the transmitting station is not itself in distress, provided that such circumstance is clearly stated in the distress message.

...

2.5.3.2.3.2 The use of the signals specified in 2.5.3.2.3.1 shall be reserved for the aircraft station in distress and for the station controlling the distress traffic.

...

2.5.3.2.5.3 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 prescribed in 2.5.3.2.5.1, it is authorized to do so by the appropriate authority.

...

2.5.3.3.1 Action by the aircraft reporting an urgency condition except as indicated in 2.5.3.3.4.

2.5.3.3.1.1 In addition to being preceded by the radiotelephony urgency signal PAN PAN (*see* 2.5.3.1.2), preferably spoken three times and each word of the group pronounced as the French word “panne”, the urgency message to be sent by an aircraft reporting an urgency condition shall:

...

*Note 1.— The foregoing provisions of 2.5.3.3.1.1 are not intended to prevent an aircraft broadcasting an urgency message, if time and circumstances make this course preferable.*

...

2.5.3.3.4.1 The use of the signal described in 2.5.3.3.4.2 shall indicate that the message which follows concerns a protected medical transport pursuant to the 1949 Geneva Conventions and Additional Protocols.

...

2.5.3.3.5.1 The provisions of 2.5.3.3.2 and 2.5.3.3.3 shall apply as appropriate to stations receiving a medical transports message.

...

## **2.6 AERONAUTICAL RADIO NAVIGATION SERVICE**

*Editorial Note:- Renumbering of the entire Chapter 2.9 to 2.6.*

...

## **2.7 AERONAUTICAL BROADCASTING SERVICE**

*Editorial Note:- Renumbering of the entire Chapter 2.10 to 2.7.*

...

## **2.8 AERONAUTICAL MOBILE SERVICE – DATA LINK COMMUNICATIONS**

*Editorial Note:- Renumbering of the entire Chapter 2.11 to 2.8.*

### **2.8.1 General**

*Note 1.— While the provisions of 2.8 are based primarily on the use of controller-pilot data link communications (CPDLC), the provisions of 2.8.1 would apply to other data link applications, where applicable, including Data link—flight information services (e.g. D-ATIS, DVOLMET, etc.).*

...

*Note 3.— Guidance material relating to CPDLC, ADS-C and related data link initiation capability (DLIC) can be found in the Global Operational Data Link (GOLD) Manual (ICAO Document 10037).*

...

2.8.1.1.1.2 The logon address associated with an ATS unit shall be published in the Aeronautical Information Publications in accordance with CAR-ANS Part 15.

...

*Note 2.— Detailed specifications concerning aeronautical information publications presentation and contents are contained in the Procedures for Air Navigation Services – Aeronautical Information Management MOS-AIS, Appendix 2.*

...

2.8.1.2.1 The text of messages shall be composed in standard message format (e.g. CPDLC message set), in plain language or in abbreviations and codes, as prescribed in 2.3.7. Plain language shall be avoided when the length of the text can be reduced by using appropriate abbreviations and codes. Non-essential words and phrases, such as expressions of politeness, shall not be used.

...

2.8.2.9.1.2 Except as provided by 2.8.2.12.1, when a controller or pilot communicates via CPDLC, the response shall be via CPDLC. When a controller or pilot communicates via voice, the response shall be via voice.

...

2.8.2.9.3.1 The alert attribute shall delineate the type of alerting required upon message receipt. Alert types are presented in Table 2.8-2.

2.8.2.9.3.2 The response attribute shall delineate valid responses for a given message element. Response types are presented in Table 2.8-3 for uplink messages and Table 2.8-4 for downlink messages.

...

2.8.2.9.3.2.4 When a multi-element clearance request can only be partially accommodated, the controller shall respond with an UNABLE message applying to all the message elements of the request and, if appropriate, include a reason and/or information on when a clearance may be expected.

*Note – A separate CPDLC message (or messages) may subsequently be transmitted to respond to those elements that can be accommodated.*

...

#### **Table 2.8 – 1 Alert Attribute (Uplink and Downlink)**

...

#### **Table 2.8 – 2 Response Attribute (Uplink)**

...

#### **Table 2.8 – 3 Response Attribute (Downlink)**

...

2.8.2.11.2 When the CPDLC message set contained in MOS-ATS does not provide for specific circumstances, the appropriate ATS Authority may determine that it is acceptable to use free text message elements. In such cases, the appropriate ATS Authority, in consultation with operators and other ATS authorities that may be concerned, shall define display format, intended use and attributes for each free text message element and publish them with relevant procedures in the AIPs.

...

2.8.2.12.4 *Failure of CPDLC.*

*Note 1. – Action to be taken in the event of a data link initiation failure is covered in 2.8.1.1.4.*

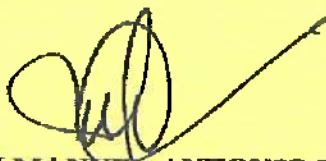
*Note 2. – Action to be taken in the event of the failure of a single CPDLC message is covered in 2.8.2.12.7.*

...  
XXX

**-END-**

- i. **Separability Clause.** - If, for any reason, any provision of this Memorandum Circular is declared invalid or unconstitutional, the other part or parts thereof which are not affected thereby shall continue to be in full force and effect.
- ii. **Repealing Clause.** - All orders, rules, regulations and issuances, or parts thereof which are inconsistent with this Memorandum Circular are hereby repealed, superseded or modified accordingly.
- iii. **Determination of changes.** – To highlight the amendments and/or revisions in the Memorandum Circular, the deleted text shall be shown with strikethrough and the new inserted text shall be highlighted with grey shading, as illustrated below:
  1. Text deleted: ~~Text to be deleted is shown with a line through it.~~
  2. New text inserted: **New text is highlighted with grey shading.**
  3. New text replacing existing text: ~~Text to be deleted is shown with a line through it~~ followed by the replacement text which is **highlighted with grey shading.**
- iv. **Effectivity Clause.** - This Memorandum Circular shall take effect fifteen (15) days after publication in a requisite single newspaper of general circulation or the Official Gazette and a copy filed with the U.P. Law Center - Office of the National Administrative Register. The amendment shall be incorporated to Philippine CAR-ANS in the next regular Amendment Cycle.

So Ordered. Signed this 21 day of DEC 2023, at the Civil Aviation Authority of the Philippines, MIA Road, Pasay City, Metro Manila, 1301.



**CAPTAIN MANUEL ANTONIO L. TAMAYO**  
Director General 